

Eurasian Studies in Business and Economics 12/2

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Eurasian Business Perspectives

Proceedings of the 25th Eurasia
Business and Economics Society
Conference



 Springer

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Representing

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Editors

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and Economics Society Conference

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ISSN 2364-5067

ISSN 2364-5075 (electronic)

Eurasian Studies in Business and Economics

ISBN 978-3-030-35050-5

ISBN 978-3-030-35051-2 (eBook)

<https://doi.org/10.1007/978-3-030-35051-2>

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Preface

This is the Volume 2—**Eurasian Business Perspectives**—of the 12th issue of the Springer’s series *Eurasian Studies in Business and Economics*, which is the official book series of the **Eurasia Business and Economics Society** (EBES, www.ebesweb.org). This issue includes selected papers presented at the 25th EBES Conference—Berlin that was held on **May 23–25, 2018**, with *the GLO (the Global Labor Organization)* at the *FOM University of Applied Sciences* in Berlin, Germany, with the support of the *Istanbul Economic Research Association*.

Distinguished colleagues **Klaus F. Zimmermann** from *UNU-MERIT*, the Netherlands, **Marco Vivarelli** from *Universita Cattolica del Sacro Cuore in Milano*, Italy, **Sascha Frohwerk** from *the FOM University of Applied Sciences in Berlin*, Germany, and **Ahmet Faruk Aysan** from *Istanbul Sehir University*, Turkey, joined the conference as keynote speakers.

During the conference, participants had many productive discussions and exchanges that contributed to the success of the conference where 316 papers by 525 colleagues from 60 countries were presented. In addition to publication opportunities in EBES journals (*Eurasian Business Review* and *Eurasian Economic Review*, which are also published by Springer), conference participants were given the opportunity to submit their full papers for this issue.

Theoretical and empirical papers in the series cover diverse areas of business, economics, and finance from many different countries, providing a valuable opportunity to researchers, professionals, and students to catch up with the most recent studies in a diverse set of fields across many countries and regions.

The aim of the EBES conferences is to bring together scientists from business, finance, and economics fields, attract original research papers, and provide them with publication opportunities. Each issue of *the Eurasian Studies in Business and Economics* covers a wide variety of topics from business and economics and provides empirical results from many different countries and regions that are less investigated in the existing literature. All accepted papers for the issue went through peer-review process and benefited from the comments made during the conference

as well. The current issue covers fields such as marketing, tourism, management, accounting and finance.

Although the papers in this issue may provide empirical results for a specific county or regions, we believe that the readers would have an opportunity to catch up with the most recent studies in a diverse set of fields across many countries and regions and empirical support for the existing literature. In addition, the findings from these papers could be valid for similar economies or regions.

On behalf of the series editors, volume editors, and EBES officers, I would like to thank all presenters, participants, board members, and the keynote speakers, and we are looking forward to seeing you at the upcoming EBES conferences.

Best regards

Istanbul, Turkey

Ender Demir

Eurasia Business and Economics Society (EBES)

EBES is a scholarly association for scholars involved in the practice and study of economics, finance, and business worldwide. EBES was founded in 2008 with the purpose of not only promoting academic research in the field of business and economics but also encouraging the intellectual development of scholars. In spite of the term “Eurasia,” the scope should be understood in its broadest terms as having a global emphasis.

EBES aims to bring worldwide researchers and professionals together through organizing conferences and publishing academic journals and increase economics, finance, and business knowledge through academic discussions. Any scholar or professional interested in economics, finance, and business is welcome to attend EBES conferences. Since our first conference in 2009, around 11,157 colleagues from 98 countries have joined our conferences and 6379 academic papers have been presented. *EBES has reached 2050 members from 84 countries.*

Since 2011, EBES has been publishing two journals. One of those journals, *Eurasian Business Review—EABR*, is in the fields of industrial organization, innovation, and management science, and the other one, *Eurasian Economic Review—EAER*, is in the fields of applied macroeconomics and finance. Both journals are published quarterly by *Springer* and indexed in *Scopus*. In addition, EAER is indexed in the *Emerging Sources Citation Index (Clarivate Analytics)*, and EABR is indexed in the *Social Science Citation Index (SSCI)*.

Furthermore, since 2014 Springer has started to publish a new conference proceedings series (*Eurasian Studies in Business and Economics*) which includes selected papers from the EBES conferences. The 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, and 20th (Vol. 2) EBES Conference Proceedings have already been accepted for inclusion in the *Conference Proceedings Citation Index—Social Science & Humanities (CPCI-SSH)*. The 20th (Vol. 1), 21st, and subsequent conference proceedings are in progress.

We look forward to seeing you at our forthcoming conferences. We very much welcome your comments and suggestions in order to improve our future events. Our success is only possible with your valuable feedback and support!

I hope you enjoy the conference and Berlin.

With my very best wishes,

Klaus F. Zimmermann
President

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Part I
Management

Changing the Situation or Changing Oneself? A Model of Task and Cognitive Job Crafting



Severin Hornung

Abstract Proactive workplace behavior is currently a topic of significant interest. Particularly influential, the construct of job crafting describes self-initiated and autonomously enacted physical and cognitive changes in work boundaries. In this study, the analysis of covariance structures in employee survey data ($N = 1196$) is used to model individual, interpersonal, and organizational antecedents and psychological outcomes of situation-directed (task) and self-directed (cognitive) job crafting. Confirmed as shared antecedents were individual growth need strength and intellectually stimulating transformational leader behavior. Situational constraints appeared to trigger active coping, manifesting in self-enacted task adjustments, but did not lead to increased cognitive reframing or sensemaking attempts. Different motivational implications of the two types of crafting under study were captured with the multidimensional construct of psychological empowerment. Task crafting related primarily to the control-oriented empowerment dimensions of self-determination and impact. In contrast, cognitive crafting was associated predominantly with person-oriented aspects of meaning and competence. New contributions to the literature include the framing of job crafting as self-empowerment and the differentiation between situation-directed and self-directed modes. Limitations arise from cross-sectional self-report data, ad hoc scale development, and exclusion of relational crafting. Implications for work motivation and well-being are discussed.

Keywords Proactive behavior · Job crafting · Growth need strength · Intellectual stimulation · Situational constraints · Psychological empowerment

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© Springer Nature Switzerland AG 2020

M. H. Bilgin et al. (eds.), *Eurasian Business Perspectives*, Eurasian Studies in Business and Economics 12/2, https://doi.org/10.1007/978-3-030-35051-2_1

1 Introduction

Within the last two decades of organizational scholarship, the construct of job crafting has attracted exceptional attention (Bakker et al. 2012; Demerouti et al. 2015; Rudolph et al. 2017). Introduced by Wrzesniewski and Dutton (2001) based on research into personal work orientations (Wrzesniewski et al. 1997), job crafting describes “physical and cognitive changes individuals make in the task or relational boundaries of their work” (Wrzesniewski and Dutton 2001, p. 179). Casting employees as active “co-creators” of their working situation, job crafting captures actions through which individuals adapt, develop, and personalize their job designs and occupational identities to make their work experience more meaningful, motivating, and satisfactory by modifying task (e.g., number, scope, and type of job tasks), cognitive (e.g., work-related attitudes, beliefs, and perceptions), and relational features (e.g., quality or quantity of social interactions) of their work role. Similar ideas can be found in Ilgen and Hollenbeck’s (1991) job role differentiation theory and the work of Jones (1986) and colleagues on proactive socialization tactics (Ashford and Black 1996; Black and Ashford 1995). Some influential theoretical elaborations, qualitative studies, and practice-oriented publications (e.g., Berg et al. 2010; Lyons 2008; Wrzesniewski et al. 2010) notwithstanding, quantitative empirical research on job crafting was initially held back by a lack of survey measures. A case in point, an early study by Leana et al. (2009) adapted a scale on taking charge (Morrison and Phelps 1999) to assess individual and collective job crafting. A breakthrough was the scale development by Tims et al. (2012). Reinterpreting the construct according to the job demands-resources model (Bakker and Demerouti 2007) as “changes that employees may make to balance their job demands and job resources with their personal abilities and needs” (Tims et al. 2012, p. 174), these authors distinguish four dimensions: (a) increasing structural job resources (e.g., learning new skills); (b) increasing social job resources (e.g., seeking support from supervisors); (c) increasing challenging job demands (e.g., volunteering for assignments); and (d) decreasing hindering job demands (e.g., avoiding conflicts). Versions of this scale have been used extensively, including long-term longitudinal, diary, and intervention studies—investigating a range of antecedents (e.g., demographic factors, individual differences, and job characteristics) and outcomes (e.g., job attitudes, work engagement, job strain, and performance (Bakker et al. 2012; Demerouti et al. 2015; Gordon et al. 2018; Harju et al. 2016; Petrou et al. 2012; Tims et al. 2016; Van Wingerden et al. 2017; for an overview see Rudolph et al. 2017)). The underlying theoretical foundation and operationalization, however, has remained detached from the initial conceptualization, particularly lacking a representation of cognitive crafting—a central component in Wrzesniewski and Dutton’s (2001) theorizing. Although Tims and Bakker (2010) have argued that changes in own thoughts, attitudes, or beliefs reflect avoidance coping rather than proactive behavior, this claim does not seem aligned with the literature (Bindl and Parker 2011; Gloria and Steinhardt 2016). Rather, task and cognitive crafting resemble a classic distinction between primary and secondary control (Rothbaum et al. 1982).

Yet, with few exceptions (Slemp and Vella-Brodrick 2013), researchers have followed Tims et al.'s (2012) reconceptualization of job crafting as exclusively situation-directed. Overall, the reinterpreted version of job crafting (Nielsen and Abildgaard 2012; Tims et al. 2012, 2016; Bakker et al. 2012, 2016) has advanced the job demands-resources model, but does not fully reflect the initial concept. In addition to neglecting the complementary roles of situation-directed (external or physical) task and self-directed (internal or psychological) cognitive crafting, research has focused on personality predictors and performance outcomes, attributing less attention to contextual antecedents. Promoting the original conceptualization, we present a model of task and cognitive job crafting, including individual (growth need strength), interpersonal (transformational leader behavior of intellectual stimulation), and organizational antecedents (hindrance stressors of situational constraints), as well as specific motivational outcomes. To address a dearth of survey measures, scales on task and cognitive job crafting are developed. Differential effects of the two types are contrasted based on control-oriented (self-determination and impact) and person-oriented (meaning and competence) aspects of psychological empowerment. Hypotheses are tested in a sample of $N = 1196$ Chinese white-collar workers using structural equation modeling. This study contributes to the literature by elaborating the distinction between task and cognitive job crafting and embedding these two forms into a model of their shared individual and contextual antecedents as well as specific psychological consequences.

2 Task and Cognitive Crafting

Job crafting exemplifies proactive workplace behavior (Grant and Ashford 2008; Grant and Parker 2009), understood as spontaneous, anticipatory, or self-starting, based on individual initiative, rather than prompted, compliant, or reactive. Proactive actions are aimed at taking control, exercising influence, and enacting positive changes, manifesting in future-oriented and persistent behavior to overcome obstacles and achieve goals (Frese et al. 1996, 1997). Proactivity has been studied in terms of taking charge to improve work processes, proactive involvement in organizational change, proactive coping, problem-solving, and feedback-seeking, career initiative, and negotiation of idiosyncratic deals regarding personalized work and employment conditions (Ashford and Black 1996; Fried et al. 2007; Hornung 2018; Hornung and Rousseau 2007; Parker and Collins 2010; Rofcanin et al. 2016). Bindl and Parker (2011, p. 568) have suggested an integrative definition of proactive behavior as “self-directed and future-focused action in an organization in which the individual aims to bring about change, including change to the situation (e.g., introducing new work methods, influencing organizational strategy) and/or change within him- or herself (e.g., learning new skills to cope with future demands).” Parker and Collins (2010) have differentiated higher order categories of: (a) proactive work behavior changing the internal organizational environment (e.g., voice and innovation); (b) proactive strategic behavior changing the organization's fit with the external

environment (e.g., issue selling); and (c) proactive person-environment fit behavior improving fit between the individual and the organizational environment (e.g., feedback-seeking). Accordingly, task and cognitive crafting reflect central dimensions of proactive behavior targeting work design and job identity. Task crafting refers to modifications of the number, scope, or type of job duties, for example, taking over new tasks, changing work processes, or devoting extra time to certain job aspects (Wrzesniewski and Dutton 2001). This broadly resembles proactive work behavior aimed at affecting changes in the work environment (e.g., job content or working conditions) but also includes proactive person-environment fit behavior (e.g., modifying tasks to fit personal abilities, strengths, and interests). Cognitive crafting involves reframing one's occupational role, tasks, and job boundaries, for example, by viewing the work in a larger context or focusing on personally meaningful aspects (e.g., benefits for oneself, customers, or society; Berg et al. 2010). Cognitive crafting thus is a form of proactive person-environment fit behavior (Cable and Edwards 2004; Caplan 1987), aimed at changing oneself (e.g., thoughts or behavior) to increase correspondence between supplies and demands of the job relative to personal beliefs, values, and motivations. Task and cognitive crafting complement each other as situation-directed (external or physical) and self-directed (internal or psychological) proactive person-environment fit or work design behaviors. Wrzesniewski and Dutton (2001) identified a third dimension of relational job crafting, concerning social interactions at work, such as number, nature, timing, and persons involved. Both task and cognitive crafting affect work relationships (e.g., collaborative tasks, attitudes toward colleagues or customers), however, relational crafting was not included as a separate dimension to maintain study parsimony. The social design of work is a complex issue and relational crafting especially pertinent to human service work (Grant 2007; Grant and Parker 2009). However, it may also include changing supervisors, work groups, or interdependence with colleagues (Freney and Fellenz 2013). Here, the more generally applicable dimensions of task and cognitive job crafting were examined. The conceptual model is displayed in Fig. 1. Antecedents included individual, interpersonal, and organizational aspects. Concerning individual differences, the focus was on growth need strength (Tiegls et al. 1992). Interpersonal processes were represented by transformational leader behavior of intellectual stimulation (Podsakoff et al. 1990). Organizationally imposed situational constraints (Peters and O'Connor 1980) were assumed to trigger job crafting as proactive coping (Aspinwall and Taylor 1997). While antecedents apply to both types of crafting, the multidimensional construct of psychological empowerment (Spreitzer et al. 1997) reflects the differential effects of situation-directed (external or physical) and self-directed (internal or psychological) crafting. Task crafting was hypothesized to predominantly relate to control-oriented dimensions of self-determination and impact, whereas cognitive crafting was expected to relate mainly to person-focused or self-oriented dimensions of meaning and competence.

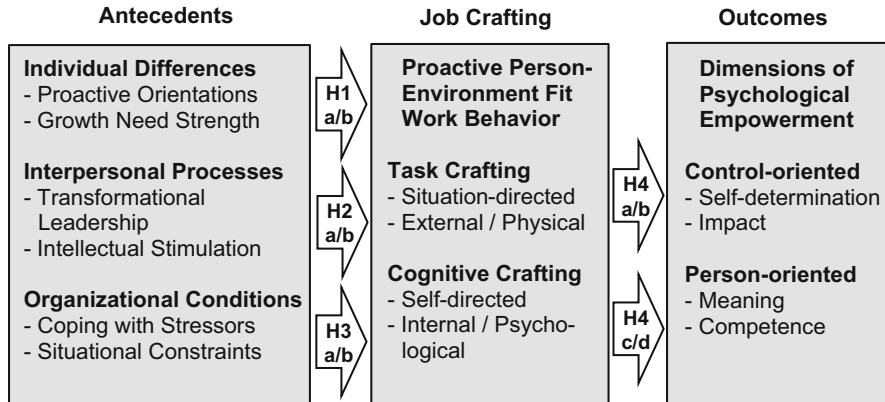


Fig. 1 Conceptual model of task and cognitive crafting (Source: Own illustration)

2.1 Individual Differences

Early work has emphasized the dual nature of proactivity as both behavior and personality (Crant 2000; Grant and Ashford 2008). Accordingly, the propensity to craft one’s job is likely influenced by personal predispositions (Bipp and Demerouti 2015; Lyons 2008). For instance, Ashford and Black (1996) have shown that organizational newcomers with high control needs use more proactive tactics of positive framing, feedback-seeking, relationship building, and job change negotiation. Parker and Collins (2010) have demonstrated that proactive personality, the general disposition toward exercising influence and initiating change, and learning goal orientation, the tendency to seek out opportunities for mastery experiences, predict a range of proactive behaviors. Frese and associates have presented a body of research on personal initiative, the self-starting and persistent pursuit of personal and organizational goals (Frese et al. 1996, 1997, 2007). Using comparisons between East and West Germany as a “quasi-experimental” design, these authors showed that initiative is influenced not only by individual orientations, such as self-efficacy and control aspirations, but also develops through socialization experiences tied to work design and opportunities for control. Accordingly, predispositions toward proactivity may be more fluid than commonly assumed, shaped by longer term socialization processes in self-reinforcing gain and loss spirals of “learned helplessness,” respectively, “learned resourcefulness,” based on frustrated versus successful attempts to influence the environment in accordance with own needs and goals (Frese 1982; Hornung and Rousseau 2007; Martinko and Gardner 1982; Weigl et al. 2010). Individual differences are among the most widely studied predictors of job crafting, including the five-factor model (conscientiousness, extraversion, neuroticism, agreeableness, and openness to experience), proactive personality, promotion and prevention regulatory focus, and general self-efficacy (Rudolph et al. 2017). Neglected, so far, has been growth need strength—an important construct in Hackman and Oldham’s (1975) job characteristics theory (Tiegs et al.

1992). Related to need for control, proactive personality, and learning orientation, growth need strength describes the desire to obtain satisfaction from achievement, mastery, and skill development at work (Shalley et al. 2009; Spector 1985). Integrating this construct, we assumed that individuals with high growth needs more actively shape and redefine their jobs to facilitate learning experiences (Dweck 1986).

Hypothesis 1 Individual growth need strength will relate positively to both task crafting (H1a) and cognitive crafting (H1b).

2.2 *Interpersonal Processes*

The proposition that employee-oriented leaders encourage job crafting, although intuitive, is not well established (Bakker et al. 2016). In Leana et al.'s (2009) study, supportive supervision was unrelated to individual job crafting and only a weak predictor of collaborative crafting at the group level. While this may be attributable to the unspecific measure these authors have used, a more recent study by Wang et al. (2017) also did not find a hypothesized relationship between transformational leadership and crafting aimed at reducing hindrance demands. However, these authors report weak indirect relationships between transformational leadership and efforts to expand work-related resources and challenges. These effects were mediated via employee adaptability, but only applied to conditions of low organizational identification. Revisiting these findings, we draw on the transformational leadership literature (Judge and Piccolo 2004; Podsakoff et al. 1990), focusing on the dimension of intellectual stimulation. Transformational leaders influence values, attitudes, and beliefs of their followers, motivating and empowering them to perform above and beyond specified job duties (Bass 1999). Transformational leadership comprises heterogeneous aspects, such as articulating a vision, serving as role model, using inspirational motivation to promote group goals, communicating high performance expectations, providing individualized consideration, and offering intellectual stimulation (Podsakoff et al. 1990; Rafferty and Griffin 2004). The transformational leadership model has been criticized on a number of grounds (Currie and Lockett 2007), particularly, for lacking a conceptual basis for included dimensions and how these synergistically integrate to exemplify change-supportive leaders. Following Van Knippenberg and Sitkin's (2013) recommendation to focus on more clearly defined and distinct aspects of leadership, we singled out the most relevant dimension of intellectual stimulation, which refers to leader behavior encouraging employees to challenge assumptions about their work and come up with new ideas on how to perform tasks in better ways (Bass 1999; Podsakoff et al. 1990). Intellectual stimulation promotes change-oriented behavioral and thinking patterns, which should manifest in task and cognitive job crafting.

Hypothesis 2 Transformational leader behavior of intellectual stimulation will relate positively to both task crafting (H2a) and cognitive crafting (H2b).

2.3 *Organizational Conditions*

The impetus for job crafting is not necessarily positive—workers can use job crafting to overcome obstacles, reframe unfavorable conditions, and change dissatisfying or distressing situations (Berg et al. 2010). Accordingly, the reconceptualization by Tims et al. (2012) includes efforts to decrease hindering job demands, such as avoiding emotionally stressful situations. Underlying this dimension is the distinction between hindrance and challenge demands (or stressors), first established in meta-analytic results (LePine et al. 2005) and later integrated into the job demands-resources model (Crawford et al. 2010; Schneider et al. 2017). The hindrance-challenge taxonomy reflects the observation that some job demands consistently have negative effects on well-being and health, whereas others relate positively to indicators of both job stress and strain as well as work motivation and job performance. Based on the transactional stress model (Lazarus and Folkman 1984), it has been argued that the former, including task complexity and time urgency, are appraised as challenges—as successfully overcoming them provides a source of achievement, self-efficacy, and mastery. Hence, another dimension in the job demands-resources model of job crafting operationalizes efforts to expand challenging demands, such as seeking out difficult assignments to increase learning opportunities (Tims et al. 2012; Rudolph et al. 2017; see also Hornung et al. 2010). In contrast, purely stressful demands such as role conflict and ambiguity are likely appraised as negative hindrances, as they impede, obstruct, or interfere with the attainment of work goals. A corresponding distinction between psychological regulation requirements (demands) and regulation hindrances (stressors) is made in the framework of action regulation theory (Glaser et al. 2015; Oesterreich and Volpert 1986). The concept of situational constraints advocated by Peters and O'Connor (1980) also resembles hindrance demands (O'Connor et al. 1982) manifesting in organizational conditions that impede the fulfillment of work goals and interfere with the translation of individual abilities and motivation into performance (e.g., ambiguous or incompatible work assignments, dysfunctional instructions, counterproductive regulations). Situational constraints typically trigger negative responses, such as frustration, counterproductive behaviors, and impaired psychophysical well-being (Chen and Spector 1992; Fox and Spector 1999; Spector and Jex 1998). However, individuals cope with stressful demands in different ways, such as seeking emotional or instrumental support from others, withdrawal and substance abuse, or actively trying to take control of the situation (Folkman and Moskowitz 2004; Skinner et al. 2003). Effective ways of coping include positively reframing stressful situations as challenges rather than threats and taking steps to constructively deal with underlying problems (Aspinwall and Taylor 1997; Gloria and Steinhart 2016; Hornung et al. 2016). As such, cognitive and task crafting share properties of active and problem-oriented coping, enacted by employees to overcome personally limiting conditions and countering threats to psychosocial well-being associated with exposure to work stressors, such as situational constraints.

Hypothesis 3 Situational constraints will relate positively to both task crafting (H3a) and cognitive crafting (H3b).

2.4 *Psychological Empowerment*

Job crafting offers a self-starting way to increase intrinsic work motivation by making one's job more personally meaningful, satisfactory, and enjoyable, or less distressful, frustrating, and boring (Harju et al. 2016; Rudolph et al. 2017; Tims et al. 2016). To address these self-motivational effects, we draw on the concept of psychological empowerment. Initially, Conger and Kanungo (1988) equated empowerment with self-efficacy, that is, beliefs in one's ability to succeed in specific situations (Bandura 1997; Chang et al. 2012; Weber and Jeppesen 2017). Later, Thomas and Velthouse (1990) redefined psychological empowerment as a comprehensive motivational construct, synthesizing central aspects of the work experience by including cognitions of (a) self-determination, (b) impact, (c) meaning, and (d) competence. Spreitzer's (1995) widely used multidimensional scale was developed to operationalize this conceptualization. Empowerment seems particularly suited to capture unique effects of the two types of job crafting: Changing task versus cognitive job boundaries should have different implications for self-determination and impact versus meaning and competence (Spreitzer et al. 1997). The former two dimensions are control-oriented cognitions concerning the work environment and more likely to be influenced by task crafting, while the latter reflect person-oriented fit perceptions more pertinent to cognitive crafting. Self-determination and impact refer to two aspects of workplace control—task autonomy and participation opportunities (Sauter et al. 1989; Spector 1986). Drawing on the motivational theory by Ryan and Deci (2000) and Hackman and Oldham's (1975) job characteristics model, self-determination describes the degree of autonomy and discretion in the fulfillment of job tasks, including decision authority over work goals, methods, and timing or sequencing (Hornung et al. 2010; Jackson et al. 1993; Langfred and Moya 2004). Referring to broader notions of collective control, impact captures influence in the larger work environment, such as involvement and participation in administrative processes and decisions concerning the work unit or department (Cotton et al. 1988; Delbridge and Whitfield 2001; Weber et al. 2009). Although self-determination and impact refer to perceptions rather than objective working conditions, both constructs are condition-focused and control-oriented. In contrast, meaning and competence are more self-focused or person-oriented, referring to evaluations of fit between the jobs and own values and skill sets (Cable and DeRue 2002). Meaning captures the subjective importance of one's work, based on correspondence between characteristics of the job role and personal beliefs, values, and orientations (e.g., prosocial motivation; Grant 2007; Tims et al. 2016). Fulfilling a basic need to feel knowledgeable, skilled, and proficient in fulfilling environmental expectations, competence refers to self-efficacy beliefs regarding the ability to perform one's work role (Bandura 1997; Ryan and Deci 2000). The distinction of

control-oriented versus person-oriented dimensions corresponds with differences between task and cognitive job crafting. Task crafting is outward-directed or situation-focused, changing manifest conditions in the work environment by exercising control. Cognitive crafting is inward-directed or self-focused, targeting psychological processes and states, such as thoughts, beliefs, or attitudes regarding one's job and occupational identity. Accordingly, the fourth hypothesis assumes that task crafting primarily relates to condition-focused and control-oriented dimensions, whereas cognitive crafting is more proximal to person-oriented and fit-focused empowerment aspects.

Hypothesis 4 Task crafting will relate more positively to the empowerment dimensions of self-determination (H4a) and impact (H4b) than cognitive crafting; conversely, cognitive crafting will relate more positively to meaning (H4c) and competence (H4d) than task crafting.

3 Methods

3.1 Sample

Data were gathered in a large telecommunication company in China. Out of more than 20,000 employees, a stratified sample of 1500 eligible participants was selected by the human resources department as a cross section of ranks (rank and file, line supervisors, and managers) and functions (technical, administrative, and service), including demographic criteria (gender, age, and organizational tenure). Invitations to participate were distributed via the organization's e-mail system along with letters of informed consent and access codes to an internal website. The survey was completed during work hours and required complete data input. Altogether $N = 1196$ employees participated (response rate: 79.7%); 554 men (46.3%) and 642 women (53.7%); mean age and organizational tenure were 32.78 ($SD = 6.83$) and 7.08 ($SD = 4.33$) years. Education ranged from middle school (11; 0.9%), high school (139; 11.6%), associate degree (507; 42.4%), and bachelor's degree (499; 41.7%), to a master's degree (40; 3.3%).

3.2 Measures

The survey was administered in Chinese language. With the exception of the job crafting scale, measures were based on established instruments, preferably using validated Chinese versions (Huang and Iun 2006; Huang et al. 2010). For antecedents, shortened 3-item scales were constructed based on the highest loading or most applicable items. Item translations involved an iterative process by researchers fluent in both Chinese and English. All measures used a 7-point response format

Table 1 Developed items to measure task and cognitive job crafting

Task crafting ($\alpha = 0.76$)	Cognitive crafting ($\alpha = 0.81$)
Altered the scope or nature of work tasks to make better use of your personal strengths and skills [0.76]	Tried thinking about negative aspects of your job in terms of challenges or learning opportunities [0.79]
Altered the composition of work tasks; e.g., by devoting extra time and effort to tasks you are passionate about [0.70]	Developed new ways of thinking about your work to make your job more meaningful and enjoyable [0.72]
Changed the number of tasks associated with your job, e.g., by taking over additional tasks and/or dropping unproductive or unnecessary ones [0.63]	Tried viewing your job duties as an integrated work role rather than a collection of separate tasks [0.68]
Crafted personally desirable changes to the scope or nature of work tasks associated with your job [0.59]	Changed the way you think about certain tasks to make it easier to do a good job [0.67]

Source: Table compiled by the author

Note: Values in brackets are the standardized factor loadings of items on the respective latent constructs of task and cognitive job crafting in the confirmatory measurement model (CFA1a)

(1 = “strongly disagree” to 7 = “strongly agree”). Cronbach’s α reliabilities and confirmatory factor analyses are reported in the results section.

3.2.1 Task and Cognitive Job Crafting

As none of the existing measures were found to be suitable for the intended purpose, scales on task and cognitive job crafting were developed specifically for this study. Task crafting was operationalized as situation-directed (external) activities, changing number, scope, or type of job tasks (e.g., taking on additional duties or dropping unproductive ones). Cognitive crafting captures self-directed (internal) efforts to influence work-related attitudes, beliefs, and perceptions (e.g., developing new ways of thinking about one’s work to make it more meaningful). Initially, seven items per dimension were formulated and revised in group discussions among researchers, small-sample pretesting, and focus groups. Based on preliminary analyses, four items each for task ($\alpha = 0.76$) and cognitive crafting ($\alpha = 0.81$) were retained. These items are displayed in full in Table 1.

3.2.2 Growth Need Strength

Individual growth need strength, the desire to obtain satisfaction from achievement, mastery, and skill development, was assessed with three items adapted from the Job Diagnostic Survey by Hackman and Oldham (1975): (a) “I would like to have opportunities to be creative and imaginative in my work;” (b) “It is important to me to have opportunities for personal growth and development in my job;” (c) “I

enjoy stimulating and challenging work.” An internal consistency of $\alpha = 0.86$ indicated reliable measurement.

3.2.3 Intellectual Stimulation

The three highest loading items of the 5-item intellectual stimulation subdimension of the Transformational Leadership Scale by Podsakoff et al. (1990) measured the extent to which employees felt encouraged to challenge assumptions about their work and come up with new ideas on how to perform their jobs. Respondents rated their direct supervisor based on the following statements: (a) “Has ideas that have challenged me to reexamine some of the basic assumptions about my work;” (b) “Asks questions that prompt me to think;” (c) “Has stimulated me to rethink the way I do things.” Internal consistency was high at $\alpha = 0.95$.

3.2.4 Situational Constraints

Based on Peters and O’Connor (1980) and O’Connor et al. (1982), Spector and colleagues developed the Situational Constraints Scale, comprising 13 items on conditions that interfere with employees’ capacity to fulfill their job roles (Chen and Spector 1992; Fox and Spector 1999; Spector and Jex 1998). The three items with the highest reported incidence in Fox and Spector’s (1999) study were selected: (a) “Lack of time frequently keeps me from getting my job done;” (b) “I am frequently given unscheduled activities to work on which keep me from getting my job done;” (c) “Too much ‘red tape’ frequently interferes with getting my work done.” Internal consistency was $\alpha = 0.86$.

3.2.5 Psychological Empowerment

Empowerment was assessed with Spreitzer’s (1995) scale, operationalizing Thomas and Velthouse’s (1990) taxonomy with three items per dimension. Self-determination: (a) “I have significant autonomy in determining how I do my job;” (b) “I can decide on my own how to go about doing my own work;” (c) “I have considerable opportunity for independence and freedom in how I do my job” ($\alpha = 0.80$). Meaning: “The work I do is meaningful to me;” (b) “My job activities are personally meaningful to me;” (c) “The work that I do is important to me” ($\alpha = 0.79$). Competence: (a) “I am confident about my ability to do my job;” (b) “I have mastered the skills necessary for my job;” (c) “I am self-assured about my capabilities to perform my work activities” ($\alpha = 0.85$). Impact: (a) “My impact on what happens in my department is large;” (b) “I have a great deal of control over what happens in my department;” (c) “I have significant influence over what happens in my department” ($\alpha = 0.87$). The internal consistency across all 12 items was $\alpha = 0.86$.

3.2.6 Control Variables

Included as control variables were gender, age, organizational tenure, and education. Gender was assessed with a dichotomous item (0 = male; 1 = female). Age and organizational tenure were entered in years. Education was measured with five categories (1 = middle school; 2 = high school; 3 = associate degree; 4 = bachelor's degree; and 5 = master's degree) and provided a proxy for hierarchical status or rank.

3.3 Analyses

Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) were computed with the software AMOS 23.0 (Brown 2006; Byrne 2001). Model evaluations used conventional goodness-of-fit indices and cutoff criteria. As the absolute chi-square (χ^2) discrepancy is considered limitedly meaningful due to influences of sample size, we focused on the relative chi-square (χ^2/df), for which values of up to 5.00 were deemed acceptable. Further, Incremental Fit Index (IFI), Tucker Lewis Index (TLI), and Comparative Fit Index (CFI) should be at least 0.90. The Root Mean Square Error of Approximation (RMSEA) should be lower than 0.08 and values below 0.05 indicate close fit. The 90% confidence interval (CI) of RMSEA should be narrow with an upper bound not exceeding 0.08. Significance tests that the population RMSEA is above 0.05 should be nonsignificant. Lastly, Hoelter's Critical N (CN), which is the theoretical sample size that would yield a nonsignificant chi-square ($p > 0.05$), should be 200 at minimum.

4 Results

4.1 Measurement Models

Prior to structural analyses, factorial validity was established in CFA models. Goodness-of-fit indices are provided in Table 2. Following conventions, general 1-factor models served as a baseline for model comparisons (Podsakoff et al. 2003). A 2-factor model of task and cognitive crafting displayed good fit (CFA1a). Factor loadings ranged from 0.59 to 0.76 for task and 0.67–0.79 for cognitive crafting (Table 1). A single-factor solution was unacceptable (CFA1b). For antecedents, a 3-factor model fit the data well (CFA2a), outperforming a general factor (CFA2b). Psychological empowerment was adequately represented by four factors (CFA3a), but neither by a single factor (CFA3b) nor by a 2-factor model combining control-oriented and person-oriented items (CFA3c). Following Spreitzer (1995), a single-factor second-order model (CFA3d) was also tested, but yielded only marginally

Table 2 Fit Indices of measurement and structural models

Model	χ^2	df	χ^2/df	IFI	TLI	CFI	RMSEA [CI]	CN
CFA1a: Job crafting (2 factors)	80.98**	19	4.26	0.98	0.97	0.98	0.052 [0.041–0.064]	445
CFA1b: Job crafting (1 factor)	670.12**	20	33.51	0.78	0.69	0.78	0.165** [0.154–0.176]	57
CFA2a: Antecedents (3 factors)	85.98**	24	3.58	0.99	0.99	0.99	0.046 [0.036–0.057]	507
CFA2b: Antecedents (1 factor)	2546.05**	27	94.30	0.65	0.54	0.65	0.279** [0.270–0.189]	19
CFA3a: Empowerment (4 factors)	215.52**	48	4.49	0.97	0.96	0.97	0.054 [0.047–0.061]	362
CFA3b: Empowerment (1 factor)	2252.55**	54	41.71	0.65	0.57	0.65	0.185** [0.178–0.191]	39
CFA3c: Empowerment (2 factors)	1290.55**	53	24.35	0.80	0.75	0.80	0.140** [0.133–0.146]	66
CFA3d: Empowerment (4 factors, 1 second-order)	326.94**	50	6.54	0.96	0.94	0.96	0.068** [0.061–0.075]	247
CFA3e: Empowerment (4 factors, 2 second-order)	216.55**	49	4.42	0.97	0.96	0.97	0.053** [0.046–0.061]	367
CFA4a: All constructs (9 factors)	808.49**	341	2.37	0.97	0.97	0.97	0.034 [0.031–0.037]	570
CFA4b: All constructs (1 factor)	9969.41**	377	26.44	0.45	0.41	0.45	0.146** [0.143–0.148]	51
SEM1: Complete mediation model	1367.99**	354	3.86	0.94	0.93	0.94	0.049 [0.046–0.052]	349
SEM2: Partial mediation model	962.90**	342	2.82	0.97	0.96	0.96	0.039 [0.036–0.042]	480
SEM3: Partial mediation model including controls	1166.32**	422	2.76	0.96	0.95	0.96	0.038 [0.036–0.041]	483

Source: Table compiled by the author

Note: $N = 1196$; $\chi^2 =$ chi-square; $df =$ degrees of freedom; IFI = Incremental Fit Index; TLI = Tucker Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; CI = 90% Confidence Interval; CN = Hoelter's Critical N
 ** $p < 0.01$, * $p < 0.05$

acceptable fit. Superior fit resulted from two second-order factors subsuming control-oriented, respectively, person-oriented first-order constructs (CFA3e), thus confirming the suggested substructure of empowerment. Finally, all 29 items were combined to a complete 9-factor CFA with good fit (CFA4a), as opposed to 1-factor model (CFA4b). Scale-level descriptive statistics and correlations are provided in Table 3.

4.2 Structural Models

The final CFA provided the basis for SEM—growth need strength, intellectual stimulation, and situational constraints were modeled as independent variables; self-determination, impact, meaning, and competence as outcomes; correlated residual terms reflected the higher order construct of empowerment. Task and cognitive job crafting acted as mediators. The partial mediation model (SEM1) includes direct effects of antecedents on outcomes, accounting for influences of individual differences, leadership, and work context on empowerment. The complete mediation model (SEM2) assumes that outcomes are affected only by job crafting. While both were acceptable (Table 3), the partial mediation model incorporates more realistic assumptions, showing superior fit and clearer results (see Fig. 2). In SEM1, Hypothesis 1 was confirmed—individual growth need strength related positively to task (H1a: $\beta = 0.32$, $p < 0.01$) and cognitive crafting (H1b: $\beta = 0.40$, $p < 0.01$). Supporting Hypothesis 2, intellectual stimulation was associated with task-directed (H2a: $\beta = 0.11$, $p < 0.05$) and cognitive modifications (H2b: $\beta = 0.12$, $p < 0.01$). Providing partial support for Hypothesis 3, organizational constraints were related positively to task (H3a: $\beta = 0.14$, $p < 0.01$), but not to cognitive crafting (H3b: $\beta = 0.06$, ns). Effects on empowerment resembled a differential pattern. Task crafting was related positively to self-determination (H4a: $\beta = 0.14$, $p < 0.01$) and impact (H4b: $\beta = 0.18$, $p < 0.01$), but not meaning ($\beta = -0.02$, ns) or competence ($\beta = -0.06$, ns). Conversely, cognitive crafting positively affected meaning (H4c: $\beta = 0.22$, $p < 0.01$) and competence (H4d: $\beta = 0.32$, $p < 0.01$), but not self-determination ($\beta = 0.05$, ns) or impact ($\beta = 0.03$, ns). Additionally, growth need strength showed positive direct effects on empowerment dimensions (self-determination: $\beta = 0.41$, $p < 0.01$; impact: $\beta = 0.41$, $p < 0.01$; meaning: $\beta = 0.41$, $p < 0.01$; competence: $\beta = 0.20$, $p < 0.01$). Intellectual stimulation was positively and organizational constraints negatively associated with self-determination ($\beta = 0.11$, $p < 0.01$; $\beta = -0.07$, $p < 0.05$) and meaning ($\beta = 0.17$, $p < 0.01$; $\beta = -0.13$, $p < 0.01$), but neither affected impact ($\beta = -0.01$, ns; $\beta = 0.04$, ns) nor competence ($\beta = -0.01$, ns; $\beta = -0.01$, ns). For more rigorous testing, paths of cognitive and task crafting on each of the four empowerment dimensions were successively constrained equal. For impact (H4b: $\Delta\chi^2(1) = 4.14$, $p < 0.05$), meaning (H4c: $\Delta\chi^2(1) = 21.47$, $p < 0.01$), and competence (H4d: $\Delta\chi^2(1) = 35.21$, $p < 0.01$), model chi-square increased, indicating substantial differences. For self-determination, the difference was not large enough to affect

Table 3 Descriptive statistics and correlations

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Growth need strength	4.88	1.16	(0.86)								
2. Intellectual stimulation	5.05	1.22	0.54**	(0.95)							
3. Situational constraints	4.24	1.30	-0.18**	-0.22**	(0.86)						
4. Task crafting	4.45	1.74	0.27**	0.22**	0.04	(0.76)					
5. Cognitive crafting	5.57	1.44	0.36**	0.31**	-0.06	0.43**	(0.81)				
6. Self-determination	4.83	1.25	0.45**	0.36**	-0.15**	0.26**	0.28**	(0.80)			
7. Impact	4.10	1.39	0.41**	0.26**	-0.05	0.29**	0.26**	0.58**	(0.87)		
8. Meaning	5.51	1.03	0.53**	0.45**	-0.23**	0.20**	0.37**	0.46**	0.43**	(0.79)	
9. Competence	5.96	0.81	0.25**	0.19**	-0.06*	0.13**	0.32**	0.27**	0.23**	0.42**	(0.75)

Note: Values in parentheses are Cronbach's alpha reliability coefficients

N = 1196; *M* = mean, *SD* = standard deviation

***p* < 0.01, **p* < 0.05

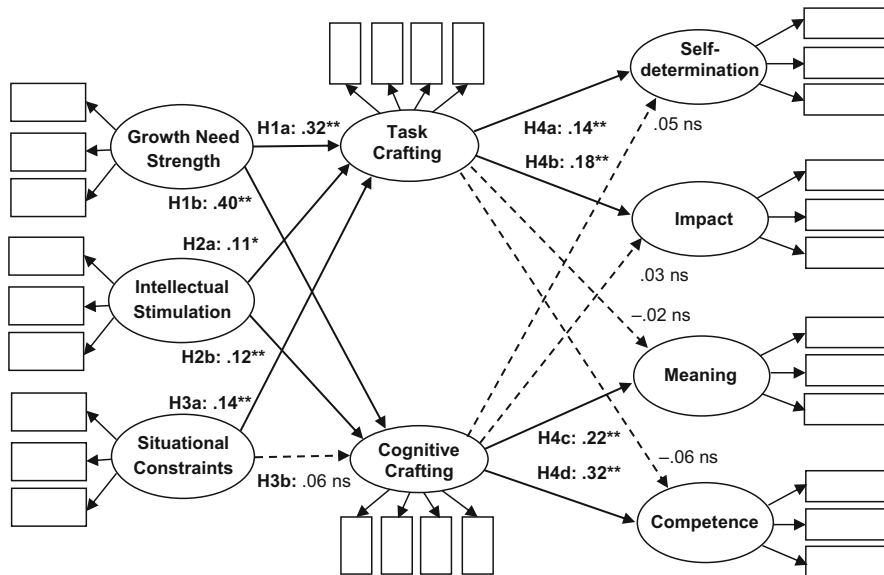


Fig. 2 Empirical model of task and cognitive crafting (Source: Table compiled by the author. Note: $N = 1196$; displayed values are standardized path coefficients (β -weights) for the partial mediation model (SEM2); not shown for the sake of clarity are correlations among independent and outcome variables as well as direct effects of antecedents on outcomes; ** $p < 0.01$, * $p < 0.05$)

model fit (H4a: $\Delta\chi^2(1) = 0.93$, ns). Hypothesis 4 was supported nonetheless, as the two primary effects of each form of crafting were significant, while the other two were not. The complete mediation model (SEM2) yielded similar results with regard to antecedents. Growth need strength and intellectual stimulation were positively associated with task (H1a: $\beta = 0.35$, $p < 0.01$; H2a: $\beta = 0.10$, $p < 0.05$) and cognitive crafting (H1b: $\beta = 0.44$, $p < 0.01$; H2b: $\beta = 0.14$, $p < 0.01$). Organizational constraints related to task (H3a: $\beta = 0.13$, $p < 0.01$) but not cognitive changes (H3b: $\beta = 0.04$, $p > 0.05$). Differential effects on outcomes were less pronounced—task crafting related to self-determination (H4a: $\beta = 0.24$, $p < 0.01$) and impact (H4b: $\beta = 0.28$, $p < 0.01$), but also had a weaker effect on meaning ($\beta = 0.08$, $p < 0.05$), and was unrelated to competence ($\beta = -0.01$, ns). Cognitive crafting showed associations with meaning (H4c: $\beta = 0.49$, $p < 0.01$) and competence (H4d: $\beta = 0.42$, $p < 0.01$), as well as with self-determination ($\beta = 0.29$, $p > 0.05$) and impact ($\beta = 0.21$, $p > 0.05$). Imposing equality constraints revealed substantial path differences for meaning (H4b: $\Delta\chi^2(1) = 49.79$, $p < 0.01$) and competence, (H4c: $\Delta\chi^2(1) = 47.42$, $p < 0.01$), but not self-determination (H4a: $\Delta\chi^2(1) = 3.00$, ns) or impact (H4b: $\Delta\chi^2(1) = 0.01$, ns). Lastly, the partial mediation model was recalculated, controlling for gender, age, tenure, and education (SEM3). Model fit, effect sizes, and significance levels were stable. Control variables showed only sporadic effects—tenure and education related to competence ($\beta = 0.11$, $p < 0.01$; $\beta = 0.07$, $p < 0.05$); education also related to self-determination ($\beta = 0.06$,

$p = 0.052$) and impact ($\beta = 0.05$, $p = 0.066$); no associations of control variables with job crafting were observed.

5 Discussion

Building on the work of Wrzesniewski and Dutton (2001), the contribution this article makes stays closer to the original conceptualization of job crafting than studies drawing on a job demands-resources framework of job crafting (Tims et al. 2012). Wrzesniewski and Dutton (2001) understand job crafting as autonomously enacted changes in work boundaries affecting tasks (number, scope, and type), cognitions (attitudes, beliefs, and perceptions), and relationships (quality and quantity of social interactions). This study only includes the first two dimensions, reflecting two central aspects of proactive behavior—changes individuals implement in the working situation and/or within themselves (Bindl and Parker 2011). Survey measures on task and cognitive crafting were developed and integrated into a model of shared individual, interpersonal, and organizational antecedents and specific psychological consequences. Noteworthy are the framing of job crafting as self-empowerment and comparative analysis of the motivational effects of situation-directed (external or physical) task crafting versus self-directed (internal or psychological) cognitive crafting. Confirming dispositional influences, growth need strength predicted task-focused and cognitive crafting. Elucidating the role of supervisors, transformational leaders facilitated both forms of crafting by intellectually stimulating employees to think and act in innovative ways (Podsakoff et al. 1990). With regard to job crafting as proactive coping, results only partly correspond to expectations. Specifically, workers appeared to use task-focused actions to overcome situational constraints, but not cognitive strategies to reframe such limiting conditions. In hindsight, this fits with the conceptualization of hindrance demands as negatively appraised task obstacles (LePine et al. 2005). Although reframing may not be effective in coping with regulation hindrances, for more ambiguous stressors, such as time pressure or work interruptions, the appraisal as either threat or challenge may be more relevant and, therefore, should not be discounted completely. The conceptualization of job crafting as a form of self-empowerment used in this study was well supported by the empirical results. Taken together, the two forms of crafting explained variance in all empowerment dimensions—above and beyond growth need strength, intellectual stimulation, and situational constraints. The control-oriented dimensions of self-determination and impact were more strongly influenced by situation-directed task crafting, whereas person-oriented dimensions of meaning and competence, based on perceived fit between job features and personal values and skills, were influenced mainly by psychological crafting. However, as more rigorous testing revealed no substantial difference with regard to self-determination, both task and cognitive modifications appear to enhance autonomy, as primary and secondary control (Rothbaum et al. 1982). Cognitive crafting should not be confused with “illusionary control,” but represents a form of sensemaking,

whereby individuals intuitively employ techniques of perspective taking, reframing, and positive self-instructions to develop their occupational identities, self-confidence, and sense of purpose at work. Thus, job crafting offers ways to improve one's work experience and intrinsic motivation via the dual pathways of tapping into underutilized situational and personal resources for enhancing workplace control and person-job fit. Associated recommendations to employees can be expressed in two popular quotes. According to the first, they should muster courage to change things that should be changed, adopt the grace to accept conditions that cannot be changed, and develop the wisdom to distinguish between the two. A variation of the former, the second recommends an attitude of "love it, change it, or leave it," advocating openness to embrace unexpected circumstances, own attempts to positively influence the environment in a proactive way, and, eventually, leaving a dysfunctional situation that defies improvements (Wilkins and Nermerich 2011; Yukl and Mahsud 2010). Unlike coercive forms of self-management based on introjected self-control and self-punishment, job crafting describes a micro-emancipatory approach to expand self-determination and influence, develop self-efficacy, and find meaning. Transformational leaders inspire employees to empower themselves to take ownership of their jobs by modifying cognitive and task boundaries. Managers should not view task crafting as deviance, but as *n* active strategy workers use to manage their intrinsic motivation, improve the quality of their working lives, and cope with obstacles to effectively fulfill their work roles.

Despite the positive implications highlighted by this study, more research on limits and negative side effects is equally needed. Job crafting may be psychologically effortful, altering intended or protective work design features; thus, the boundaries with counterproductive work behavior may be blurry and require elaboration (Marcus and Schuler 2004). The broad conceptualization of job crafting accommodates a wide range of actions with different aims and outcomes. Quantitative research needs to be cautious not to neglect its more ambiguous connotations. Illustrating this issue, empowerment dimensions of self-determination and impact resemble antipodes to powerlessness, the central component of work alienation, whereas meaning and competence find their opposite in alienated states of meaninglessness and self-estrangement (Kanungo 1992; Sarros et al. 2002). These parallels support Wrzesniewski and Dutton's (2001) theorizing that job crafting is used to reduce work alienation. This, however, likely takes different forms than in contexts supporting employee autonomy and self-actualization. Research on these "darksides" is needed for a more balanced and realistic view of the harsh reality in contemporary organizations, often characterized by job insecurity, work intensification, and social conflicts. Job crafting was first described in a Western cultural context, and most investigations were conducted in the USA or Europe. Demonstrating generalizability to the Chinese context is not trivial, as the whole notion of job crafting is influenced by Western ideals of individualism, self-actualization, and constructive deviance—as opposed to Chinese cultural values emphasizing collectivism, duty, and compliance (Hofstede and Bond 1988; Robertson and Hoffman 2000). Although both forms of crafting were widespread, employees more readily modified their own cognitions ($M = 5.57$, $SD = 1.44$), rather than the design of their

jobs ($M = 4.45$, $SD = 1.74$; $t(2390) = 17.15$, $p < 0.01$). Future studies should clarify whether this is a cultural artifact or a generalizable finding. Overall, exogenous (e.g., labor market situation, social norms) and endogenous contextual influences (e.g., organizational climate, perceived opportunities) on the use of different forms of job crafting need to be investigated more systematically.

Reliance on cross-sectional self-report data may raise concerns about common method variance and reverse causality (Podsakoff et al. 2003). However, common method bias is controversial with some experts arguing that it poses less of an issue than frequently assumed and that thoroughly validating the theoretical factor structure provides a reasonable safeguard (Conway and Lance 2010; Spector 2006). With regard to the specified causal directions, individual differences, leader behavior, and work stressors are established as independent variables, whereas empowerment is an exemplary outcome (Spreitzer et al. 1997). This does not preclude reciprocal relationships, however, as workers who feel empowered are more likely to further develop themselves and their jobs. Over time, reciprocal dynamics thus may trigger self-reinforcing gain spirals of thriving, growth, and positive adaptation (Weigl et al. 2010). On the other hand, sustained unsuccessful, frustrated, or stifled attempts to influence or effectively adapt to the work environment may incite converse developments of “learned helplessness,” characterized by progressing passivity, negative job attitudes, alienation, and depression (Martinko and Gardner 1982). Longitudinal research is needed into the dynamics of how people are affected by their work and, in turn, shape their jobs over time. Essentially, this means reviving occupational socialization as a complementary explanation to the individual differences approach of personality psychology (Frese 1982). In the present study, controlling for growth need strength on empowerment dimensions addresses individual differences as alternative explanations, but the cross-sectional “single snapshot” design limits insights into the temporal dynamics and interplay of situation-directed and self-directed changes. Further, our job crafting measure had not been previously validated and lacks a relational dimension, which is attributable to study parsimony and context. Future research should include additional items on how people shape their social relationships and interactions at work. Due to its more open operationalization and alignment with Wrzesniewski and Dutton’s (2001) theorizing, our scale provides some advantages over the widely used instrument by Tims et al. (2012). Note, however, that Slemp and Vella-Brodrick (2013), for instance, have also suggested an alternative measure, which is more proximal to the original notion of job crafting. The job demands-resources model and its extensions have provided a prolific framework for integrating research on work design, self-determination theory, conservation of resources, the challenge-hindrance distinction, and individual differences. A downside of its currently dominating role, however, is diminishing theoretical and methodological diversity. Thus, problems in the reconceptualization of job crafting according to the job demands-resources model bring to mind the proverbial warning of (not) falling for the folly that any problem looks like a nail when the only tool at hand is a hammer.

6 Conclusion

Resembling active agents or acting subjects rather than passive job recipients, individuals have been shown to employ self-regulated strategies to improve fit between their work situation and themselves. Ideally, this proactive socialization process of reciprocal determination should give rise to a stepwise or iterative “joint optimization” of person-job fit, yielding individually and organizationally desirable outcomes. Reenvisioning workers as active job crafters can enrich theorizing on important topics of organizational research, including job and work design, motivational and coping processes, and occupational well-being and health. Confirming that job crafting can either be facilitated or impeded by specific individual and contextual factors, the results of this study can be interpreted as a process model of self-empowerment, wherein employees make use of personal (individual) and social (interpersonal) resources and/or proactively respond to environmental (organizational) adversity. However, while encouraging employees to experiment with novel ways to improve the quality of their work experience can simultaneously enhance well-being and performance, instrumentalizing the construct of job crafting as a managerial “tool” to achieve “subjectivized” forms of self-imposed work intensification means compromising the construct and its positive outcomes, at least in a longer term perspective. Job crafting offers a person-centered approach to individual work redesign only when its humanistic core intent is not hijacked by the inherent performance imperatives driving contemporary work organizations. Therefore, it would be important to develop and explore more differentiated taxonomies of job crafting behavior. In addition to the content focus of crafting, these properties could be examined, for example, by drawing on the dichotomies of proactivity vs. adaptivity, approach vs. avoidance motivation, accumulation vs. conservation of resources, extrinsic vs. intrinsic job features, prosocial vs. self-interest, health-promoting vs. self-endangering, etc. Likely not all of these possible forms are equally applicable or generalizable across work contexts, but, rather, heterogeneous forms of job crafting are assumed to emerge based on the specific configuration of dominant psychological and environmental factors, and, in turn, to be associated with distinct situation-directed and self-directed effects. This study has provided some proof of concept regarding these conjectures with regard to selected individual, interpersonal, and organizational influences, and specific motivational outcomes of task and cognitive job crafting. Thus, the reported results contribute to the cumulative body of evidence that has started to anchor and embed job crafting into the nomological network of core psychological constructs in organizational research. Specifically, this refers to the important roles of individual growth needs, transformational leader behavior, and organizational constraints. To date, however, still little is known on the distinctness, complementariness, and antagonisms of job crafting, and other identified forms of proactive work and organizational behavior. For instance, while job crafting is conceptualized in terms of self-enacted or unauthorized modifications, a whole separate stream of literature on the construct of idiosyncratic deals has focused on person-specific work and

employment conditions emanating from individual bargaining processes between employees and supervisors or other organizational agents, such as human resource representatives or higher level managers. To further advance and integrate the literature, unauthorized and negotiated job changes should be examined simultaneously as potentially alternative, complementary, and/or independent ways in which employees can exercise influence and control over their work situation. Finally, the current interest in job crafting should not distract from the fact that the design of safe, healthy, and developmental work remains first and foremost the responsibility of the employer. Off-loading this task on employees, along with the often ambivalent advice to be more proactive, is bound to create structural double binds that are likely to erode or overcompensate any positive effects of job crafting in the longer term. While engaging in job crafting behaviors appears to increase employees' capacity for experiencing positive work-related states as well as for dealing with adverse situations, beneficial implications may be contingent on the provision of a critical threshold of broad-based supportive work and employment conditions, as a basis for constructive and functional person-specific individual modifications. The often rather reductionist and decontextualized nature of organizational research renders it particularly important to emphasize rather than to downplay the importance of organizational preconditions and situational requirements for facilitating functional individual work design behavior, rather than coping with adverse or alienating working conditions. Likely of particular importance for the psychology of job crafting is the organizational justice framework, management style, and socio-moral climate within the employment, human resource, or work system in the context of which crafting occurs. As such, one conclusion of this research is to reiterate calls for more employee-oriented, democratic, participatory, and just, organizational structures and procedures, including decent working conditions, autonomy-supportive and developmental work design, and humanistic management approaches—as important components to realize the promise of self-actualization at work particularly emphasized in the perspective of positive organizational scholarship.

Acknowledgement This study was supported by a Hong Kong Polytechnic University Research Grant, entitled “Self-determination and Proactive Job Changes.” I thank Xu Huang and Catherine K. Lam for data access and feedback. Earlier versions were presented at the 5th International Conference on Management, Leadership & Governance 2017 in Johannesburg, South Africa, and the 21st Annual American Association of Behavioral and Social Science Conference 2018 in Las Vegas, USA.

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Prospects of Cooperation in the Agribusiness in Russia



Ekaterina Nikolaeva

Abstract The agribusiness in Russia is one of the key spheres of the economy, and development of cooperation between agro-industrial entities is an important part of public policy. The chapter contains results of the research of the efficiency of agricultural cooperatives and other small forms of agricultural production in Russia using the data of the state statistics, and also the financial reporting of the enterprises. The analysis of the cooperative sector in the agro-industrial complex indicates a low efficiency of existing cooperatives and a downtrend in their number. It was revealed that unincorporated farms have demonstrated better efficiency, and this sector has been developing poorly in the last 5 years. The author analyzes state programs of support and stimulation of agricultural cooperation and farming and its outcome. The author points at the failures, limitations of existing programs, and offers some measures that would increase the attractiveness of cooperation in the agribusiness among small enterprises. State should eliminate or optimize institutional barriers, encourage competition in the agribusiness sectors, support existing farms and their cooperatives. Cooperatives must develop independently on the path and in those forms that are most economically beneficial and suitable for producers.

Keywords Agricultural cooperation · Farm · Efficiency · Governmental support

1 Introduction

Agriculture in Russia is developing rapidly over the past 5 years. This field of activity is much ahead of many others in terms of annual growth rates in the last few years. Thanks to a number of government measures, agricultural producers (mainly meat, vegetables, and cereals) have strengthened their market positions. However, a greater degree of development occurred among large agricultural holdings and medium-sized agricultural enterprises. At the same time, small businesses

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(farm enterprises) still remain the least developed part of the economy. Besides, the competition from major producers and the pressure of trade networks have intensified.

Small and medium business is necessary for Russian economy and must be a significant part of the economy. This is especially relevant to the agribusiness, where a significant part of agricultural products is produced within the households Rubaeva et al. (2015). It became particularly significant in our country, where the state has been facing the unsolved task of providing an acceptable standard of living in the countryside for many decades. Peasant (farm) enterprises are supposed to solve this very problem. Statistics show that every year the number of such farm enterprises has been rapidly reducing for the last 5 years Nikolaeva (2018). State support programs for small business in the field of agriculture have been operating in the country for all these years Nikolaeva and Serdukova (2018), but there have been no positive shifts in this direction. Only a limited number of farms receive support, the most active and efficient ones. Many farmers just have not enough experience, courage, or financial literacy. The villages have been devastated for many decades, the most active and enterprising inhabitants moved to the cities, and the level of education of the rural population decreased. This is the general trend in the Russian rural regions today. There are also some positive moments. The fashion for organic food and other goods has given an impetus to the development of this industry. The small agricultural enterprises account for the part of the production of eco products. The state support measures in the form of preferential credits, suretyships have positive influence here. Cooperation is one of the forms of functioning and interaction of small business in the sphere of agribusiness.

2 Literature Review

The role of cooperatives in agriculture is very significant. This is evidenced by a large number of works devoted to the cooperation. Another evidence of the high role of cooperation in the agribusiness is the positive experience of the developed countries with a high share of agriculture in GDP. These include New Zealand, Italy, Portugal, Belgium, and others (see more in Serduykova and Nikolaeva (2017)). The experience of these countries has shown that cooperation in agriculture can and should be developed, which can subsequently become the basis for the effective production in this sphere. The following works in the study of agricultural cooperation are of particular interest. A number of works have been devoted to raising the efficiency of agricultural production. Works of Tulcheev et al. (2017), Deshkovskaya (2007), and Ortmann and King (2007) are dedicated to integration and cooperation of small forms of enterprise in the agro-industrial complex. Starting with the breakthrough book by Olson (1971), a number of research give attention to the institutional aspects of the organizational structure of cooperatives. In that field of research can be highlighted Cook (1995) and Nilsson (1998).

Aref (2011) noted the problems of the development of cooperatives in Iran, including the difficulty of obtaining financing, insufficient legal support, as well as problems with marketing. Syden and Lee (2016) have considered opportunities for introducing positive Korean experience in the development of agricultural cooperatives in Cambodia. They consider an important aspect of the development of cooperatives to be a rigid state control of their development, including the protection of the rights of cooperatives. Innocent and Adefila (2014) analyze the possibilities of using cooperatives as a means of reducing poverty by the example of the Nigerian economy. To similar conclusions came Birchall and Simmons (2013) and Anang et al. (2017). On the other hand, in Europe, cooperatives in agricultural production took a strong position for a long time, and this is indicated by Levi and Davis (2008) and Popescu (2014).

3 Methodology and Data

The study is based on the data of economic activity of 3398 enterprises operating in the agricultural sector, including 906 agricultural production cooperatives and 2492 peasant (farm) enterprises. All data were received from Database with restricted access FIRA PRO (2018). A comparative analysis of the effectiveness of these two organizational and legal forms of conducting business, common in the field of agriculture, is carried out. The study is conducted both on the selection as a whole and in the context of the industry groups, among which are: growing grain and legume crops, vegetables and root crops, growing fruit trees and shrubs, other plant growing, meat and dairy farming. The largest share in the number of enterprises presented in the selection belongs to the “growing grain and legume crops” group (83% of cooperatives and 36% of peasant farms); peasant (farm) enterprises from the “dairy farming” group are also widely represented in the selection—28% (only about 2% of the total number of the selection are cooperatives here). The data of the indicator “gross profitability” for all enterprises from 2013 to 2016 have been analyzed.

4 Results

The state considers the development of agricultural cooperation as one of the measures to increase the efficiency of production in the agribusiness. Cooperation is one of the most effective mechanisms of interaction between economic entities Pletnev (2016). It is the way of interaction that always and everywhere made it possible to solve complex problems, to overcome the most acute problems. Poverty alleviation in the countryside is one of them.

Agricultural cooperatives in Russia can be of different types: agricultural production cooperatives, agricultural consumer cooperatives (which vary in functions—

sales, processing, serving, and supplying), and credit consumer cooperatives. The latter two types are noncommercial enterprises and are created to achieve a specific goal and obtain benefits—saving on resources, borrowing of the loans, and so on. About 40% of all existing cooperatives in our country are noncommercial. Most of the state support measures for cooperation are aimed specifically at the development of consumer cooperatives. These include state and regional programs for granting credit benefits and subsidizing. However, despite this, the number of such cooperatives is also decreasing annually (especially credit ones).

According to the scientific research commissioned by The Financial Academy under the President of Russia, the existing cooperatives in Russia today are mostly either the heirs of Soviet collective and state farms, or forcibly created enterprises with the “support” of regional authorities Nikulin et al. (2016). Both types of cooperatives do not allow solving fully the problems facing farmers, cannot “lobbying” the interests of its members in the market, in financial and credit institutions. The functioning cooperatives are somewhat similar to the Soviet consumer societies, integrating farms into a network of consumer cooperation. The agricultural cooperative must undergo significant changes to become an effective tool for interaction of small forms of management.

The current situation indicates that the existing approach to stimulation of the cooperative movement in the country’s agriculture requires rethinking. Any expansionary activities in such a sphere as agriculture (vulnerable by the foreign producers as the consequences of accession to the WTO, weak from the point of view of the economic conjuncture—price disparity, constant energy price increase) are seen and should be implemented with the initiative of the state. The experience of the developed countries, where the cooperation in agriculture is highly developed, mostly indicates the leading role of the state at the initial stage of formation of the cooperative sector.

Russia implementing State program (2012), which identifies priority areas for the development and support of agricultural producers, most of which are aimed at supporting farming in Russia. In addition, the program provides a separate group of measures—support for agricultural consumer cooperatives, in which a number of directions are being implemented. First, agricultural consumer cooperative is allowed to reimburse the part of the costs (at least 50% of the documented costs) associated with the formation of the material base of the cooperative (within 5 million rubles). Second, the state subsidizes agricultural credit consumer cooperatives in terms of replenishing the funds of mutual finance assistance (in the amount of 50% of the share contribution, but not more than 100,000 rubles for each member of the cooperative). Third, it is the reimbursement of expenses to consumer cooperatives (within 50%) for payment of membership fee to the inspection unions of agricultural cooperatives. In addition to the activities implemented within the state program, there is also support for cooperatives at the level of the federal subjects. For example, in one of the big industrial regions—Chelyabinsk region, there are a number of regional government resolutions that provide support grants for agricultural consumer cooperatives for the development of the material and technical base (Resolution GChR 2017a), subsidizing part of the costs of consumer cooperatives for selling

milk, collecting and delivering milk for processing and marketing (Resolution GChR 2017b).

A number of state programs for supporting cooperation are being implemented through JSC “Corporation MSP” (the state corporation for the development of small and medium business in Russia). The corporation provides the agricultural cooperatives with two types of guarantees: a direct guarantee issued jointly with the guarantee of regional guarantee organizations (co-guarantees) for agricultural consumer and production cooperatives, a direct guarantee for the development of cooperation. We should note that the assistance for agricultural cooperation has been singled out as a separate priority group of measures among the areas of support of MSP Corporation. The cooperative can also receive financial support in the form of crediting from JSC “MSP Bank” (JSC Russian Bank for Small and Medium Enterprises Support). Despite all the abovementioned measures, official statistics indicate that the development of agricultural cooperation in Russia is weak (and according to more pessimistic estimates does not happen at all). The dynamics of the number of agricultural cooperatives indicates a decrease in their quantity in the last 5 years. Since 2015, the number of agricultural consumer credit cooperatives has sharply reduced, and there has been a steady negative trend in the number of agricultural production cooperatives (of various types). As for the efficiency indicators of cooperatives in Russia, they remain very low in whole.

As a result of the analysis of cooperative’s and farm’s efficiency, we identified two important tendencies. First, since 2014, there has been a clear negative tendency in terms of the average gross profitability of both agricultural production cooperatives and peasant (farm) enterprises. This really reflects the changes taking place in the agribusiness—with the growth of income and efficiency of large agricultural enterprises, there is actually the extinction of small business and as a consequence a significant decline in the standard of living in the countryside and in small towns. According to the official state statistics, most of the agribusiness sectors have experienced an unprecedented rise in the past 3–4 years and are ahead of most areas of the Russian economy in terms of growth rates (reference). Second, the gross profitability of peasant (farm) enterprises considerably exceeds the same indicator in the agricultural production cooperatives in all studied periods. Figure 1 shows that the difference in the values of profitability of these two types of enterprise in 2013, 2015, and 2016 is more than two times. At the same time, starting from 2014, the gross profitability of cooperatives began to fall sharply, significantly exceeding the rate of decline in the effectiveness of peasant (farm) enterprises.

Similar dynamics is noted in industrial groups of the enterprises. The most significant differences are obtained in the groups “growing grain and legume crops,” “other plant growing,” and “dairy farming” (these selections include the main part of the studied subjects—94% of cooperatives and 73% of peasant farms).

The situation in the group “growing grain and legume crops” is the most similar to the general one (Fig. 2). The average gross profitability of peasant (farm) enterprises in all periods is much higher than that of cooperatives. And here we also see an annual decline in the efficiency of the agricultural production. At the same time, general statistics on grain production in Russia show an unprecedentedly

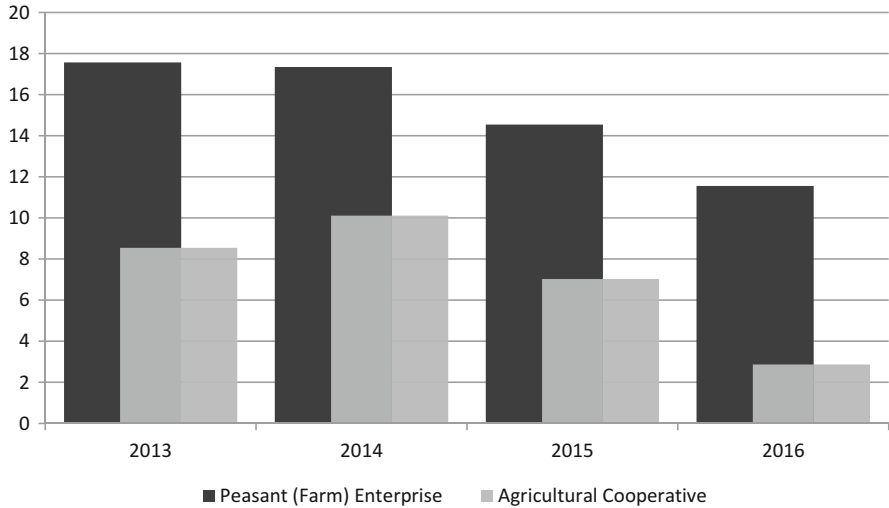


Fig. 1 Comparative dynamics of the average gross profitability of peasant (farm) enterprises and agricultural production cooperatives (Source: Calculated by the authors on the basis of data FIRA PRO (2018))

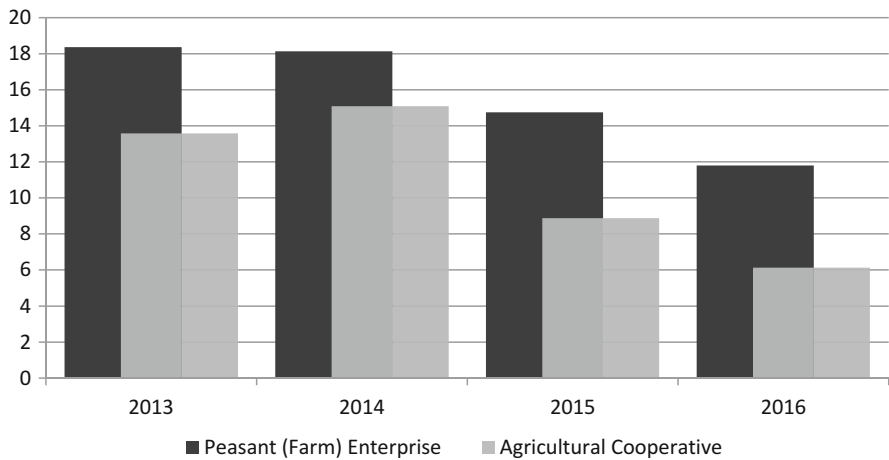


Fig. 2 Average gross profitability of small forms of agricultural production in the field “growing grain and legume crops” in Russia (Source: Calculated by the authors on the basis of data FIRA PRO (2018))

high growth in grain production from 2012 to 2016 (from 70.9 to 120.7 million tons). According to experts, this was achieved with the help of a high level of state support in the last 5 years. However, the trends of recent years have been negatively affecting small agricultural business.

The similar situation in terms of profitability is seen in 2013–2016 in the field of “dairy farming.” The average gross profitability of peasant (farm) enterprises has decreased from 13.6 to 6.3%, at production cooperatives from 5.3 to –1.5%. According to the given calculations, the profitability of peasant (farm) enterprises is more than two times higher than the profitability of cooperatives. The hypothesis of low profitability of cooperatives is also confirmed in the analysis of the “other plant growing” sector, where the positions of both farmers and cooperative enterprises deteriorated significantly from 2015 to 2016. Profitability of peasant (farm) enterprises has decreased from 15.8 to 12.5%, and at cooperatives from 10.8 to 2.2%. All the obtained results are significant at a 5% level.

The conducted research revealed a decrease in efficiency of small forms of agribusiness in Russia in the last 4 years. In addition, we have received multiple proofs that cooperative manufacturing enterprises are inefficient in the agricultural sector, and their situation is deteriorating year by year, and the number is decreasing. The same is true for peasant (farm) enterprises. And this again demonstrates the low effectiveness of state support measures for small agricultural enterprises.

The management of cooperation development in Russia is inefficient. The first reason of this is a low level of awareness in the countryside. If we are talking about farming, then this is primarily the rural population. Today, even the population of regional centers is isolated from large cities, where the advisory centers for farming and agricultural cooperation are located. The rural population often does not have any possibility to reach these centers and receive competent, qualified information support. Second, the very perception of cooperation in Russia has an extremely negative connotation. Since many of the existing cooperatives are heirs of Soviet collective and state farms, the attitude of the population toward them is historically ambiguous. This is another reason why the work of the public information advisory centers should be more active and targeted. Third, the reason for the slow development of cooperation and farming is the low level of financial literacy among the rural population. The rural population is distrustful of the financial sector, while most of the support measures for both farming and cooperation relate to bank lending. Here we can also talk about a low level of literacy in the field of agriculture, which hinders the search for new, more effective forms of management. The state bodies should revise some of its elements when forming a program of support and stimulation of agricultural cooperation. First, it concerns the ways of distributing information about the directions of state support to the specific “consumers” of these services. Second, the cooperatives themselves must significantly change their image and internal structures that shall meet the current requirements of the diverse markets of agricultural products. The Soviet model of cooperation has already discredited itself to a certain extent. Therefore, we should probably turn here to the experience of some Western countries, where the cooperative sector in agriculture has become an important link in the economy as a whole; it has allowed to strengthen farming and provide full domestic production of some types of agricultural products.

A good alternative to cooperatives in the sphere of agribusiness is network-type interaction, directed to coproduction (within horizontal and vertical links) or consumption (sharing). It means such a way of organizing links between economic

entities, in which enterprises establish long-term and rather stable ties with their business partners while maintaining complete independence (economic, decision-making, etc.). The participants of the network often provide so much-needed support, which can hardly be expected by the enterprise in a difficult situation from the banks, state structures, and funds. This can be both financial and nonfinancial assistance, for example, deferment of payment, transfer of a contract, delivery of resources on credit or on prepayment terms. Network communication can be quite strong and long term, because it is dictated by economic need. In addition, these forms of interaction are quite effective and in demand in the spheres of consumer cooperation and collaborative consumption. Today, only a rare farm can afford to buy the agricultural machinery. First, it is expensive, and second, economically impractical due to the small size of the farms themselves. Modern agricultural machinery is highly productive and may be involved in the work of many small farms. Moreover, the efficiency of buying such equipment will grow in proportion to the number of farms using it.

5 Conclusions

Today, the Russian agro-industrial complex faces many questions regarding the development of cooperation. How should the cooperative be organized in order to meet modern realities? Who should take over the functions of the “driver”? How can the rural population be interested in cooperation with other small entities? What strategy should the state adhere to in this matter—stimulating, observant or active and creative? Today there is no yet clear understanding in which direction cooperation should be developed neither on the part of the authorities, nor on the part of small agricultural enterprises in Russia. At the same time there is an understanding that this way of managing can give small farmers a “breath of fresh air” and increase their effectiveness. In our opinion, the leadership of the country should reconsider here the existing tools for supporting rural cooperation and, starting from the beginning (popularization, informing the population) to build gradually a model of effective cooperation within agricultural cooperatives, using the successful experience of some Russian regions and Western countries.

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Relational Capital and an Enterprise Crisis in the Light of Expert Opinion Survey



Anna Walecka

Abstract The chapter discusses the importance of relational capital and its impact on an enterprise crisis. The author believes that the possible occurrence of crisis phenomena in an enterprise may be a consequence of incorrectly built relational capital with various groups of stakeholders. Relational capital can also play an important role in crisis intervention measures. The chapter presents the results of expert opinion survey conducted among ten business practitioners—specialists in the field of formation of relational capital in enterprises and crisis management. The survey indicates that relational capital may be a crisis-generating factor, nevertheless it is not the most important one. The situation is different, however, when a crisis already occurs within an organization. Then, according to the surveyed experts, relational capital seems to be a critical factor that allows a given company to overcome the crisis because relational capital is people and without people there is no organization.

Keywords Relational capital of enterprises · Enterprise crisis · Company's relations with the environment

1 Introduction

The importance of relational capital in the functioning of modern organizations is seen in numerous scientific publications (e.g., Nag et al. 2007; Bamford et al. 2003; Ulrich 1998; Nahapiet and Ghosal 1998; Edvinsson and Malone 1997; Hagedahl 2010; Łobos 2005; Perechuda and Chomiak-Orsa 2013; Piwoni-Krzeszowska 2014). They point to the fact that organizations that want to be competitive must all the time create appropriate relations with the environment. Building an enterprise's relational capital, along with the creation of a business relationship network,

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is currently seen as a key determinant of an organization's development (Czakon 2013).

It seems, therefore, that correctly built relational capital can effectively contribute to achieving a competitive advantage by a given company. However, the question should be asked whether certain shortcomings in building relational capital might become the cause of crises emerging in an enterprise. The aim of the chapter is the presentation of the results of an expert opinion survey conducted in the group of ten business practitioners and an attempt to answer the question concerning the impact of relational capital of an enterprise on the emergence of crisis phenomena and its role in the company restructuring process carried out if a crisis occurs.

It should be noted that although the literature in the field of crisis management is replete with studies on determinants of companies' crisis resilience,¹ it rarely points out the importance of relational capital as a means of anti-crisis prevention or its role in restructuring and recovery processes. It is equally rarely pointed out that deficiencies, deficits, or dysfunctions in the area of company's relational capital may be potential crisis-creating factors and sometimes even triggers of crises situations. Against this background, the presented topic was considered as an important and attractive research subject.

2 Relational Capital and an Enterprise Crisis

The literature is not consistent in defining the phenomenon of relational capital. It is often perceived as an enterprise's relations with its customers (Saint-Onge 1996; Edvinsson and Malone 1997; Stewart 1997), sometimes this catalogue is expanded to include other stakeholder groups (i.e., relations with all identified stakeholders with whom a given organization has or wants to have relationships) (Fitzenz 2001).² For the purpose of this chapter, it is assumed that relational capital is in general understood as the sum of a given enterprise's relations with the environment (their quantity and quality), especially relationships with customers, competitors, suppliers and strategic allies, financial institutions, local government, labor market institutions, and other stakeholders (Walecka and Zelek 2017).

¹The most often determined in the literature determinants of enterprise's resilience to the crisis are: enterprise development strategy, competition strategy, resource management, organizational structure, organizational culture, business model, and leadership (Romanowska and Winch 2016, pp. 207–212) or enterprise characteristics: enterprise size, the age of the enterprise, the legal form of the enterprise, the type of business and characteristics of the entrepreneur: gender, age, level and type of education, and awareness of the basis for managing the crisis situation (Sochoń 2017, p. 184).

As a result of the author's own research, it turned out that relational capital is also a very important factor (Walecka 2019, pp. 193–339).

²A detailed list of definitions of relational capital in an enterprise is presented, among others, in Walecka (2018, p. 162).

It seems that the creation of relational capital in enterprises through cooperation with different groups of stakeholders becomes one of the processes that reduce uncertainty of economic activities. The ability to create economic relationships and establish alliances increases a given organization's flexibility, which significantly raises its competitiveness. On the basis of the knowledge of relational capital and its impact on business development, the role of this capital in the emergence of crisis phenomena in enterprises has become a subject of considerations, along with the question of whether relational capital can be an important factor in crisis intervention measures.

3 Research Methodology

In the second half of 2017, an expert opinion survey on relational capital of enterprises was conducted at the Department of Management, Lodz University of Technology. The study was part of a more comprehensive research procedure that began with desk research.³ As a result of the conducted literature review, several research hypotheses were formulated. The presented chapter focuses only on two of those hypotheses:

H1 Incorrectly built relational capital may contribute to the emergence of crisis phenomena in enterprises.

H2 Well-built relational capital of enterprises may become a tool in restructuring and recovery processes.

In order to ensure greater reliability and accuracy of the subsequent inference, methodological triangulation was used consisting of the application of qualitative and quantitative research methods.⁴ The decision was made to conduct an expert opinion survey as the preparation for quantitative research. The stages of the conducted study and the related tasks are presented in Fig. 1. In the first stage of the study—as a result of the literature review conducted—the research problem was defined. Then, in order to learn the opinion of the experts about endogenous and exogenous determinants of an enterprise crisis, an individual questionnaire for the experts surveyed was developed. After the preparation of the individual expert questionnaire, the analyzed population was identified and the study participants were recruited. The experts in the study comprised business practitioners—

³The research procedure consisted of the following stages: literature analysis, identification of the research gap, formulation of the problem and research goal, creation of a research model, formulation of research questions and hypotheses, selection of research methods and tools, pilot studies, data analysis, conducting empirical research (expert opinion survey, conducting surveys), data analysis, inference, indication of research limitations, and reasons for further research.

⁴In this chapter, due to editorial limitations, the focus was on presenting only selected results of the expert opinion survey.

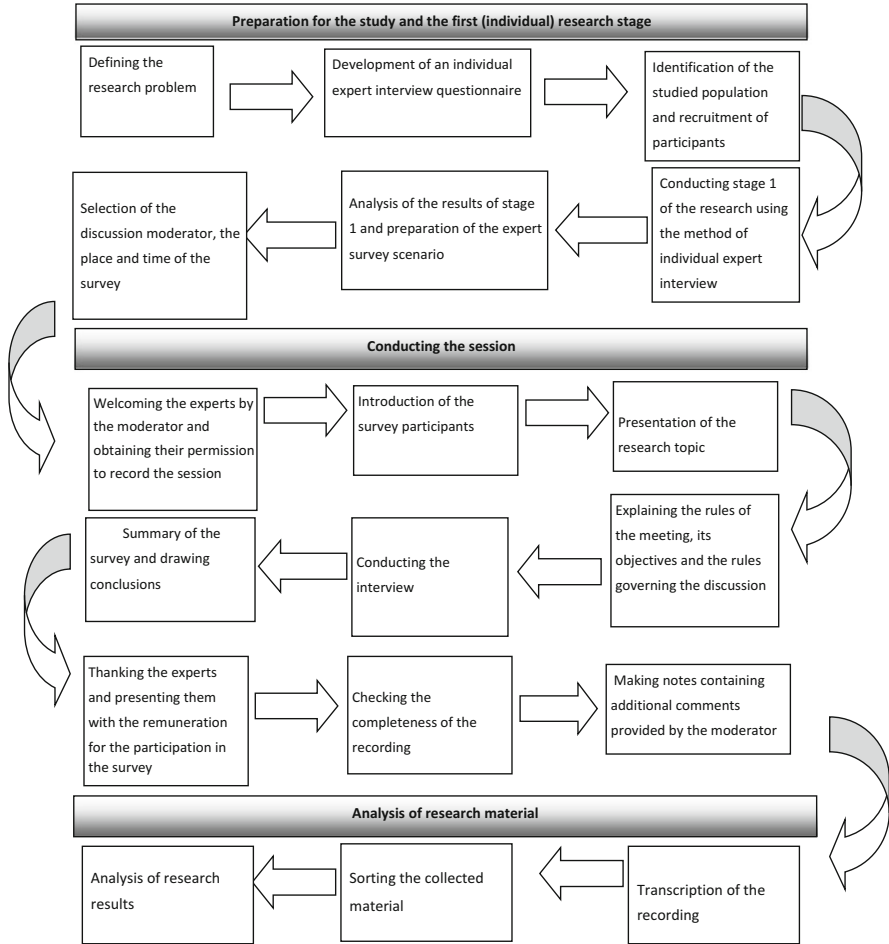


Fig. 1 The stages and tasks in the expert opinion survey [Source: The author’s own compilation based on Flaszewska and Zakrzewska-Bielawska (2015)]

specialists in the field of formation of relational capital in enterprises and crisis management. The experts were selected with the use of the snowball method.

A nonrandom technique of selection of respondents for the studied sample was used. The experts potentially selected by the author of the chapter were asked to indicate another person meeting the set criteria. The criteria included: at least several years of experience in business, including experience in a managerial position, participation in the processes of their companies’ adaptation to changing conditions (internal and external), as well as—optionally—participation in restructuring and recovery processes in their companies and participation in bankruptcy proceedings.

Fourteen potential experts were selected (ten main candidates and four additional ones). All the main candidates agreed to take part in the further part of the study.

After the selection of the experts, the first round of research, consisting of filling in an individual interview questionnaire, was carried out. It was aimed at indicating endo- and exogenous determinants of an enterprise crisis by the respondents.

The questionnaire prepared for the first round of research consisted of 72 factors that, according to the author of the chapter, constitute endogenous and exogenous determinants of an enterprise crisis. At the same time, those factors were divided from the point of view of different criteria into: macroeconomic factors, sectoral factors, internal strategic factors and internal financial factors, relational capital factors from the perspective of different stakeholder groups, relational capital factors taking into account different types of relations and the quality of these relationships. The experts were tasked with determining the strength of impact that those factors have on the functioning of enterprises on a scale from 0 to 3 (where 0 means that the factor is neutral and 3 is the most crisis-generating factor).

After the receipt of completed interview questionnaires from the surveyed experts, their results were analyzed. Based on the knowledge of the most important crisis-generating factors in the opinion of the experts, another scenario interview was developed. It consisted of four questions, this time concerning mainly the topic of relational capital in their companies and its impact on the companies' performance. The questions were as follows:

1. Could you please discuss the quality of the relationships your company has with the environment?
2. What is the impact of relational capital on your company's performance?
3. What is the impact of relational capital on the creation of your company's competitive advantage?
4. Can relational capital be a factor in the successful implementation of restructuring or recovery processes in your company? If so, how?

Thus, formulated questions were the starting point for the discussion during the focus group meeting. The questions were sent to the experts via email along with the information about the time and place of the meeting of the focus group. It was also decided that the author of the chapter would be the moderator of the discussion. The meeting of the group of experts took place in November 2017 in one of the rooms of the Faculty of Management and Production Engineering, Lodz University of Technology. The session lasted approximately 2.5 h and was registered on the audio and visual media equipment.

4 Characteristics of the Experts Surveyed

As noted earlier, the study involved ten experts—business practitioners in the field of formation of relational capital of enterprises and crisis management. A detailed description of the experts is presented in Table 1.

As shown in Table 1, all the experts have many years of experience as business practitioners, with at least 10 years of experience in managing organizations. They

Table 1 Profiles of the experts participating in the study

No. of the expert	Post occupied	Industry	Work experience in a managerial position	Brief description of professional career
1.	University chancellor	Education	20 years	More than 30 years of experience in academic work; 20 years of experience as a consultant and advisor (specializing in crisis management, recovery and restructuring procedures); a member of the Supervisory Boards of state-owned companies; the author of over 200 publications in the field of economics and management.
2.	Marketing manager	Fashion/ pharmaceuticals	13 years	An executive manager with experience in effective project management, business establishment and development, management of projects in the area of new technologies: m-commerce, e-commerce, social networks, price comparison sites, and start-up management. An expert in the field of private brands.
3.	Commercial director	Manufacturing and selling of FMCG products	14 years	More than 15 years of experience in the FMCG industry. Responsible for the work of the sales team (traditional and modern channel), as well as maintaining and developing relationships with key clients.
4.	Corporate client advisor	Banking	10 years	More than 15 years of experience in the field of corporate financing and financing investment projects. A banking advisor in the area of corporate banking. Often involved in negotiations

(continued)

Table 1 (continued)

No. of the expert	Post occupied	Industry	Work experience in a managerial position	Brief description of professional career
5.	Marketing manager	Foundry and machine industry	11 years	during clients' bankruptcy proceedings. Many years of experience in the foundry and machine industry. Since 2003, the person has worked in a manufacturing and service company that employs about 350 people. A graduate of Lodz University of Technology, Faculty of Organization and Management—specialization: Business Management.
6.	Managing partner and legal counsel	Law	11 years	Professional experience gained in public institutions, as well as national and international private institutions. Currently running his own law firm, providing consulting services in the field of law and taxes for domestic and international economic entities. In the framework of cooperation with customers, he has supervised, among others, restructuring processes in the capital group of companies operating in the clothing market, advised real estate developers, medical, pharmaceutical, and printing entities and others.
7.	Managing director	Printing	25 years	Since 1992 the co-owner and owner of numerous economic entities working in the printing industry. A member of Supervisory Boards and

(continued)

Table 1 (continued)

No. of the expert	Post occupied	Industry	Work experience in a managerial position	Brief description of professional career
				the Chairman of Board of Directors of limited liability companies and joint stock companies operating in the printing industry in the Polish market. In the years 2009–2017, the Chairman of the Board of Directors of a company in liquidation bankruptcy.
8.	Manager of a group of manufacturing plants	FMCG industry/ construction	18 years	More than 20 years of experience in building relationships with customers. Since 1995, he worked in the FMCG industry, where he was responsible for negotiating terms of cooperation and trade agreements. In 1998, he changed the industry and started working in the construction industry, gained professional experience initially as a technical and sales representative, then a plant manager, to finally become a manager of a group of manufacturing plants.
9.	Business owner/executive manager	Pharmaceuticals/ cosmetics	17 years	A manager, auditor, and internal auditor. Since 2016 involved in implementing his own investment projects as well as the development of commercial activities in the area of pharmaceutical and cosmetic industry. Extensive experience in the preparation and implementation of restructuring and modernization of joint stock companies, as well as in

(continued)

Table 1 (continued)

No. of the expert	Post occupied	Industry	Work experience in a managerial position	Brief description of professional career
				the processes of floating companies on the WSE.
10.	Business owner/President and Vice-President of the Board of Directors of several companies	Education/advisory services/motorization	10 years	Since 2007, a freelancer in the field of economic consulting, training, and coaching (finance, project management, start-ups). The Chairman of the Board of Directors, the initiator, and author of the know-how of a spin-off company established by one of Lodz state universities. The author of several dozens of investment projects, a specialist in obtaining the EU funds for his clients (more than PLN 2 bln).

Source: The author’s own compilation

have many years of experience working for themselves (conducting their own business activity) and working as the so-called hired managers. Each of the specialists has extensive experience in building relational capital of enterprises and in the management of crisis situations that have repeatedly occurred in the framework of the management process under their supervision. Each of the surveyed experts has participated in numerous processes of companies’ adaptation to changing conditions (both internal and external). Five experts (expert’s no. 1, 2, 5, 9, and 10) have participated in the processes of company restructuring and recovery, however, they have no experience in bankruptcy proceedings. Two experts (expert no. 6 and 7) have participated in the processes of company restructuring and recovery as well as bankruptcy proceedings. The experts have diverse professional (representing various sectors) and life experience, the age range of 40–50 years (except for two people, one between 30 and 40 years old and one over 50 years old) and higher education (including one person with a PhD degree and one with a Habilitated PhD degree).

5 Relational Capital as a Crisis-Generating Factor and a Recovery Factor in the Experts' Opinion

In order to learn about the importance of relational capital in the management of enterprises and its potential impact on the emergence of a crisis in an enterprise, the experts were asked to fill in an individual interview questionnaire on endogenous and exogenous determinants of an enterprise crisis. The results obtained from the experts on the subject are presented in Table 2.

As shown in Table 2, according to the surveyed experts, the main crisis-generating factors in an enterprise include: internal financial factors, internal strategic factors, relational capital factors associated with the group of internal/substantial stakeholders, sectoral factors, macroeconomic factors, relational capital factors associated with the quality of relations with a given group of stakeholders, relational capital factors associated with the group of external/contractual stakeholders, relational capital factors associated with the group of external, institutional/contextual stakeholders, and relational capital factors associated with the type of relations with different stakeholder groups (Fig. 2).

This means that, according to the surveyed experts, relational capital seems not to be a significant factor in an enterprise crisis. The most important factors are definitely internal financial and strategic factors such as loss of liquidity, a drop in sales, an increase in operating loss, the implementation of an incorrect development strategy, errors in company management, no adaptation changes in response to changes in the environment, or incorrect pricing policy.

When, however, in part 2 of the study—the panel of experts, a more in-depth analysis of factors associated with the enterprise's relational capital and its impact on the emergence of a potential crisis was conducted, relational capital proved to be an extremely important aspect for the surveyed experts. Although, during the first stage of the study, relationships were not indicated as an important crisis-generating factor, and the focus was primarily on factors related to the financial aspects of business activities, the experts agree that in the companies they represent currently or for which they worked in the past, a great deal depended on the relational capital built.

The experts confirm that in the companies that they represent a considerable amount of attention is paid to relational capital, to relationships with both the employees and external stakeholders (with one exception, expert no. 1, who acknowledged that in his company relations are established in a rather random manner. The expert believes that if a company is good and has a great product, it can succeed even without a deliberate policy of relational capital formation). In enterprises associated with the other experts, certain standards of care for external stakeholders have been introduced, especially in relation to the company's customers. It seems that the employees of the companies represented by the surveyed experts recognize the important role of external relations (expert no. 8).

In the area of internal relational capital, the enterprises often implement projects that improve the quality of the relations among their employees and projects that increase the trust between the parties, so that their employees could feel safe and

Table 2 The impact of endogenous and exogenous determinants on an enterprise crisis in the eyes of the surveyed experts

No.	Group of factors	Factors	0	1	2	3
1.	Macroeconomic factors	Crisis phenomena in the global economy		6	4	
2.		Crisis phenomena in the economies of the EU countries		1	9	
3.		Crisis phenomena in the economies of business partner countries		1	3	6
4.		Crisis phenomena in the Polish economy			5	5
5.		Tightening of banks' credit policies		2	7	1
6.		Interest rate		5	5	
7.		Exchange rates		1	6	3
8.		Inflation rate	1	6	2	1
9.		Unemployment rate		5	5	
10.		Rates of indirect taxes (VAT, excise)	1	5	2	2
11.		Rates of direct taxes (CIT, PIT)		4	4	2
12.	Sectoral factors	High susceptibility/vulnerability to recession		2	3	5
13.		Increase in competition within a given industry		2	5	3
14.		Aging of products or services (decline phase in the life cycle)	1	1	5	3
15.		Inflow of foreign capital into the industry	1	5	3	1
16.		The pressure of technological innovations in the industry		6	3	1
17.		Crisis (drop in demand/sales) in the sector/ industry			4	6
18.		Internal strategic factors	Errors in business management			5
19.	Conflicts within the company			4	5	1
20.	Claims of trade unionists			3	5	2
21.	Lack of development strategy			3	3	4
22.	Implementation of an incorrect development strategy			1	3	6
23.	High turnover in managerial positions			2	6	2
24.	Low efficiency/performance			3	3	4
25.	Incorrect pricing policy			1	4	5
26.	Lack of crisis predicting analyses			4	4	2
27.	No adaptation changes/company's reactivity to changes in the environment				6	4
28.	Lack of or inadequate response to changes in the environment			1	5	4
29.	Lack of capital or other strategic resources				7	3
30.	Staff shortages				8	2
31.	Incorrect employment structure		1	4	4	1
32.	Internal financial factors	Decline in sales prices		3	6	1
33.		Cost increase		2	5	3
34.		Drop in sales			4	6
35.		Fall in the market share	1	1	5	3

(continued)

Table 2 (continued)

No.	Group of factors	Factors	0	1	2	3
36.		Drop in income from operating activities		2	4	4
37.		Fall in operating profit		1	7	2
38.		Increase in operating loss		1	3	6
39.		Decrease in EBITDA (profit before taxes—depreciation)		2	5	3
40.		Loss of liquidity	0		1	9
41.		Increase of total debt		2	5	3
42.		Increase of long-term debt	1	2	7	
	Relational capital factors—stakeholders	<i>Group of internal/consubstantial stakeholders</i>				
43.		Lack of support/conflicts with employees		4	4	2
44.		Lack of support/incorrect relations with owners/shareholders/stakeholders		1	7	2
45.		Lack of support/incorrect relations with the management		1	6	3
		<i>Group of external/contractual stakeholders</i>				
46.		Lack/insufficient number of regular, loyal customers		2	6	2
47.		Lack of partnerships, alliances, and relations of strategic importance (capital, technological ties)	1	5	4	
48.		Lack of relations or incorrect relations in the supply chain (cooperative relations)		3	6	1
49.		Lack of competitive relations with competitors	4	5	1	
50.		Lack of relations or incorrect relations with the BEI sector	2	7	1	
		<i>Group of institutional/contextual stakeholders</i>				
51.		Lack of relations or incorrect relations with the local government and public authorities	3	5	2	
52.		Lack of relations or incorrect relations with the institutions of the labor market	3	6	1	
53.		Lack of relations or incorrect relations with financial institutions		2	6	2
54.		Lack of relations or incorrect relations with the R&D sector	2	5	3	
55.		Lack of relations with sectoral associations and associations of local business entities	3	6	1	
56.		Lack of relations with other stakeholders, what kind of stakeholders?				
57.	Relational capital factors—the type of relations	Lack of or insufficient contractual relations—based on the agreement between the partners		3	7	
58.		Lack of or insufficient capital relations—based on capital ties between partners	2	3	4	1

(continued)

Table 2 (continued)

No.	Group of factors	Factors	0	1	2	3
59.		Lack of or insufficient network relations—based on multilateral interactions between partners	3	4	2	1
60.		Lack of or insufficient cluster relations—participation in clusters	6	4		
61.		Lack of or insufficient partnership relations—based on mutual trust and joint involvement in activities conducted	2	4	4	
62.		Lack of or insufficient transactional relations in which the thinking aimed at achieving economic objectives dominates	1	4	4	1
63.		Lack of shares in companies—no close relations based on the merging of business entities	6	4		
64.		Lack of or insufficient number of licenses—formalized use of knowledge, know-how	1	8	1	
65.		Lack of or insufficient number of outsourcing relations—limiting the scope of company activities and entrusting the performance of activities in certain areas to external partners	2	7	1	
66.		Lack of or insufficient number of other relations	6	4		
67.	Relational capital factors—the quality of relations	Lack of information about the market in which the company operates derived from a given group of entities	1	2	6	1
68.		Lack of or insignificant impact of a given group of entities on the offer of products and services (under the influence of opinions/comments/suggestions, the company modifies/expands the range of products/services; introduces novelties).	1	1	7	1
69.		Lack of or insignificant impact of a given group of entities on the quality of processes in the company (under the influence of opinions/comments/suggestions, the company improves the quality of products/services/processes)		6	4	
70.		No long-term cooperation	1	5	3	1
71.		Little or no mutual trust	1	4	5	
72.		Little or no benefits of cooperation for both parties		6	4	

Source: The author’s own compilation

Note: The experts were tasked with determining the strength of impact that these factors have on the functioning of enterprises on a scale from 0 to 3 (where 0 means that the factor is neutral and 3 that it is the most crisis-generating factor)

secure in the company. In the course of the discussion, it became clear that the importance of relations varied in the companies represented by the experts. It is determined by many factors, such as the industry in which the company operates, the

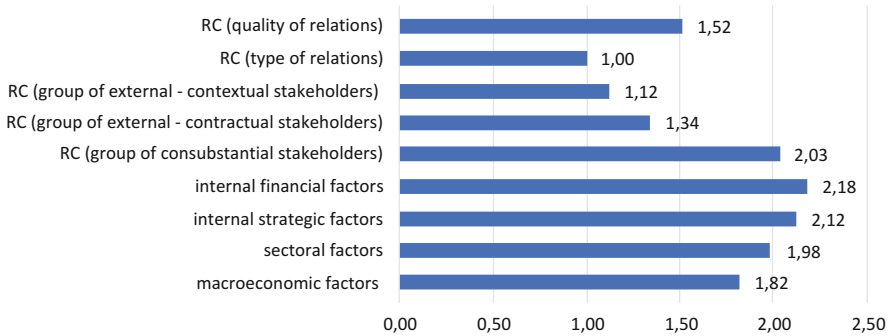


Fig. 2 Crisis-generating factors in the opinion of the surveyed experts (Source: The author's own compilation. Note: The figure shows a weighted average for individual indications)

company size and stage of its life cycle, the degree of internationalization, or the person of its leader.

Based on the knowledge concerning the essence of relational capital of enterprises and the factors that, according to the experts, significantly influence this capital, the experts were asked to provide the characteristics of stakeholders that they establish relationships with most often. It turns out that relational capital, also according to the experts, is largely perceived from the perspective of relations with stakeholders in the supply chain, mainly with customers, suppliers, and contractors. However, relational capital should be perceived much more broadly. Therefore, the experts were asked whether they deliberately create relational capital with, for example, local authorities. It turned out that exactly half of the respondents maintained such relations. Expert no. 1 pointed out a very important role of local government in the functioning of companies and cited his own example concerning relations with the local authorities. All the experts clearly agree that these relationships are very important and need to be cultivated, however, they acknowledge that they have not always paid sufficient attention to them.

The situation in the case of relations with various types of societies, associations, or consumer groups seems to be a little better (7 out of 10 responses). The experts confirm that they often create and foster relationships with these stakeholder groups, stressing, however, that they attribute a greater role to consumer groups. Because of this, they are able to better recognize the needs of their customers and adapt their offers to meet these needs. As far as relations with the other groups of stakeholders are concerned, pressure groups are considered important by the surveyed experts. Representing various industries, the experts confirm the fact that one should be aware of the possibility of potential lobbying.

The surveyed experts value relationships with labor market institutions most highly. It turns out that 9 out of 10 experts maintain such relationships. As the experts themselves admit, the times are now such that they often look for staff through recruitment agencies. Therefore, they cannot neglect this kind of contacts. At the end of this part of the study, the respondents were asked about the quality of

relational capital from the point of view of their own companies. Given the fact that, according to the author of the chapter, the quality of relations is dependent on several factors (including mutual exchange of information, the long-term nature of cooperation, mutual trust, or mutually beneficial cooperation), the experts were asked to rate it on a scale of 0–3 (where 0 means very low quality of relationship, and 3—very good, i.e., mutually beneficial cooperation).

It turned out that the quality of the company's relations with the environment was assessed as very good by only two experts, five of them assessed the quality as good (2 points), while three considered it to be at a low level (1–1.5 points). This means that the experts are not satisfied with the quality of the relational capital created. As they themselves note, still a great deal remains to be done in this respect. They recognize that in the companies they represent (not only currently, but also previously), relational capital remains a still unappreciated category. Although both the managers and employees understand the nature of relational capital, not always actions taken in this respect prove to be effective.

Another aspect mentioned during the panel discussion was the impact of relational capital of an enterprise on its performance and the development of its competitive advantage in the case of the companies represented by the experts. On this issue, the experts were definitely like-minded. Nine out of ten of the respondents (except expert no. 1) recognize the significant impact of relational capital on the performance of their enterprise. All of the experts surveyed see a correlation between relational capital and building a competitive advantage. Concerning this issue, each of the experts referred to their own experience. An overview of selected statements on this subject is presented in Table 3.

Based on the fact that, according to the experts, relational capital has an impact on both discussed factors, it was decided to ask the experts a question concerning the strength of this impact. The assessment (as in the previous case) was to be specified on a scale of 0–3, where 0 indicates a very weak impact, while 3 indicates a very strong impact. It turns out that for four experts the impact of relational capital on the performance of the company is very strong, while for the other six it is strong (2 points). In terms of relational capital and its impact on the creation of the company's competitive advantage, the experts' opinions vary. Five experts evaluated this impact as very strong, four as strong (2 points), and one as weak (1 point).

This means that despite the fact that the experts see the impact of relational capital on both issues, the strength of this impact may differ. The direction of this impact can also vary. Positive, well-structured relational capital can greatly contribute to the development of an enterprise. However, the situation may be reversed. Incorrectly built relational capital, or simply significant shortcomings in this area, may—according to the experts—contribute to the deterioration of the situation in a given company, and, consequently, to the emergence of a crisis. And here the question arises whether relational capital can also be a factor contributing to the success of recovery processes in an enterprise, if a crisis occurs.

The question was posed to the experts. The responses of the experts on this subject were very similar. Each of the respondents believes that relational capital is a very important factor that supports actions aimed at overcoming a crisis. The experts

Table 3 Opinions of the surveyed experts on the impact of relational capital of an enterprise on its performance and building its competitive advantage

No. of the expert	Opinions
Expert no. 1	<p>“I would give low marks for the quality of the relationships built by my company with its external stakeholders, so I do not see an obvious impact of relational capital on the performance of the company. However, I see a very noticeable influence on the creation of the enterprise’ competitive advantage. In the market of private higher education, university partner programs and dual degrees make an impression. The universities that have built such partnerships and strategic alliances have won this battle. The universities that have no such relationships, especially relationships with a foreign university, lose the fight for customers. This is for me the most convincing argument in favor of the fact that relational capital creates a competitive advantage.”</p>
Expert no. 2	<p>“Well-built relational capital can translate directly into the company’s financial standing. The situation is similar when it comes to the impact of relational capital on its competitive advantage. Well-built relational capital is the company’s intangible asset.</p> <p>Well-built relations pay off. If the company is a good employer and has good relations with the staff, people are eager to work there. If the company has good relationships with suppliers and fulfils its obligations, it is easier for such a company to find a supplier. Long-term, good relations with stakeholders make the company more competitive.”</p>
Expert no. 4	<p>“A competitive business advantage is created through relational capital because thanks to good relations with customers, the company knows exactly what they expect and is able to meet their expectations. This is the key to achieving a competitive advantage.”</p>
Expert no. 6	<p>“Relational capital built in my company allows me, as the owner, first of all, to have a sense of market security. The already built and constantly developed external relations allow, in particular, to ensure the diversification of sources of income. Therefore, regardless of changing market conditions in various business sectors that I work with, good relations maintained with my partners provide a sense of security. When in some industries there are periods of downturn, in other cooperating industries there are times of upturn (and thus the fulfilment of our objectives and source of income for the company are secured). At the same time, well-built relationships with the internal environment guarantee great loyalty and “commitment” to the cooperation with my company, and, hence, there is no need for recruitment, training, and orientation activities resulting from staff turnover. Relational capital can also be an important element in creating the company’s competitive advantage. Relational capital of external partners is needed to implement comprehensive business support services in the broadest sense, including legal support. This cooperation translates directly into the quality of customer service for a mutual client, which ultimately allows the company to build relational capital with this mutual client. Properly built relations with customers guarantee their loyalty and easier acceptance of potential ‘slip-ups’ that may arise in the course of cooperation, as well as enable easier and more successful price negotiations regarding services rendered.”</p>

Source: The author’s own compilation

Table 4 Opinions of the surveyed experts on the role of relational capital in overcoming an enterprise crisis

No. of the expert	Opinions
Expert no. 5	<p>“In a crisis situation—all hands on deck. In 2007–2009, when my company was going through a very serious crisis, nothing would have been possible without the workers. The people who decided to stay did everything to help the company overcome the crisis. Their loyalty and trust enabled the company to get out of trouble.</p> <p>Of course, the support of external stakeholders was also very important. I personally asked our customers to pay for the goods earlier, even before the processing of the order. And those were large transactions. Contractors trusted the company and decided to help it. Added to this, the deferment of payments for suppliers who also responded positively to the request for help. If not for relational capital, the company would have failed to overcome that difficult situation.”</p>
Expert no. 7	<p>“In crisis, only relational capital is important. When there is no more money, there is nothing, only people can do something and help the company to emerge from this difficult situation.”</p>
Expert no. 9	<p>“A crisis is nothing other than a situation which reflects the proverb: a friend in need is a friend indeed. A crisis situation is such a situation in which the company might say: “It is a test of our relations”. This is a test of what the company has done so far in the context of these relations, regardless of what kind of crisis it is facing. And if the relations between the company and its stakeholders (internal and external) are not good, it will be very difficult to find a common solution, if not impossible.”</p>
Expert no. 4	<p>“I perceive the essence of relational capital not from the perspective of my company, but my customers who have built these relationships with me. My company (the bank) is an external shareholder in a crisis situation. When we are dealing with the so-called soft restructuring, the bank tends to make faster and more favorable decisions in relation to these partners with whom it has better relations. The bank is interested in how to help them because they have better relations with it. Nothing builds a better relationship than providing help to a company in a situation when the said company needs it most.”</p>

Source: The author’s own compilation

note that during the crisis it is necessary to gather all the participants of a given crisis situation around the problem, that is, all the stakeholders, and work together to develop measures supporting the enterprise in finding a way out of this difficult situation. Expert no. 1 presented a truly model thesis that relational capital is a critical factor in the successful implementation of all restructuring processes in an enterprise. All the experts agreed with this statement. In their opinion, relational capital is people, and there is no organization without people. There is no chance of overcoming a crisis without people. It is therefore clear that relational capital is important. An overview of selected opinions of the experts on this subject is presented in Table 4.

It seems, therefore, that the experts’ opinions on relational capital and its importance in overcoming crisis situations are very consistent. A crisis in an enterprise is undoubtedly a very important test of a given company’s relations with all its

stakeholder groups. Thanks to properly built relational capital, such a company can overcome a crisis. Relations with its internal stakeholder, who is also an internal stakeholder of the crisis situation, play a key role. Due to the fact that an enterprise crisis directly affects this group of stakeholders, they feel directly threatened. And, of course, there will be those who will be looking for another employer at a moment like that. However, many employees will stay on to save the company. According to the experts, their employees are ready for many sacrifices—from reduction of wages, through employment in company subsidiaries, to becoming self-employed.

6 Conclusions

The study focuses on an attempt to answer the question concerning the impact of relational capital of enterprises on the emergence of crisis phenomena and its role in recovery processes, if a crisis occurs. The expert opinion survey indicates that relational capital is not, according to the surveyed experts, a significant crisis-generating factor. According to the respondents, it is very important, but they do not attribute a considerable crisis-generating role to it. They believe that a much greater role in this respect is played by internal financial and strategic factors. Thus, it seems that, despite the recognition of the role of relational capital, **H1** formulated at the beginning of the study, stating that incorrectly built relational capital may contribute to the emergence of crisis phenomena in an enterprise, cannot be confirmed.

The situation looks different in the case of **H2**: well-built relational capital of a company may be a tool in its restructuring and recovery processes. Repeatedly, the experts note that relational capital is absolutely critical in a crisis situation in an enterprise. If—according to the experts—a crisis occurs in an enterprise, thanks to good relational capital, it will be easier for the company to overcome it. And this applies not only to suppliers, subcontractors, and other business partners, but also to financial institutions, whose representative emphasizes that banks tend to make faster and more favorable decisions in relation to these entities with which they have better relations. It seems that due to this fact Hypothesis 2 has been confirmed. Given the fact that the expert opinion survey is the starting point for the planned quantitative research, the full verification of the formulated hypotheses will be done at the next stage of the research.

Acknowledgments The study was funded by the National Science Centre, Poland, as research project No. 2014/15/D/HS4/01170.

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Improved Predictability for Foreign Direct Investors by Comprising Different Macroeconomic Levels: A New Model Approach



Helmut Birnleitner

Abstract Foreign direct investments have grown over the last decades which are related to the ongoing globalization process. The current literature shows research works dealing with the topic of influence factors on foreign direct investment (FDI) decisions which may occur during the decision-making process. A new causal model has been developed to get in-depth view on macroeconomic perspective. Motives to do FDI are strongly impacted by macroeconomic factors which may influence upcoming decisions. To be able to understand the impact of the macroeconomic environment on FDI decisions the factors have been diversified and conceptualized, divided into three subgroups of independent latent variables in the construct. Two additional intervening variables, fiscal incentive schemes and uncertain and volatile environmental circumstances have been included to the model to gain a holistic picture of macroeconomic influence factors. One hundred and thirty-eight representative persons from the German and Austrian automotive industry served a basement of data for analysis. Expected market development, production factors, and public and governmental factors define the framework requirement of potential impact factors on FDI motives.

Keywords Internationalization · Macroeconomic factors · Foreign direct investment (FDI)

1 Introduction

The economic network and interdependence through internationalization and globalization (Garcia-Canal et al. 2018) intensified in a vast way. The permanent increasing competitive pressure within both, the economic on the one hand and the decreasing importance of national borders, means of transport or communication technologies on the other hand, lead to the situation that production sites are not, as it was two or three decades ago, any more seen on a national level, but much more on

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an international level (Schlösser 2009). The so-called “global competition” (Dereli 2015) forces the companies to be innovative, to be up-to-date, to understand the customer’s needs and to serve the right markets with the right goods in the right time.

Expansion of firms to penetrate and enter new markets became more common over the last decades. Internationalization and globalization are terms which are used frequently in many economic contexts (Adler 2008). The number of studies about outward foreign direct investments (OFIDs) thereof increased rapidly (Andreff and Andreff 2017). Main motives for investors after market seeking are strategic asset seeking, efficiency seeking, and resource seeking (Svetlicic 2007). The automotive industry, as this is the selected target branch of this work, has business activities all over the world (Dicken 2015). Reasons therefore are numerous (Boghean and State 2015) and for instance can be to serve new markets, covering upcoming demands, use of resources (e.g., raw materials), reducing transports, stay at customer’s site, etc. In such processes, companies are forced with many different influence factors. These factors can occur from the company’s structure, strategic goals, and visions (internal factors); these are the so-called microeconomic factors (Ansoff 1965; Mussnig 2007). And also the environment of a company plays a very important role by defining strategies (Mintzberg 1979) to enter new markets, new countries, or unknown territories. These factors are defined as the external factors and known as macroeconomic factors (McCarthy 1975; Porter 1980, 2008). This research work focuses on the macrolevel of influence factors and analyses the importance and power of impact of these factors to the decision process of FDI decisions. Especially for the automotive industry (Tophan and Manohar 2017), a study showed that gross domestic product (GDP) per capita is statistically significant related to higher sales rates of automobiles which again leads to economic growth. As an additional upcoming trend in terms of FDI attraction are fiscal incentive schemes (Siddique et al. 2017). This method, used by governmental or public institutes, is an effective instrument to attract FDI inflows for certain areas, where countries want to accelerate economic growth (Carbonell and Werner 2018), want to get access to new technologies, attract global players. Griebeler and Wagner (2017) states that conservative policies may signal a foreign capital-friendly government. Further studies of OECD (2003), UNCTAD (1996), and Tavares-Lehmann et al. (2016) showed a significant impact of fiscal incentive schemes on FDI decisions in general. This dimension also has been included into this chapter due to its actuality.

Fast changing environmental conditions of companies are influencing the daily business activities as well as have effects on the long-term perspectives. Business entities have to handle these changes (Wells 2013) and have to be aware of them. One of the big impacts in terms of globalization and internationalization is the intensification of competitive situations because of better global connection and transparency by modern media and means of transports. The so-called “global competition” (Gerber 2010) forces the companies to be innovative, to be up-to-date, to understand the customer’s needs, and to serve the right markets with the right goods in the right time. Kotler et al. (2007) say that only a company which recognizes the unsatisfied needs of the market or respectively of the customers can be successful.

Macroeconomic performances of countries can attract FDIs (Dutta and Roy 2009) or can reduce the willingness of foreign investors about potential future investments (Williams and Vrabie 2018; Yugang 2017). Hunady and Orviska (2014), for example, states that taxes are still often emphasized as a crucial determinant of FDI. Macroeconomic performance is a broad term for different characteristics and activities. Macro theories and policies (Mahajan 2008) are influencing states and people in all different kind of situations. Incentives have become of high importance for FDI activities on a firm level (Spero and Hart 2010). FDI attraction is often a reason of nations to create economic growth in their own country by foreign investors. Hermes and Lensink (2010) state that the development of the financial system of the recipient country is an important precondition for FDI to reach a positive impact on economic growth. To sum up the main factors of macroeconomic performance, in accordance to Mahajan (2008), these are: a high level of output, a high level of employment, a stable price level, growth of the productive capacity of the economy, and a stable exchange rate with exports more or less balancing with imports. Also incentives may positively affect business location decisions which lead to economic growth (Bartik 2017), but often they are excessively expensive with a low effect rate. Even if it is the strategic goal of a company to enter new markets, new countries, to gain more market shares or to serve new customers, the complexity of external influence factors becomes a difficult problem for the decision maker.

The aim is to evaluate the impact of macroeconomic factors including potential intervening factors on FDI decisions (Moran et al. 2018) on an empirical level. Following specific tasks have been conducted:

- It needs to be defined what are potential macroeconomic factors and perform a separation into subgroups for better differentiation as well as to evaluate potential intervening factors on FDI motives.
- To get an in-depth understanding of FDI motives (Liebscher et al. 2007; Sternad et al. 2013; Holmlund et al. 2007) of the German and Austrian Automotive industry and its strongest indicators as this is the dependent variable in the causal construct.
- Studying the theoretical point of view of macroeconomic factors and to perform a determination of specific subgroups with special characteristics to allow a differentiation and get a detailed view on impact factors.
- Perform a statistical analysis of fiscal incentive schemes and risks/uncertainties (Sternad et al. 2013; Aliber and Click 1999; Gann 1996) as potential intervening factors on macroeconomic variables and define its indicators as well as include them into the causal model.

It is the aim to explore if these intervening factors have a significant influence in this construct and are able to change FDI motives. The conceptualization of the variables in the construct builds up the basis for a strong causal model. The structured questionnaire therefore is the instrument for collecting data: construction of a causal model which includes cause-effect relationships in accordance to the research questions and hypothesis; testing the influence of macroeconomic factors on FDI motives including potential intervening factors; and studying the results of

the empirical tests, describing the values, deriving conclusions and creating suggestions for future FDI decision makers. The object of research is to measure the impact of macroeconomic factors and FDI intentions. The subject of research is FDI decision makers from the German and Austrian automotive industry.

2 Methodological Concept

The automotive industry as the targeted industry of this research work basically deals in the Business-to-Business (B2B) area. So, the companies which are selected for the survey start at the top from the supply chain (Casson and Wadeson 2018), at the original equipment manufacturer (OEM), which are in this case the vehicle manufacturer, and goes down the supply chain up to third-tier and more suppliers. The supply chain upward from OEM to distributors and selling process to the end-consumer has clearly been skipped from this study. The automotive industry (Mathivathanan et al. 2018) is a kind of protected industry sector. Only released and validated suppliers are allowed to deliver goods and services to their customers. Often a long and complex releasing procedure including audits, sample productions, and special certificates is necessary to get access to this industry. Specific foresight practices have been detected by Ruff (2015) as these mainly are: early detection in new business environments, trend research for the generation of product innovation, prospective evaluation of innovation ideas, exploration and development of new business, and cross-functional dissemination of future related issues.

The ongoing internationalization and globalization process has also hit this industry. Companies within this industry are forced with this development and FDI decisions are more often to be done than ever before. The OEMs are often the first companies to set-up directions for the upcoming decades. Conquer new markets and enter foreign countries wherever the potential markets occur are their targets. Suppliers within this industry follow them to secure the customer–supplier relationship and to foster their market position. On production sites of OEMs there are also following supplier networks. Or they are forced from their existing customers to follow, or to be skipped out as a whole of the supply chain. So, it can be seen that such decisions are very complex and long-term oriented and have impact on the company as a whole.

FDI intentions can be of various forms and often rose out of mid- and long-term corporate strategies. The willingness to expand in this context is mainly the core objective, but impact factors from the macroeconomic perspective (Moran et al. 2018; Wagner and Disparte 2016) are often not considered in early stages of the decision process. Out of these research findings the core factors have been filtered and separated into three categories for this chapter. The factors are divided into three main categories: Demand, Supply, and Public and Governmental Factors (Griffin and Pustay 2007). The literature excerpt also mentions factors which may intervene the FDI decisions. These factors also have been considered into this work and are divided into two main variables: The incentive schemes and the macroeconomic uncertainties.

First, the research questions have been formulated, as they build the basement for a new model development, followed by designing the base hypothesis and separated into seven sub-hypotheses. The main question of this research work has been formulated as RQ_{Base} : How important are different macroeconomic factors for FDI decisions in the automotive industry?

Hypothesis Construct

H_I: FDI motives of German and Austrian automotive companies are impacted by both macroeconomic factors and the intervening factors fiscal incentive schemes and risk/uncertainty.

H_{I.1}: The macroeconomic factor “Demand—Expected Market Volume” positively impacts both, the macroeconomic factors “Supply—Production Factors” and “Public and Governmental Conditions.”

H_{I.2}: The factor “Demand” impacts the “Risk/Uncertainty” factor in a significant positive way.

H_{I.3}: The factor “Demand” impacts the “FDI Motive” more strongly than “Supply” and “Public” does.

H_{I.4}: “Supply” has more influence on “FDI Motive” than on “Risk/Uncertainty.”

H_{I.5}: “Fiscal incentive schemes” have a positive impact on macroeconomic factors.

H_{I.6}: The “Public” factor is reversely positively related to “Risk/Uncertainty.”

H_{I.7}: The “Risk/Uncertainty” factor impacts “FDI Motives” significantly in a negative way.

3 Identification of the Decision Makers and Involved Persons in Terms of FDI Decisions

The targeted contacts for this survey are employees of these companies which are, or were, part of an FDI decision to establish a new entity in a foreign country. As already mentioned before in this work, such preparations and decisions are normally not taken by a single person but by a group of different people. This work tried to contact people from different management and experience levels. The target population for this study were entrepreneurs and employees from the German and Austrian Automotive industry. With this sentence it is meant, that not just the car manufacturing companies have been contacted, but also suppliers into this industry have been included into this study. So, also 1st Tier or 2nd Tier supplier with no limitation to the size of the companies. The main companies of the German and Austrian automotive industry have been contacted via paper studies and company directories as well as direct contacts. Persons were contacted who are currently working on FDI ventures, who had direct influence on FDI decisions and were involved as consultants (external or internal) in FDI decisions.

Just one of the before mentioned characteristics had to be fulfilled, and the interviewee was taken into consideration for this survey.

4 Data Collection and Target Population

A structured questionnaire (Mitchell and Jolley 2010) with fixed alternative questions (Bechhofer and Paterson 2000) was designed and was performed in German and English language to not limit the survey on language barriers and consisted of 50 questions to evaluate the latent variables and gaining a complete picture of the postulated causal model. Four hundred and eighty-one employees in Austria and Germany were targeted who were working in the automotive industry. One hundred and thirty-eight persons fulfilled the survey requirements which resulted into a reply rate of 28.7%.

For distributing the questionnaire, contacts from company directory as well as an online survey tool were used. The tool prevents multiple answers from one IP address and increases validity of the survey. The survey underlay a time-wise limitation and it was distributed to the selected contact persons on February 2, 2016. Closing date of the survey was March 1, 2016, 24:00 h. The respondents were informed about the duration of the survey.

5 Main Research Results

Figure 1 shows the developed causal model for this promotional work. The correlations represent a good convergent and discriminant validity. The coefficients of determination (R^2) also show a high level of determination of the latent variables. As most of the p -values show a statistical significance, the model validity is high.

To prove the postulated causal model's internal quality fit, following measurement characteristics were applied: The internal consistency reliability, and the Cronbach's Alpha value was applied. For convergent validity of the model, the AVE value, and the characteristic "Composite Reliability" measured the internal consistency reliability of the model (Hair et al. 2014; Nunally and Bernstein 1994). Table 1 shows the actual model values.

As a main finding out of the research work, the demand factor has the strongest influence on FDI intentions in the model with a $\beta = 0.451$ and highly significant $p = 0.000$. It can be concluded that the expected market volume in general has a stronger positive impact on FDI intentions than macroeconomic production factors or public and governmental conditions. The FDI intention in the causal model is highly explained by the chosen macroeconomic variables ($R^2 = 0.735$). Another interesting finding is the strong positive impact of the demand factor on public and governmental conditions ($\beta = 0.678$). Conclusively can be stated, the strong and direct positive impact of the factor Demand on the dependent variable FDI motives also creates impact on the other macroeconomic factors Supply and Public. Also the negative intervening factor Risk/Uncertainty is strongly positively impacted by the Demand factor ($\beta = 0.596$; $p = 0.000$; $t = 7.424$).

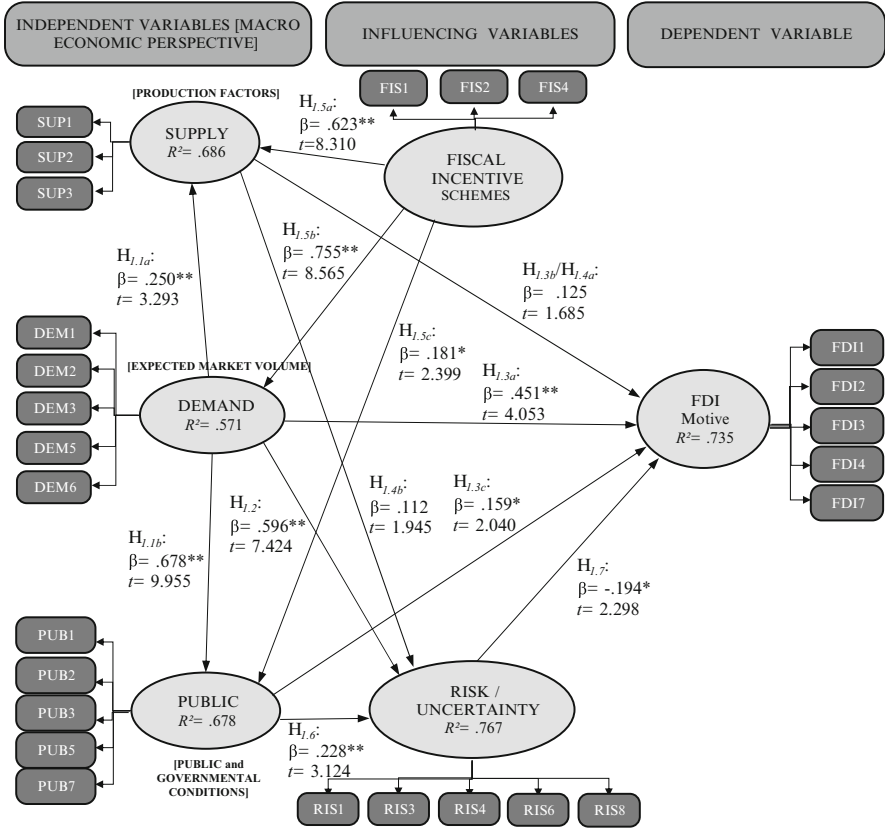


Fig. 1 Causal model including statistical values (Note: $*p \leq 0.05$; $t \geq 1.96$; $**p \leq 0.01$; $t \geq 2.57$. Source: Author’s own construction)

Table 1 Model fit characteristics and values

Model fit characteristic	Cronbach’s Alpha	Average variance extracted (AVE)	Composite reliability
<i>Threshold value:</i>	≥ 0.70	≥ 0.50	≥ 0.70
Source:	Hair et al. (2014)	Hair et al. (2014)	Hair et al. (2014); Nunally and Bernstein (1994)
<i>Used variables in the structural equation model (SEM)</i>	<i>Measured values</i>		
FDI motive	0.790	0.545	0.856
Demand	0.753	0.591	0.808
Supply	0.707	0.486	0.710
Public	0.742	0.592	0.780
Risk/uncertainty	0.760	0.541	0.781
Fiscal incentive S.	0.731	0.503	0.750

Source: Author’s own construction

Fiscal incentive schemes are strongly positive related to demand and supply factors (Demand $\beta = 0.755$, $p = 0.000$; Supply $\beta = 0.623$, $p = 0.000$). The high significant level and the strong loadings show the importance of fiscal incentive schemes in the context of macroeconomic performance and FDI ventures. A weak influence on FDI intentions has the risk and uncertainty factor with a β loading of -0.194 and a significance of $p = 0.022$. It seems that when the expected market volume (demand factor) is strong, the negative impact of risks and uncertainties becomes less important for the decision makers.

The model shows a strong relationship between demand and supply factor ($\beta = 0.250$). And here again it can be seen that when the expected market volume has a positive outlook, the production factors are also positively influenced. A main finding in this work represents the low impact of production factors (supply) on FDI motives. The values out of the survey are $\beta = 0.125$ and $p = > 0.05$. It seems that production factors are not the main drivers for FDIs. Hence, this work focused on the macroeconomic perspective and is limited to the specific conditions of the automotive industry in Germany and Austria. Other branches or geographical regions may deliver different data. Expert interviews concluded that lower labor costs, logistic advantages, synergy effects, etc. may have an impact on some FDI intentions, but due to globalized business relations in the automotive industry, being at customer's place is more important and is counted more than production factors.

The general recommendation to managers who have to deal with FDI decisions is to be aware of the potential positive effect of fiscal incentive schemes as these incentives often help especially in the first couple of years after the investment to settle and increase the business activities. A good preparation and information base for potential uncertainties of the target country decreases potential negative interferences during the FDI procedure.

5.1 Assessment of the Main Hypothesis H_1

FDI motives of German and Austrian automotive companies are significantly positive impacted by all three macroeconomic factors: Demand, Supply, and Public.

Table 2 shows the factor loading β , the p -value and the t -value for all three independent macroeconomic variables on FDI decisions.

Table 2 Assessment of the base hypothesis H_j

Path/relationship	Factor loading β -value ≥ 0.100	t -value ≥ 1.96	p -value < 0.05	Accepted/rejected
H_j : Demand \rightarrow FDI motive	0.451**	4.053**	0.000**	Accepted
H_j : Supply \rightarrow FDI motive	0.125	1.685	0.093	Rejected
H_j : Public \rightarrow FDI motive	0.159*	2.040*	0.042*	Accepted

Note: * = $p \leq 0.05$; $t \geq 1.96$; ** = $p \leq 0.01$; $t \geq 2.57$

Source: Author's own construction

As shown in Table 2, the path coefficient Supply \rightarrow FDI Motive has a minor and poor explanation on FDI Motives. And therefore, due to the given limits of criteria, this path must be rejected. The total effect for the base hypothesis must be higher than 0.500 to be accepted as significant and relevant. The total effect is 0.741 and therefore the three macroeconomic variables Demand, Supply, and Public represent a strong explanation quality on FDI motives in this certain model. The base hypothesis H_j is accepted.

5.2 Assessment of the Sub-hypothesis

The sub-hypothesis $H_{j,1}$ consists of two paths in the causal model. Figure 1 shows that the relationship between Demand and Supply is strongly significant ($p = 0.001$; $t = 3.293$) and has a quite high loading ($\beta = 0.250$). Again stronger is the relationship from Demand to Public. Hereby a β -value of 0.678 represents a high loading. Also the p and t values are strongly significant ($p = 0.000$; $t = 9.955$). The sub-hypothesis $H_{j,1}$ is accepted.

The sub-hypothesis $H_{j,2}$ investigates the significant positive relationship between the macroeconomic factor Demand and the intervening factor Risk/Uncertainty. The aim was finding out if there is a relationship between these two variables and if yes, is it positive or negative. In this construct the factor loading was strongly positive (β -value 0.596) and significant ($p = 0.000$; $t = 7.424$). The sub-hypothesis $H_{j,2}$ is accepted.

The sub-hypothesis $H_{j,3}$ predicted a higher importance of Demand on FDI motives than Supply and Public. The author assumed that an expected market volume (Demand) is more attractive on FDI decision maker than production factors (Supply) or public and governmental conditions (Public). It could be detected that Demand has a much stronger factor loading (β -value = 0.451) than the other two variables (Supply = 0.125; Public = 0.159). In addition to underline the difference of the influence of the variables, Supply \rightarrow FDI Motive even has a weak significance level of $p = 0.093$, $t = 1.685$. Also Public \rightarrow FDI Motive ($p = 0.042$; $t = 2.040$) is much lower than Demand \rightarrow FDI Motive ($p = 0.000$; $t = 4.053$). The sub-hypothesis $H_{j,3}$ is accepted.

The sub-hypothesis $H_{j,4}$ examines the influence of the Supply factor on both, FDI Motive and Risk/Uncertainty. As it can be seen in Fig. 1, the factor loading of $\beta = 0.125$ on FDI Motive and $\beta = 0.112$ on Risk/Uncertainty is acceptable, but they are low and quite similar. But due to the low significance levels where Supply \rightarrow FDI Motive just shows a p -value of 0.093, $t = 1.685$ and Supply \rightarrow Risk/Uncertainty represents also only $p = 0.052$, $t = 1.945$ the hypothesis cannot be accepted, even if there seems to be a slight difference.

The sub-hypothesis $H_{j,4}$ is rejected.

The sub-hypothesis $H_{j,5}$ assumes a significant positive effect of fiscal incentive schemes on all three macroeconomic variables—Demand, Supply and Public—in this chapter. The strongest effect hereby represents the relationship $H_{j,5b}$ with a

β -value of 0.755. But also Supply is influenced in a strong way by fiscal incentive schemes (β -value = 0.623). Only the public and governmental conditions are less impacted by fiscal incentive schemes ($\beta = 0.181$). The sub-hypothesis $H_{1,5}$ is accepted.

The sub-hypothesis $H_{1,6}$ assumes a positive influence from public and governmental conditions. It is represented mainly by general legal requirements and economic performance. The measurement is done on factor risk/uncertainty, which again is indicated by legal risks, low enforcement, political risks, stabilities, etc. The evaluation of the data represents a strong positive β -value of 0.228 with high significant values $p = 0.002$ and $t = 3.124$. This leads to a positive result of $H_{1,6}$. The sub-hypothesis $H_{1,6}$ is accepted.

The sub-hypothesis $H_{1,7}$ assumes that risks and uncertainties in terms of FDI activities impact in a significantly negative way. Vice versa it assumes that even if there are attractive macroeconomic factors for doing FDIs, high risks and uncertainties of target countries reduce the willingness to invest significantly. The β -value shows a negative value of -0.194 which is acceptable for a one-path loading and a significant t -value of 2.298 as well as a significant p -value of 0.022. The sub-hypothesis $H_{1,7}$ is accepted.

Table 3 represents a summary of the hypothesis results.

Table 3 presents a condensed overview of the evaluation of the hypothesis test. It seems that on the example of the B2B business in the German and Austrian automotive and automotive supplier business the macroeconomic factors have a

Table 3 Summary of the hypothesis results

Hypothesis No:	Description	Accepted/ Rejected
H_1	FDI motives of German and Austrian automotive companies are significantly positive impacted by all three macroeconomic factors: Demand, Supply, and Public.	Accepted
$H_{1,1}$	The macroeconomic factor “Demand—Expected Market Volume” positively impacts both, the macroeconomic factor “Supply—Production Factors” and “Public and Governmental Conditions.”	Accepted
$H_{1,2}$	The factor “Demand” impacts the “Risk/Uncertainty” factor in a significantly positive way.	Accepted
$H_{1,3}$	The factor “Demand” impacts the “FDI Motive” more strongly than “Supply” and “Public” does.	Accepted
$H_{1,4}$	“Supply” has more influence on “FDI Motive” than on “Risk/Uncertainty.”	Rejected
$H_{1,5}$	“Fiscal incentive schemes” have a significant positive impact on macroeconomic factors.	Accepted
$H_{1,6}$	The “Public” factor is reversely positively related to “Risk/Uncertainty.”	Accepted
$H_{1,7}$	The “Risk/Uncertainty” factor impacts “FDI Motives” significantly in a negative way.	Accepted

Source: Author’s own construction

strong influence on FDI intentions. Only the “Supply” factor, which has been proved in $H_{1.4}$, did not show a significant impact.

Comparing this output with previous studies done by Holmlund et al. (2007) where they evaluated the most important internationalization motives of 178 small- and medium-sized companies, following results have been found (measured on a 5-level Likert scale, 0 = no impact at all, 5 = very strong impact on the internationalization motive): Interest of Management (3.74), Home market too small (3.56), Customer request from abroad (3.02), Free production capacities (2.90), Possibility to increase profit (2.78), Follow an existing national client (2.65), Unique products (2.61), Follow competitors abroad (2.21), Requirements from an existing partner (1.82), Technological advantages (1.67), Achieving of economies of scale (1.56), Support from a regional union or similar (1.53), Cooperation with competitors or business partners (1.52), Cooperation with suppliers (1.33), Closeness to customers and/or harbors (1.31), Tax reasons (1.03). This study shows partially similar results as the results gained in this research work. The market demand is also seen as very high, whereas supply factors are recognized as less important. According to Liebscher et al. (2007), who did an excerpt of a large body of available literature results about main FDI motives, he comes to the following findings: market imperfections, internationalization strategies, absolute and comparative advantages, the direct control of foreign operations in a less known foreign environment and, in a more generally seen way, establishing a better knowledge of foreign markets are hereby the main drivers. Also compared with these results, there are overlaps in the results.

Other previous studies showed that the impact of government policies are less effected to positive FDI flows (Gilroy et al. 2005). And furthermore, Helleiner (1989) stated that specific incentives do not have a major impact on FDI flows. He says that incentives influence the decisions of investors only very marginally. And Dees (1998) did a survey for the decisions of US companies to invest in China. The evidence shows that removing restrictions and providing good business operating conditions will affect FDI flows positively. Incentive schemes are instruments which are used from governments to increase the attractiveness of their location (Gilroy et al. 2005). The incentives, for example tax breaks or trade incentives, aim to encourage FDI inflows by reducing costs and making investments more interesting and profitable for them. The incentive schemes are often closely linked to efforts and activities from the host government. The aim of them is to encourage investment in export industries or preferred sectors or in less developed areas of the country. Most host countries believe that incentive schemes are crucial and of high importance to attract FDI inflows because competing economies have similar schemes (Gilroy et al. 2005). According to an UNCTAD survey of investment promotion agencies (IPAs), fiscal incentives are the most frequently used type of incentives for attracting and benefiting from foreign investment, whereas financial and regulatory incentives are less commonly used for these purposes (Tavares-Lehmann et al. 2016).

Finally it can be stated that also other studies showed similar results in some areas, as there is the market as a main driver for FDI and supply factors are less

important. Incentives are seen differently which also is visible in the various different research results from other studies. To draw a deduction for this case, it is dependent on the view of micro or macro environmental level as well as industry-specific requirements and frameworks need to be considered.

6 Conclusions

- This research work is limited and related to specific requirements and characteristics of the automotive industry and may include effects which are not representative for other branches or markets. Only B2B relationships were taken into consideration. This work focuses on macroeconomic influence factors and deliberately excludes microeconomic factors from this study. Geographically it is limited to German and Austrian located companies and its employees or entrepreneurs. A time-wise limitation has also been set. Only FDI decisions from the last 10 years, starting with the date of the online survey being sent out, are considered in this work.
- As a main finding of the research work, the demand factor has the strongest and highly significant influence on FDI intentions in the model. It can be concluded that the expected market volume in general has a stronger positive impact on FDI intentions than macroeconomic production factors or public and governmental conditions. The FDI intention in the causal model is highly explained by the chosen macroeconomic variables. Another interesting finding is the strong positive impact of the demand factor on public and governmental conditions. Also the negative intervening factor Risk/Uncertainty is strongly positively impacted by the Demand factor.
- Fiscal incentive schemes are strongly positive related to demand and supply factors. The high significant level and the strong loadings show the importance of fiscal incentive schemes in the context of macroeconomic performance and FDI ventures.
- A weak influence on FDI intentions has the risk and uncertainty factor which can be seen on the low factor loading and significance level. It seems that when the expected market volume (demand factor) is strong, the negative impact of risks and uncertainties becomes less important for the decision makers.
- The model shows a strong relationship between demand and supply factor. And here again it can be seen that when the expected market volume has a positive outlook, the production factors are also positively influenced.
- A main finding in this work represents the low impact of production factors (supply) on FDI motives. It seems that production factors are not the main drivers for FDIs. Hence, this work focused on the macroeconomic perspective and is limited to the specific conditions of the automotive industry in Germany and Austria. Other branches or geographical regions may deliver different data. Expert interviews concluded that lower labor costs, logistic advantages, synergy effects, etc. may have an impact on some FDI intentions, but due to globalized

business relations in the automotive industry, being at customer's place is more important and is counted more than production factors.

- The general recommendation to managers who have to deal with FDI decisions is to be aware of the potential positive effect of fiscal incentive schemes as these incentives often help especially in the first couple of years after the investment to settle and increase the business activities. A good preparation and information base for potential uncertainties of the target country decreases potential negative interferences during the FDI procedure.

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The Importance and Use of Cost Information in Polish Enterprises: Survey Results



Ewa Makowska and Aleksandra Banaszekiewicz

Abstract Costs have an impact on management decisions such as maintaining a competitive position on the market, changes in the product range offered, or acquiring new sales markets. Creating a well-functioning cost information system in an enterprise therefore plays a very important role, not only from the point of view of financial reporting, but also in the entire management system. The size and detail of the collection of cost data depends on many factors such as: the nature of the business, the industry and the range of services provided, or the size of the enterprise. The aim of the chapter is to present selected results of surveys conducted in 2016 on the importance of cost information in the practice of Polish enterprises operating in the Kuyavian-Pomeranian, Pomeranian, and Warmian-Masurian Voivodships.

Keywords Management accounting · Cost information · Cost calculation methods · Unit cost · Usage of cost information · Costs

1 Introduction

Costs are an indispensable element in the operations of almost every enterprise. They affect the profit generated by the entity, and therefore, the amount of tax burdens. Detailed information about their height allows you to accurately control their current but also the future level. However, it should be emphasized that the information needs of individual user groups in terms of costs are extremely diverse (Drury 1991; Diefenbach et al. 2018).

The scope of cost information depends on many different factors, such as the size of the enterprise, market competition, scope of activity and its specificity. Therefore, the development of a cost information system in an enterprise is an individual matter and should be adapted to its special characteristics (Januszewski 2007). When there

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are considerations about the generation and use of cost information, one should also not forget about the quality of information obtained, which depends, among other things, on the qualifications of employees. A properly developed cost information collection system helps the company to monitor costs incurred and their valuation, identification and registration (McLaney 1994). All these activities enable both the preparation of financial statements (the reporting objective) as well as are the basis for an effective management system (management goal) (Raulinajtys-Grzybek and Świdorska 2017; Cescon et al. 2018).

The main task of the cost accounting is to create an information base about the costs of the activities carried out by the entity and to adapt the system to the needs of its users (Glautier and Underdown 1994). Therefore, cost information presented in the cost calculation should allow making rational decisions and support managers in the decision-making process (Horngren et al. 1996). On the other hand, changes taking place in the company's environment and growing competition force the entities to continuously monitor the level of costs incurred in order to rationalize their level (Banaszekiewicz and Makowska 2010, 2018). Such questions as the calculation of the unit cost of goods or services, the use of traditional and modern methods of calculation and cost accounting have been the subject of studies such as Vilenovich Govdya et al. (2017), Kolosowski and Chwastyk (2014), Gonzalez-Sanchez et al. (2014), Maruszewska et al. (2017), Papaj (2017), and Nara Medianeira Stefano and Nelson Casarotto Filho (2013).

Research conducted in Poland in the years 1999–2000 and 1999–2001 on the direction and causes of changes in the cost accounting system in the practice of enterprises showed low quality of cost information coming from the full cost accounting system and a small range of its use, also for management purposes. The reasons indicated as the greatest barriers to the implementation of modern cost accounts were the limited scope of business activity and the lack of financial resources (Szadziewska 2002). The level of cost accounting maturity in Polish enterprises was the subject of research carried out by Zieliński in 2010–2011 (Zieliński 2015). Research on problem-based cost accounts was conducted in Poland, among others, by Ciechan-Kujawa (2005) and Goldmann and Bernasińska (2013).

The aim of the chapter is to present the results of surveys conducted in 2016 on the use of cost accounting in the practice of Polish enterprises operating in the Kuyavian-Pomeranian, Pomeranian, and Warmian-Masurian voivodships. In addition to general information about the surveyed entities, the questionnaire contained questions from following areas: generation of cost information in the enterprise and its use, methods of cost calculation, applicable cost accounting system, scope of cost control, and tools used within it. The chapter presents only the results regarding answers to selected questions in the scope of the cost information system and its use in the enterprise. At the same time, particular attention was paid to the methods used by respondents to calculate the unit cost of providing services or manufacturing products.

2 Characteristics of the Research Sample

One hundred and forty-nine companies from the following provinces participated in the survey: Kuyavian-Pomeranian, Pomeranian, and Warmian-Masurian. The sample was purposeful, and the criterion for selecting companies for the study was the company's recording of costs for reporting and/or tax purposes. Only those individuals who agreed to fill in a questionnaire, delivered in person, were subjected to research. We can argue that as the survey was done for a specific number of provinces, the generalization of the findings might be limited. Among the respondents, the largest group was service companies (42%). Production companies came in second (31%). The smallest group taking part in the survey was trade enterprises (27%). Taking into account the period of operation on the market, 67% of the surveyed entities have been in business for more than 10 years.

As for the industries, respondents mainly represented the construction and food industries. Among the surveyed companies were also some representatives of the commercial sector, financial services, agriculture, electronics and IT, transport, wholesale trade, and production of steel constructions. In terms of legal form, companies with limited liability prevailed (33%).

As far as the scope of activity is concerned, respondents were predominantly the entities operating mostly in the domestic arena (42%). The companies that carried out activities in the local area were 30% of the sample, while 28% of the surveyed entities operated on the international market. Taking into account the size of employment, the largest group among the surveyed was companies employing up to ten people and in the range from 11 to 50 employees (29% in each of the indicated ranges). More than 200 people were employed in 26% of surveyed entities, while the range of 51–200 employees was represented by 16% of units. In 68 cases, the questionnaire was filled in by an accountant, in 49 cases it was another employee, in turn for 31 units the data was provided by the owner. In one case, the owner and the accountant filled out the questionnaire together.

3 Costs and Their Records in the Surveyed Enterprises

One of the first questions the respondents were asked about during the study was the issue of cost structure. Respondents were asked to provide an approximated structure of costs by type according to their state at the end of the year. Table 1 presents the results obtained broken down on the basis of the nature of the conducted activity.

The obtained results indicate that the structure of costs incurred by enterprises depends primarily on their operations. Production companies indicated clearly the most important cost—consumption of materials and energy (42%). In commercial enterprises, this cost category was set at 36%. In service units, salaries (27%) and consumption of materials and energy (23%) had the largest share in the cost structure. Salaries were an important cost also in other types of entities surveyed.

Table 1 The structure of costs by type, broken down by type of activity

	Manufacturing (%)	Commercial (%)	Service (%)
Depreciation	9	8	9
Consumption of materials and energy	42	36	23
External services	14	17	15
Taxes and fees	7	8	10
Salaries	19	18	27
Social benefits	6	7	7
Other costs defined by type	4	6	9

Source: Own study based on the questionnaire survey

Table 2 The structure of costs by type, broken down by the period of operation

	1–5 years (%)	6–10 years (%)	Over 10 years (%)
Depreciation	11	9	7
Consumption of materials and energy	36	26	31
External services	13	18	15
Taxes and fees	9	9	8
Salaries	20	21	24
Social benefits	6	8	7
Other costs defined by type	5	8	8

Source: Own study based on the questionnaire survey

This was, respectively, 19% for manufacturing companies and 18% for commercial enterprises. The respondents considered external services to be another significant cost. Their average share in the structure of costs ranged from 14% to 17%. The share of depreciation, social benefits, taxes and fees and other costs by type constituted up to 10% of total costs.

Another factor influencing the structure of costs incurred by respondents was the period of conducting business activity. Table 2 presents the answers obtained taking into account the period of conducting business activity.

Taking into account the time criterion, it can be noticed that the longer the company operates on the market, the share of depreciation decreases from 11% to 7%. This is due to the aging of the entity and, consequently, of the resources held and the nature of depreciation policy pursued by the respondents. However, in the case of salaries, their share grows in the structure of total costs with the age of the surveyed entities. This is the result of the natural process of enterprise growth and the accompanying increase in employment. In the case of materials and energy consumption costs, companies operating up to 5 years determined their average share in the structure of costs to be close to 36%. Companies operating for 6–10 years defined the share of this category in total costs at around 26%. This decline in share may indicate cost savings resulting either from the experience effect or cost cutting in connection with potential investments, for example, the expansion of new outlets or the expansion of the product range. However, according to the responses of the

Table 3 The structure of costs by type, broken down by scope of activity

	Local (%)	Domestic (%)	International (%)
Depreciation	11	7	7
Consumption of materials and energy	25	32	39
External services	12	19	13
Taxes and fees	14	7	6
Salaries	22	25	21
Social benefits	9	6	6
Other costs defined by type	8	5	8

Source: Own study based on the questionnaire survey

Table 4 The structure of production costs due to the type of activity

	Manufacturing (%)	Commercial (%)	Service (%)
Direct materials	56	53	38
Direct labor	21	18	31
Other direct costs	11	11	14
Indirect costs	13	19	17

Source: Own study based on the questionnaire survey

respondents, such cost items as taxes, fees, and social benefits do not differ significantly regardless of the length of the business period.

The structure of costs by type, taking into account the scope of activities, is presented in Table 3. It confirms that the most important cost for respondents is the consumption of materials and energy as well as salaries. In enterprises operating internationally, the share of both these items constitutes 60% of the total costs incurred. In domestic companies it is 57%, while in local companies—47%. In units with a local range of activity, a definitely larger share of taxes and fees (14%) is also noticeable, which in domestic and international enterprises constitutes about 6–7%. Depreciation and external services are categories which, on average, were estimated by local respondents at just over 10% of the costs. These costs in entities operating in the domestic and international dimension obtained the indication of 6–7%.

Another important issue from the point of view of costs incurred is the structure of production costs. The results obtained are presented in Table 4.

While analyzing the share of individual cost elements in the production cost structure, it can be noticed that it is influenced by the type of business activity. Direct materials account for 56% of production costs in production units and 53% in trade. In the case of service companies, the share of this item is significant, but smaller than in the aforementioned entities (38%). These enterprises also indicated a large share of direct labor (31%). In production and trade companies it was smaller and amounted to 21% and 18%, respectively. On the other hand, indirect costs account for 19% of manufacturing costs in commercial enterprises. Their level is similar (17%) in service units. In the case of production entities, it constitutes 13% of total production costs. This is a very important issue, especially from the point of view of

Table 5 The structure of production costs due to the scope of activity

	Local (%)	National (%)	International (%)
Direct materials	37	45	58
Direct labor	29	27	19
Other direct costs	14	11	9
Indirect costs	20	17	14

Source: Own study based on the questionnaire survey

Table 6 Cost accounting system

	Manufacturing (%)	Commercial (%)	Service (%)
Generic	23	24	53
Functional	19	17	18
Generic and functional	58	59	29

Source: Own study based on the questionnaire survey

choosing the right method for calculating the unit cost of production. Such issues as cost management, budgeting process, or pricing policy will depend on the fact of how precisely the unit costs of a product or service have been determined.

Considering the structure of production costs from the point of view of the scope of the conducted activity, it can be noticed that the share of costs of direct materials is definitely larger in entities operating on international markets. Its average share is 58%. On the other hand, direct labor costs have the largest share in local (29%) and national (27%) units. A similar situation can be observed in the case of indirect costs. Accordingly, 20% of entities operating on the local scale and 17% operating on the domestic market made such an indication. The obtained answers are presented in Table 5.

To the question about the way the costs are registered in financial and accounting system, the vast majority (58% and 59% entities, respectively) of production and commercial companies indicated that both in a generic and functional manner. Twenty-three percent of manufacturing and 24% of commercial entities replied that only in the generic system, while respectively 19% and 17%, that only in the calculation system. Among the companies providing service activity, the largest number of indications was for cost records only in a generic manner 53% or for records in both a calculation and generic 29%. Records of costs in both systems increase the scope of detailed cost information and enable its use especially for calculation purposes. Thus, it enables more accurate monitoring of costs incurred and their budgeting. Table 6 presents the obtained answers on the subject of the system of keeping records of costs in enterprises.

4 Cost Calculation

The next question concerned the place where the cost of manufacturing the product was calculated. Collective answers are presented in Table 7.

The vast majority of all surveyed entities indicated that this calculation takes place in the finance and accounting department, based on the actual costs registered in the system. In the second place in the case of manufacturing and trade companies, it was reported that it is performed by another department, for example, management accounting, controlling or cost control one. In the case of service companies, it was pointed out that the calculation was made by an external accounting firm. The conducted research shows that even if calculation is carried out by another department, the basis for its preparation is information from the financial and accounting system. Only six entities indicated data from the budget, and four units gave other answers, i.e., indicated: storage system (two indications), technological standards and proprietary application for cost records. Such a distribution of responses results from the fact that, according to Polish regulations, manufactured products are valued for the balance sheet purposes at a unit cost of production. Therefore, for reporting purposes, the calculation of the unit cost of production is made by the accounting. Few individuals distinguish in their organizational structure a controlling or management accounting unit that could take over those responsibilities. And even if such a cell operates within the unit, the scope of its duties is most often different in different enterprises and depends on its experience, tools and knowledge and skills.

As for the regularity of cost calculation, the vast majority of surveyed companies prepare it once a month. Fifty percent of manufacturing entities, 59% of commercial and 38% of service providers gave such an answer. Once a quarter, it is carried out by around 20% of respondents. Table 8 presents the frequency with which the respondents carry out the calculation.

Table 7 Registration of the cost of manufacturing the product

	Manufacturing (%)	Commercial (%)	Service (%)
Financial and accounting department	66	66	60
Other department	24	17	10
External company	8	7	15
Other	2	2	5

Source: Own study based on the questionnaire survey

Table 8 The regularity of cost calculation

	Manufacturing (%)	Commercial (%)	Service (%)
Once a month	50	59	38
Once a quarter	23	20	16
Once a year	9	10	12

Source: Own study based on the questionnaire survey

Table 9 Usability of information about the unit cost

	Manufacturing (%)	Commercial (%)	Service (%)
Financial accounting	19	22	25
Financial and management accounting	81	68	59

Source: Own study based on the questionnaire survey

Table 10 Tools used to calculate production costs

	Manufacturing (%)	Commercial (%)	Service (%)
Spreadsheet	70	51	71
Functions built into the system	20	27	14
Dedicated calculation tool	6	5	4
Other	4	2	3

Source: Own study based on the questionnaire survey

The next question concerned the methods used to calculate the unit cost. At the same time, respondents could indicate more than one method. All surveyed enterprises most often use the methods included in the division calculation group to calculate costs. Forty-one percent of manufacturing entities, 54% of commercial and 58% of service providers gave such an answer. These methods are relatively easy to use and allow to determine the unit cost of a product or service in a rather uncomplicated way. The enterprises also indicated the use of the ABC method. The companies that have made such an indication have been in business for more than 6 years, mainly on the domestic or international market. Production companies also used phase and addition calculations as well as calculation of coupled production. Correspondingly also service companies indicated the use of additional and ABC calculation. Among the trade companies, the use of phase calculations was also indicated.

Table 9 presents the respondents' indications regarding the use of information on the cost of production for reporting and management purposes. Information about the cost of production is used by respondents for reporting and management purposes. Some of the respondents indicated that they use the calculation only for the needs of financial accounting (25% of service companies, 22% of commercial and 19% of manufacturing ones). Such responses were provided mainly by small entities conducting economic activity up to 5 years, most often on the local market.

From the point of view of assessing the utility of unit cost information, all enterprises rated the following ones as the most useful for practical application: pricing, production cost control, the valuation of finished products (services) and work in progress, and the calculation of product profitability.

Next question was about tools used to calculate production costs. Table 10 presents the answers obtained, broken down by the nature of the activity conducted by the respondents.

Calculation of the unit cost takes place mainly using a spreadsheet (71% of service companies, 70% of manufacturing companies, 51% of trading companies). In the second place, the use of functions embedded in the system was indicated, for

example, a module in the SAP system (27% of service companies, 20% of manufacturing companies, 14% of trade companies). About 6% of the total number of respondents indicated the use of a dedicated IT tool for the calculation, which means, for example, such tool as the SAP ABC. It should be emphasized that the use of this type of tools is associated not only with the need to incur significant financial expenses to purchase the software and hardware needed to operate them. It also requires having well-trained management staff able to apply them and use the information obtained for management purposes both in operational and strategic terms.

5 Conclusion

Based on the analysis of the results of the study, it can be concluded that the structure of incurred costs by type and the composition of the unit cost of production in the surveyed entities depends, among others, on the type of business, duration of operation on the market, and the scope of services or products offered. The answers given may suggest that managers are aware of the importance of cost information within the unit management process. It is useful primarily in such areas as production cost control, pricing, profitability calculation of products and valuation of finished products and services rendered and work in progress.

The systematism with which the cost calculation is carried out should also be positively assessed. Relevant information on the current cost of operations is a great support for managers, especially in the decision-making processes in the area of pricing policy and cost control. In the scope of the methods used to calculate costs, the methods included in the subdivision calculations dominate among the surveyed entities. Relatively little interest of surveyed companies is directed toward advanced methods such as the ABC. Their application requires more knowledge from managers and the use of appropriate tools to support the cost calculation process.

The level of usage of cost information and its applicability increases with the scope of the business and the number of years of operation on the market. The entities from the higher end of the spectrum usually have a more extensive organizational structure, operate not only on the local market, but also often on the domestic or even international market. These circumstances make the level of operating costs and their structure more complicated. It is therefore justified to record them more accurately, analyze them, and control them. Properly carried out cost calculation is also a useful tool to support managers in making decisions regarding the use of resources, undertaking specific business activities, or abandoning them.

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Praxeology in Innovative Healthcare Project Evaluation



Tadeusz A. Grzeszczyk and Marek Zawada

Abstract The main aim of this chapter is to examine the applicability of praxeological theory to the evaluation of innovative projects in the healthcare sector. We propose a set of project evaluation criteria and indicators. The empirical data used in the pilot study was taken from projects carried out by a Contract Research Organization. The analyzed projects regard R&D as well as clinical and observational studies. Interviews were conducted with experienced people in the R&D projects management, projects carried out jointly by scientific units, along with commercial projects in the medicine and pharmaceutical industry. The results of the conducted analyses formulate key criteria and indicators (based on effectiveness, economicality, and efficacy) for evaluating the performance of innovative healthcare projects. The conclusions drawn from the research results allow to claim that it is possible to use praxeological theory in the evaluation of healthcare projects. The chapter presents current problems important from the point of view of management sciences and undertaken research development.

Keywords Project management and evaluation · Praxeology · Innovative healthcare project · Evaluation criteria

1 Introduction

The essence of project management is the use of information, knowledge, skills, methods, techniques, and tools to manage some unique and complex activities to meet the previously established project requirements and provide unique products, services, or results (PMI 2017). Implementation of projects in an efficient and effective manner is important both for commercial and public projects, including those implemented in the health and medical sectors. In the case of failure of healthcare projects (related to the delivery of their products/outcomes of adequate

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quality in a timely manner, and possibly at relatively low costs), they have negative implications not only for management entities, but also negative social consequences.

The risk of failure is particularly large for innovative healthcare projects, which concern, for example, the construction of medical facilities equipped with highly specialized tools, the implementation of electronic circulation systems for patients' medical records (e.g., for HIS hospitals—Hospital Information System, medical facilities EHR/EMR—Electronic Health Record/Electronic Medical Record), implementation of various types of IT projects, development of new medicines and medical devices by pharmaceutical companies (Sa Couto 2008). This risk can be reduced by using appropriate evaluation methods and systems based on properly selected indicators and criteria.

Research achievements in the discipline of management, as well as in the field of project management and evaluation mainly concern commercial projects implemented by organizations primarily focused on financial profits. Only recently research on public management as well as public project management was developed and is not yet sufficiently represented in scientific literature.

The management of public projects in comparison with managing commercial projects is fundamentally different and much more complicated (Gasik 2016). Such projects usually have multifaceted goals, and their evaluation similarly has a multifaceted character as well as unique and complex evaluation process which should take into consideration earlier planned goals, principles, sophisticated (traditional or AI-related) methods and models based on collected and analyzed information and knowledge (Grzeszczyk 2017). The product of this evaluation refers to the systematic process of determining the merit, worth, or value of public projects (Scriven 1991).

In processes of building general models of public projects evaluation and innovative projects in the healthcare sector, praxeological theory may be useful, which is universal in nature, and in addition to other applications, it may be used, for example, to build systems indicators and evaluation criteria. Particularly interesting are the general praxeological criteria of evaluation (effectiveness, economicality, and efficacy) that can be the basis for developing criteria useful in specific evaluation processes, e.g., public and healthcare projects.

The main aim of this chapter is to examine the applicability of praxeological theory to the evaluation of innovative projects in the healthcare sector. The specific objective of the study is to propose a set of project evaluation criteria and indicators. The authors undertake research aimed at filling the identified research gap in the use of praxeological theory to evaluate projects, in particular healthcare projects. The topic briefly discussed in the chapter can be successfully continued in further studies concerning larger research samples.

2 Healthcare Projects Management and Evaluation

The term “Healthcare” can be understood as maintaining and restoring health through treatment and disease prevention (Healthcare 2017). The definition that has been in force since 1948 specifies the concept of “health” as a state of complete physical, mental, and social well-being, not just the absence of disease or disability (WHO 2017).

The definition of healthcare projects was adopted as a set of projects whose essence is research, development, and innovation in the field of healthcare, medicine, both public (governmental) and private (implemented by enterprises). The clinical activities can include clinical trials whose goal is to broaden medical knowledge related to treatment, diagnosis, and diseases prevention (U.S. National Library of Medicine 2017). In addition to clinical study, the essence of which is to determine the safety and effectiveness of therapy, there are also observational studies that assess the results of treatment in groups of participants (U.S. National Library of Medicine 2017).

R&D is a systematic creative effort that aims to increase the knowledge resources used for new applications, covering the following three activities (OECD 2002):

- Basic research, i.e., experimental work undertaken to acquire new knowledge, especially in the field of explanation of phenomena and observable facts—these activities are only theoretical.
- Applied research, i.e., activities similar to basic research, but, in contrast, they are focused on practical goals and solutions.
- Development works, i.e., activities based on already available knowledge (obtained, e.g., in the course of basic research), the aim of which is to create new or significantly improved products: services, products, processes, and systems.

In the literature on the subject, some examples of problems occurring in the field of R&D projects in healthcare can be found. One of the main reasons for failures in these projects, as in the case of other types of projects (e.g., commercial, production and others), are errors in communication, misunderstanding the needs of customers and services recipients (Simon and Canacari 2012).

Healthcare project management is associated with many challenges and problems to be solved. The most important external stakeholder for organizations operating in the area of healthcare are patients who should be involved in the implementation of healthcare projects, because it allows a better understanding and appreciation of the work of others in the team, and thus leads to a more efficient implementation of the goals (Simon and Canacari 2012).

In healthcare, interactions with entities such as medical schools, professional associations, or suppliers of medical equipment are important in terms of increasing the access of the project team to information and knowledge. Another challenge is the need to assess the value of external knowledge contributed to the project (especially when it concerns product innovation). The experience of the project

manager is also important, which may contribute to reducing costs by discovering new knowledge in research processes, motivating the team for greater creativity, and reducing uncertainty in the commercialization processes (Salge et al. 2013). Project managers should also support the use of transparent evaluation procedures, the reliability of their results, lower subjectivism, and stimulate generation of innovations (Mikulskiene 2014).

Scientific research work, knowledge, and new technologies are an important driving force of economic growth. The strategy of R&D activities undertaken in the public sector and healthcare should refer mainly to the adopted key competences, not include activities that can be carried out by entities operating in the private sector, focus on the implementation of socially beneficial public policy, stay away from commercial interests of the private sector, support the cooperation of scientific units with enterprises, as well as the implementation of interdisciplinary and interregional research (Procca 2008).

The main goals of healthcare projects (e.g., concerning clinical trials or observational studies) should have a clear public and social character. Clinical study is usually aimed at verifying whether treatment or prevention of diseases is safe and effective, and the implementation of this type of research positively influences the progress in science; thanks to these activities, there is a real chance to help scientists find new and better treatments (NIH 2017). There is no standard defining the criteria for the success of R&D projects in medicine and healthcare. In a sense, the praxeological measures of project performance are, for example, seven success factors and rules formulated below (Duke 2015).

Firstly, the implemented or planned projects should be part of a wider, strategic plan. If projects are related to the organization's strategy, it is possible to place them in the hierarchy of priority projects to be implemented and at the same time it is possible to plan appropriate financial resources for their implementation. Secondly, the use of benchmarking makes it easier to plan expenses, while comparative analysis of projects allows reducing the risk of unplanned costs. Thirdly, projects should not be launched until the critical preparatory activities have been completed. Accelerating work and avoiding key tasks (or shortening them, thus reducing the quality of work) causes a high risk of a significant increase in costs and extending the duration of projects. Moreover, the method of selecting the members of project teams is very important. The personnel selection process should not be conducted separately for individual tasks in projects. The integrated approach, consisting in the creation of entire teams cooperating with other teams operating in organizations, saves time connected with the organization of the working group. Another crucial success factor is that team communication should not take place between uncoordinated organizational divisions, called "siloses," as it limits creativity and introduces bureaucratism. An efficiently implemented project should give team members the possibility of effective communication between various sections, departments, and divisions.

What is more, the entire project team should be responsible for the budget, the scope of work, and the schedule for their implementation. For the success of a project, it is important to create responsibility for the work performed as well as

sharing information. Benefits for the performance of projects will be achieved by the joint work of managers and employees in the area of budget preparation and implementation of its necessary changes. Finally, the goals of projects, including their measurable effects, should be clearly communicated to all team members at every stage of work. This will translate into the quality control of the planned products and will help to protect against the closure of projects, not in the form in which it was planned.

In addition to the abovementioned success factors, the skills of the project manager are also important, as well as the appropriate selection of an interdisciplinary team that copes well with the use of multifaceted evaluation criteria and indicators (Payne et al. 2011).

3 Evaluation Criteria and Indicators

In the case of healthcare projects, the evaluation problem is multifaceted; it is not possible to limit evaluation processes to only one criterion (e.g., financial efficiency) and a multi-criteria evaluation should be used. Evaluators should also pay attention to designs of multidimensional approaches that combine qualitative and quantitative benefits as well as financial and nonfinancial means of projects, programs, project portfolio, and levels of enterprises (Glodzinski 2018).

The evaluation criteria make it possible to organize systematic research that supports the improvement, development, acquisition of knowledge, and better understanding of evaluated individual activities, projects, and project collections (portfolios and programs) (Rossi et al. 2004). After defining the evaluation criteria, the data collection plan, set of objectively verifiable indicators (supporting monitoring of progress in projects implementation), and sources of their verification must be also specified.

There is no single standard for setting out the evaluation criteria for R&D projects. The criteria may be, for example, the organizational value (evaluated are aspects such as the impact of projects outcomes on the organization's ability to cooperate in the future), social value (understood as public goods, social value of projects for the city, region, country), professional value (main objectives achieved, acquired competences of researchers and the entire organization), economic value—considered as the creation of new jobs, economic growth, development of innovation (Mikulskiene 2014; Kumar 2004).

In the case of innovative projects evaluation, the following criteria can be applied (Lis 2012):

- The real cost of the project compared to the expected cost
- Time to market the products of the project
- Profitability of the project and return on investment
- Value for shareholders
- The level of technological advancement of the product

Table 1 Groups of R&D project evaluation criteria

Intellectual aspects	Assigning organizational resources	Strategic management
Innovation of the idea	Rationality of the budget (financial feasibility studies, commercial partnership)	Predictability of project completion time
Transparency of goals	Research skills (available human knowledge)	The scope of connections with other projects
Probability of technological success	Available amenities (availability of technologies and materials)	The importance of goals for social needs
The possibility of applying results		Reputation of the project leader and team
The attractiveness of technology		
The suitability of technology		

Source: Based on Mikulskiene (2014) and Kumar (2004)

- The degree of meeting customer requirements (customer satisfaction)
- Number of registered patents and the value from the sale of licenses
- Product quality.

The individual criteria are assigned an appropriate system of measures and weights, which aims at increasing transparency, limiting subjectivism, as well as facilitating the identification of innovative ideas. Criteria can also be divided into certain categories, for example: financial, economic, organizational, technical, strategic and social. Table 1 shows further examples of evaluation criteria for R&D projects divided into three groups.

The European Commission is coordinating the Horizon 2020 program—the largest EU program focused on research and innovation (European Commission 2017b, c). Under this program there is a competition for co-financing activities in the area of “Health, Demographic Change and Wellbeing,” which supports activities that increase the quality of life of older people as well as the development of new, safer, and more effective treatment methods (European Commission 2017d). The following evaluation criteria for projects implemented under Horizon 2020, in some sense, are in line with the praxeological approach (European Commission 2017a):

- *Excellence*—understood as clarity and accuracy of goals, solidity of the concept, credibility of the work methodology, the degree of exceeding the current state of the art (groundbreaking goals, new concepts and products), taking into account the interdisciplinary approach, using the knowledge of stakeholders
- *Impact*—the degree of implementation of the expected effects of projects, increasing the innovative potential, creating new market opportunities, strengthening the competitiveness of enterprises, creating benefits for society
- *Quality and efficiency of the implementation*—understood as the quality and effectiveness of the planned work, the appropriateness of management structures and procedures (risk, innovations), the degree to which knowledge is combined

Table 2 Indicators used to monitor and evaluate selected healthcare programs

INNOMED	InnoNeuroPharm
Number of R&D works carried out	
The number of new, innovative technologies developed	Number of enterprises cooperating with research centers
The number of patent applications filed	
Number of R&D results implemented	
Income from the implemented results of R&D works	
Increased expenditures on R&D compared to the previous year	Revenues from the sale of new or significantly improved products
	Share of employed in R&D activities in general employment
	Outlays (external and internal) for R&D activities incurred by the beneficiaries

Source: Based on NCRD (2017b, c)

(in the case of a consortium), the correctness of the distribution of tasks and the possession of appropriate resources.

In the above case, the evaluation criteria are *ex ante*, as they are applied before the projects implementation, at the stage of submitting applications for co-financing.

INNOMED and InnoNeuroPharm are two examples of programs managed by a Polish institution called National Centre for Research and Development (NCRD, in Polish: Narodowe Centrum Badań i Rozwoju) supervised by Ministry of Science and Higher Education. Both programs are part of the Smart Growth Operational Programme (SGOP) 2014–2020, and their aim is to work in the field of medical engineering technology (including medical biotechnologies in oncology), diagnostics and therapy (including personalized therapy in cancer treatment), manufacturing medicinal products for applications in oncology (NCRD 2017a, b, c) as well as in the field of innovative medicinal products, innovative technologies for the production of medicinal products, innovative diagnostic methods, innovative methods of rehabilitation, development of tools supporting research into medicinal products (NCRD 2017d).

The set of indicators used to evaluate these programs is presented in Table 2. The evaluation is carried out during the implementation of projects and after their completion. In addition, these indicators are used to study project impact and life science innovation, which is up to 5 years.

The indicators used to evaluate the INNOMED and InnoNeuroPharm programs are similar since both are included in one operational program—SGOP. In addition, among the indicators supporting the monitoring and evaluation of projects co-financed from EU funds are: the number of enterprises supported in the scope of conducting R&D work, increase in employment in supported enterprises.

One of the interesting tools used by organizations operating in the healthcare industry is ADLI (Approach, Deployment, Learning, Integration). Approach and Deployment elements are present in the active phase of the project life cycle, while

Table 3 The essence of ADLI tool

Learning	Integration
The scope of the project	Developed policy and procedures
Team and resources	Preparation of electronic version of forms and reports
Measures, analyses, level of knowledge	Preparation of flow diagrams
Organizational barriers	Training of team members
Information system	Providing feedback for team members, manager, and HR department

Source: Based on Murphree et al. (2011)

Learning and Integration relate to the final phase of the project. All these elements, used as a checklist at the stage of project summary, help in evaluating the results of the project. Murphree, Vath, and Daigle propose the use of a checklist (Table 3) before the project finishes and goes to the final evaluation—thanks to this, problems with the project’s organizational efficiency can be solved easily and quickly. The abovementioned tool is used as part of the Lean Six Sigma approach (Murphree et al. 2011).

Previous studies on criteria and indicators of healthcare projects monitoring and evaluation can be considered insufficient. There is a possibility to apply praxeological theory in processes of assessment of healthcare management performance, which allows for taking into account difficult-to-measure features (e.g., people’s attitudes and behaviors, conditions shaped by qualitative factors), and three determinants of praxeological performance: management conditions, managers as a doer, and goals of management (Striker 2014). Human factors are so clearly marked, because praxeology regards activities as a human behavior that is voluntary, conscious, and oriented toward some purposes (Gasparski 1996).

It is worth undertaking a pilot study in this area based on praxeological theory and criteria of effectiveness, economicality, and efficacy for evaluating projects performance. Effectiveness is connected with achieving desired results of projects. Praxeological economicality is a concept similar to efficiency and makes it possible to compare the achieved project outcomes with the input resources. In classical praxeology, efficacy is determined as the difference between acquisitions (favorable project outcomes) and losses (resources used and wastage) (Pszczolowski 1978). Criteria of this kind should take into account not only quantitative aspects, but also difficult-to-measure qualitative factors.

4 Pilot Study and Results

As part of empirical research, a pilot study was conducted in the form of a mini focus group interview (Mini FGI) among the management of one of the Contract Research Organizations (CRO) operating in Poland. Interviews with experts were aimed at

identifying key indicators and evaluation criteria of performance of healthcare projects.

The research used a previously developed list of criteria and indicators for R&D projects, without taking into account the specifics of individual fields (Grzeszczyk and Zawada 2017). As a result of this study, the usefulness of these criteria was confirmed in the healthcare projects evaluation. The research included the following healthcare projects: R&D projects, clinical/observational studies and other public projects in the field of health and medicine.

Experts are the management staff of healthcare projects in one of the CRO. They have over 5 years of experience in managing R&D projects, which are implemented jointly with Polish public scientific units (universities), as well as commercial projects in the medicine and pharmacy industry. Each of the interviewees took part in at least five healthcare projects, including large projects in the field of multicenter clinical research. Positions held by individual persons are: President of the Board, Member of the Board, Director of Operations, Medical Director, Business Development Manager. The meeting of the focus group took place in December 2017 at the headquarters of the CRO.

Focused group interview was carried out in several stages. The first of them introduced participants to the subject of the research and presented the research problem. The definition of particular terms in the field of praxeology was clarified. Subsequently, the research moderator asked all participants to address the criteria and indicators for evaluating the performance of the projects. This part of the conversation was divided into three sections concerning, respectively, the following evaluation criteria: effectiveness, praxeological economicality, and efficacy.

Experts were asked about the extent to which they agree with the statement that the indicators and criteria listed in the table are adequate, important, and useful in practice for the healthcare projects evaluation. The study used a 7-point Likert scale. The result of the Mini FGI and key criteria and indicators are shown in Table 4.

Some of the more important conclusions resulting from interviews with experts are as follows:

1. In the case of research projects, it is often difficult to plan them accurately. For this reason, discrepancies between the assumed schedule and the actual duration of the project should be accepted.
2. The correct monitoring of the research project is of key importance. Delay times should be monitored for individual project phases, but without a precise reference to the overall action plan.
3. In the correct implementation of projects, the experience of projects teams plays a very important role. It should not only have a quantitative nature (measured by the number of previously implemented projects and their values), but also have a nonmeasurable, qualitative character, referring, e.g., to the characteristics of projects managers. They should show a lot of commitment, identify with the accepted goals of projects, and accept them mentally.

Efficacy	Innovations	The level of innovation											
	Territorial range of innovation												
	Stakeholders		1										
	New technologies							1					
	Patents		1					1					1

Source: Own study

4. Innovation is not so important. Many projects in the field of medicine do not consist in the development of new drugs, but in the development of, for example, a new method of treatment, i.e., a new application of existing substances.
5. The development of new utility models and patents is not a very important element either. The patent application requires the publication of quite detailed information about the product in the patent registry after its production and full implementation into business. The patent application enables other interested entities to launch a product with similar features on the market, and as a result may adversely affect the competitive position of the company.

Taking into account the analysis of literature and conducted research, the following evaluation criteria for healthcare projects were formulated:

1. *The set of stakeholders*

Stakeholders are internal and external units involved in the project implementation. The internal stakeholder can include a project team, other employees of the organization, or top management. External stakeholders include customers, suppliers, competitors, business partners as well as social organizations, government organizations and many others. A wide range of project stakeholders, and thus planned project products and outcomes, can have a beneficial effect on the quality of work results. Taking into account the requirements, expectations and suggestions possible for many environments will have a positive impact on the value of the work results. As a measure of the scope of the set of stakeholders, the authors propose the number and diversity of entities.

2. *Quality of external knowledge*

As the existing research results shows (Salge et al. 2013), greater efficiency is characterized by projects that are implemented in accordance with the exploratory approach, i.e., regarding the search for knowledge outside the organization, including in accordance with the philosophy of open innovation. The use of external knowledge and technologies, in contrast to the operational approach, promotes the increase of creativity and accelerates the development of innovative projects products. To assess external knowledge, one can apply the following: analysis of the possibility of using new technologies in other fields of exploitation, scope of patent protection (if applicable), scientific experience (academic titles), and publishing achievement (in the case of human resources).

3. *Transfer of knowledge*

The flow of knowledge and information in the project is in most cases a closed circuit, runs within the organization, between the members of the working group. From the point of view of the efficiency of project implementation, especially of a research and development nature, the correct knowledge management process is important, including its creation, processing (using), and storage. To assess knowledge transfer, it is possible to analyze the knowledge transfer methods present in the project organization, such as a network of links, documentation, instructions, training or databases (knowledge bases). In addition, the assessment of the willingness to share knowledge among team members may help to determine the tendency to creatively search for solutions.

4. *Leader's experience*

The manager, who should have rich professional and scientific experience, is responsible for the success of the innovative project implementation. The manager's knowledge and the ability to communicate with all team members have a significant impact on the smooth implementation of the project. Effectiveness of the manager's actions manifests itself in the ability to overcome problems encountered in research and development processes. Among the measures of experiences, one can indicate the period of professional experience in a managerial position, experience in work at various stages of R&D processes (basic research, industrial research, experimental development work, implementation phase), number of patents obtained or value of completed projects.

5. *Communication*

One of the most important elements of the proper functioning of the project team is proper communication. Good organization of work achieved through clear communication of tasks, freedom of discussion and expressing own opinions, taking into account the opinion of all team members and providing feedback to each other, contributes to reducing misunderstandings, errors and delays in the implementation of research. The aspect of communication quality can also be considered by the number and frequency of meetings of the project group.

6. *Teamwork*

Proper distribution of tasks can significantly contribute to increasing the efficiency of work. When activities are carried out in a collective way, it is easier to achieve the intended effects in terms of budget, quality, and time of project implementation. The quality of team work can be measured by answering the following question: How many processes and activities in the project are performed by a team of employees and what part of the work is entrusted to individual employees? In the case when the effect of the project is to be a new product, the synergy effect is possible with the use of an isomorphic project team structure (Miterev et al. 2017).

7. *Team interdisciplinarity*

The diversity of knowledge and experience of team members can significantly contribute to the improvement of work efficiency, and thus to better project outcomes. An efficient and effective team of people has a much better chance of achieving success when the team members include not only technical staff (researchers), but also professionals in law, finance, management as well as technology developers, bioinformaticians, statisticians, and many others.

8. *Compliance with the plan*

Material and financial schedule and appropriate classification of activities in relation to individual project phases (research phase, development phase, implementation phase) are other key elements of project management of an innovative nature. An important aspect is also proper planning and maintaining compliance with TRL—Technology Readiness Levels. Due to the peculiar character of R&D projects, it is difficult to accurately predict the results of works. Therefore, efficient schedule management significantly influences the success of the project. To assess the degree of implementation of the plan, it is possible to use a measure

of time deviation from the assumed dates of the implementation of successive milestones of the project.

5 Conclusions

The publication briefly presents the contemporary problems of management and evaluation of innovative healthcare projects, which are relevant to the development of the theory and practice of management sciences. The conclusions drawn from the research results make it possible to formulate the statement that it is possible to use the praxeological theory in the evaluation of innovative healthcare projects. The more important results of the conducted research and analyses are formulated key evaluation criteria and indicators for assessing the performance of this type of projects, based on effectiveness, praxeological economicality, and efficacy.

The terminology used in the publication is not unequivocal and equally interpreted by different researchers. The literature of the subject is available in various languages, which makes it more difficult to use uniform concepts. For a better understanding of the ideas referred to in the chapter and further development of research in this area, it is necessary to look for the meaning of the concepts used in certain contexts and applications. In practice, praxeological criteria are rarely implemented in direct form and this is also the case for the innovative healthcare project evaluation.

The proposed criteria and indicators may be a complement to the ones previously used. These problems may be further explored using a larger research sample, which may provide greater credibility to the conclusions. It is also possible to consider expanding the scope of research by experts (research workers in scientific units and universities) as well as worth considering the usefulness in the evaluation processes of various scientific trends of praxeology.

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Business Model and Its Mapping in the Cost Accounting of Polish Enterprises



Marlena Ciechan-Kujawa

Abstract The aim of the chapter is to present the results of the research conducted at the level of mapping the changes introduced in the business model that are reflected in the company's cost calculation. The conclusions from the analysis of business models of over 100 Polish enterprises using the Canvas model were discussed. It was found that changes in business models mainly concern the product offer and market segments. Their character may be related to the life cycle of the organization. It was established which cost accounting models are used by companies. It was shown to what extent a cost account enables companies to assess specific elements of a business model as well as in what areas, changes in the business model have an impact on the modifications of the cost account. The research has shown that companies are aware of the need for changes in the cost accounting in the event of changes in the key components of the business model. However, in most cases companies enter them only into their records of costs required by law. The usefulness of cost models used in practice is assessed highest in the analysis and control of such components of the business model as key activities and resources.

Keywords Business model · Cost accounting · Cost management · Performance evaluation

1 Introduction

The primary functions of a business model are creating values and capturing values (EFRAG 2013). Despite significant differences concerning definitions, one can point to recurring components of a business model, such as the ability to earn money, assets and opportunities, operations, and manner of creating values for customers

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and other stakeholders (for example, Falencikowski 2013; IR 2013). According to the widespread approach (Osterwalder and Pigneur 2010), a business model consists of nine basic elements, which are compatible with the logic of a company earning money: customer segments, value propositions, distribution channels, customer relationships, revenue streams, key activities, key resources, key partnerships, and cost structure.

Customers constitute the most important part of every business model. For this reason special attention needs to be paid to the values proposed for a particular client segment. The proposed values are the reason why customers perceive the offer of a particular company as superior to the offers made by its rivals (Casadesús-Masanell and Ricart 2010; Lambert and Davidson 2013; EFRAG 2013). Dynamic changes in the micro- and macroeconomic environment of enterprises, in particular, in the field of technology, management methods, availability of resources, can therefore inspire and even impose changes in business models. For decades, researchers have been suggesting that the degree of matching of the business model to the current market requirements directly affects the level of the company's competitiveness and the perceived value of its services (Casadesús-Masanell and Ricart 2010; Anthony 2012). The flexibility of its adaptation to changes may be conditioned by both material and nonmaterial factors, such as, for instance, organizational culture, organization's reputation, employee loyalty and competences, and innovation of operations. It should be noted that gaining a lasting competitive advantage is possible due to the implementation of an appropriate combination of assets and skills (Peters and Waterman 1982).

Therefore, it seems that ensuring the adequacy of the business model to the requirements of the market and the company's strategy requires periodic analysis of all its elements, introducing adaptation activities, assessing the effectiveness of changes introduced in the business model and their communication to stakeholders (Trimi and Berbegal-Mirabent 2012, p. 461). The system that provides management information for the planning, evaluation, and control of operations is accounting. Therefore, it can be assumed that the business model and its changes should be reflected in the company's accounting by modifying the applied methods and tools of recording, analyzing, controlling, and reporting activities. In particular, reporting issues have been of increasing interest to researchers in the last decade and are reflected in external reporting standards. Information on the impact of changes in the business model on the company's performance is important for both internal and external stakeholders. Nielsen and Roslender (2015) emphasize that the business model disclosures have significant information potential not only for investors, analysts, or creditors, but also for a wide group of clients, employees, or the public. Therefore, Singleton-Green (2014) argues that despite all the complexity of the companies' operations and their evolution, financial reporting should reflect the business model. However, it should be noted that there is no unanimity among the authors in this regard. A different view is presented, for example, by Gordon et al. (2015), Page (2014).

Karwowski's research (2016) indicates that currently the business model has very little impact on information presented to external stakeholders in the financial statements and the report on operations. It is interesting, therefore, whether it affects the applied management accounting solutions, in particular the cost account being a tool used to manage the costs of the enterprise. The level and structure of costs incurred are a consequence of strategic choices and enable the assessment of the effectiveness of the adopted business model. A properly designed and implemented cost account should enable the enterprise identification of key cost factors, analysis of cause-and-effect relations between the resources used, undertaken activities, and achieved effects, as well as optimization of the structure and level of costs (Ciechan-Kujawa 2005). Therefore, strategic changes in resources, internal and external processes, and distribution channels that require modification of the business model seem to be necessary for mapping in the company's cost accounting.

The purpose of the surveys presented in this chapter was therefore to determine whether:

1. Changes in the business model affect changes in the cost of enterprises and if so to what extent.
2. The managed cost account enables the assessment of specific elements of the business model.
3. There are similarities and differences between the scope of cost accounts in enterprises characterized by different components of the business model.

The research used the business model according to the Canvas model and the conclusions drawn were based on it.

2 Research Methodology and Characteristics of Companies

The research was conducted in the third quarter of 2017. The questionnaire was sent by mail to approximately 750 companies. Responses were obtained from 106 companies; however, 104 properly completed questionnaires were classified to the research sample. Based on that sample of respondents, the statistical part was conducted and the results were compiled. Among the surveyed companies the dominating group were small- and medium-sized enterprises. Production, trade, and service enterprises were considered in the study; however service enterprises were the majority. The vast majority of entities have been operating on the market for over 10 years. The respondents comprise units with local, national, and international coverage. The characteristics of the surveyed companies are presented in Table 1.

Table 1 Characteristics of companies

Specification	Total	
	Number	%
Overall	104	100
Company size		
Small	60	58
Medium	29	28
Large	15	14
Time of operating on the market		
Less than 2 years	23	22
2–5 years	21	20
6–10 years	16	15
More than 10 years	44	42
Type of business activity conducted ^a		
Manufacturing company	24	23
Trading company	19	18
Services providing company	61	59
Range of operations		
Local	39	38
National	36	35
International	29	28

Source: Own study based on the questionnaire survey

^aDominating type of activity

3 Business Models of the Study Enterprises: Similarities and Differences

It should be noted that not only individual elements of the business model, but also their combination ensures the uniqueness of the company and reflects the philosophy of doing business. However, I made an attempt to identify the most common solutions within the groups of enterprises carrying out the same type of key activity: production, trade, and service, as is presented in Tables 2, 3, 4, 5, and 6.

The analysis showed that regardless of the type of business, most companies sell their products to mass customers (Table 2). In value propositions, there are two aspects: price and customization, although trade and service companies pay attention to availability.

Sales are carried out mainly at the company's headquarters, but other channels are also used: in production companies—intermediaries, in retail—own retail stores, and in service shops—the Internet (Table 3). Relations are built with clients by supporting them on an individual basis.

Table 2 Customer segments and value propositions in business models of the study enterprises

Specification	Manufacturing (%)	Trading (%)	Services (%)
Customer segments			
Mass client	59	65	50
Niche client	36	41	21
Specific customer segments (based on gender, age, education, financial situation)	5	24	22
Different diversified segments	27	18	21
A multilateral platform for exchanging goods and information	0	12	3
Other	5	0	0
Value propositions			
Attractive price	68	71	59
New on the market	32	41	19
Originality of the product	41	41	29
Adapting the service product to the needs of clients	73	53	60
Lower risk of purchase, use, possession	18	12	7
Availability	41	59	50
Innovative project	45	12	24
Lower costs	36	0	12
Higher efficiency	9	18	5
Recognizable brand and status	27	41	43
Convenience and usability	9	29	33
Other factors	4	6	3

Source: Own study based on the questionnaire survey

^aBold values—the elements indicated by at least half of the respondents in a given group

The main source of revenues is the sale of products and standard services as well as sales on individual orders (Table 4). Very rarely enterprises use more innovative sources of revenue, such as, fees for using the service or product, subscription, or rental and leasing.

The largest differences were identified in the key resources identified by the companies, although it is surprising that the surveyed companies (in all groups) are very aware of the importance of intellectual capital (Table 5). Outsourcing is applied least frequently in business models of trading companies.

In addition to the traditional accounting cost account required by law, other solutions are used infrequently, as is shown in Table 6. In general, only the surveyed trading enterprises mostly use tools enabling the study of fixed and variable costs,

Table 3 Distribution channels and supplier–buyer relationships in business models of the study enterprises

Specification	Manufacturing (%)	Trading (%)	Services (%)
Distribution channels			
Sales at the company's headquarters	82	71	60
Own retail stores	23	47	14
Foreign retail stores	23	24	16
Cast	5	12	3
External independent brokers	55	24	29
Internet platform	32	24	47
Other	14	6	3
Supplier–buyer relationships			
Personal support	59	65	78
Dedicated customer caretaker	59	47	31
Self-service system	18	24	12
Co-creation of a product or service	27	18	17
Social media (e.g., on industry websites)	27	47	31
Other	0	0	0

Source: own study based on the questionnaire survey

^aBold values—the elements indicated by at least half of the respondents in a given group

Table 4 Revenue streams in business models of the study enterprises

Specification	Manufacturing (%)	Trading (%)	Services (%)
Sales of services/standard products	55	82	67
Sales of services/products on individual order	86	53	53
Sales of company assets (e.g., machinery, equipment, buildings, land)	0	0	2
Fee for using the service or product	14	12	40
Subscription	0	12	3
Rental and leasing	0	0	3
Licensing	14	0	3
Commissions for brokerage	9	0	14
Advertising	0	12	14
Financial income on investments	27	6	3
Other	0	0	0

Source: Own study based on the questionnaire survey

^aBold values—the elements indicated by at least half of the respondents in a given group

and one-third of them the account enabling the determination of product, assortment, and department margins. Both solutions are also used by manufacturing companies, but definitely less often. Only less than 30% of the service companies surveyed, as an additional source of knowledge about costs, use variable cost accounting, and six enterprises activity-based costing.

Table 5 Key resources and partnerships in business models of the study enterprises

Specification	Manufacturing (%)	Trading (%)	Services (%)
Key resources			
Real Estate	18	12	34
Machines	73	53	34
Means of transport	55	47	24
Licenses, patents	41	41	41
Human resources	82	76	67
Relations with clients	59	59	72
Internal organization	23	24	28
Brand, image	36	29	59
Financial resources	18	29	26
Other	0	0	0
Key partnerships/outsourcing			
Yes	45	65	40
No	55	35	60

Source: own study based on the questionnaire survey

^aBold values—the elements indicated by at least half of the respondents in a given group

Table 6 Accounts additionally used outside the traditional full cost account in business models of the study enterprises

Specification	Manufacturing (%)	Trading (%)	Services (%)
Variable cost accounting (division into variable and fixed costs)	45	59	29
Coverage margin calculation (allowing to determine product, assortment, and department margins)	18	35	0
Activity costs accounting (ABC)	0	0	10
Target costing	0	0	0
Kaizen costing	5	0	2
Quality cost accounting	0	0	0
Other	0	0	0

Source: own study based on the questionnaire survey

^aBold values—the elements indicated by at least half of the respondents in a given group

4 Changes in the Business Model and Their Mapping in the Cost Accounting

Over 60% of the 104 surveyed companies introduced changes in their business models. The changes were carried out mainly by large companies that have been operating on the market for over 6 years, manufacturing ones and operating internationally. Most often, enterprises pointed to changes in 2–3 elements of the business model, in particular, customer segments (33 responses) and the range of products (46 responses). Almost 40% of the changes also concerned the method of distribution (25 cases) and company resources (24 cases). Changes in other

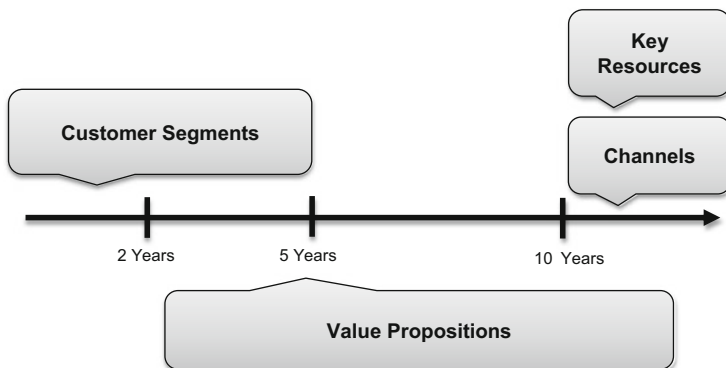


Fig. 1 Changes in the business model during the functioning of the enterprise. Source: Own study based on the questionnaire survey

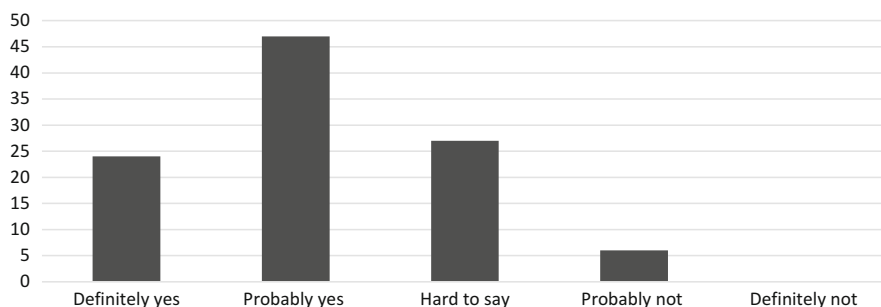


Fig. 2 Should the change in the business model affect the modifications of the cost account? Source: Own study based on the questionnaire survey

components of the business model have been carried out less frequently. Modifications of the relationship between the supplier and the buyer were carried out by 18 of the surveyed companies. Process outsourcing was implemented in 15 organizations. Changes in the structure or method of obtaining the main revenue streams were indicated by 13 enterprises.

A more detailed analysis allows us to conclude that the scope of changes introduced in the business model has some relation to the length of the company’s life cycle (Fig. 1). In the initial period of operation, significant changes occur primarily in the structure of customers. This phenomenon is visible in business units that operate on the market below 5 years. With the increasing time of the company’s operation on the market, large changes in the range of the product are observed. In addition, the resources and distribution channels are subject to modification in companies with long-term market activity.

Most respondents indicated the “probably yes” answer to the question of whether changing the business model should affect the modification of the cost account (Fig. 2). The average is 3.82, and the median is 4.

In the study group no statistically significant relationships were found between the respondents' awareness of the necessity of mapping the business model in the cost accounting and the size of the enterprise as well as the scope and the time of its operation. Spearman's (ρ) correlation coefficients were 0.1–0.26, and were the highest for the growing size of the enterprise. However, it was identified that with the increasing respondents' awareness of the necessity of mapping the business model of the enterprise in the cost calculation increases their critical assessment regarding the adequacy of the applied cost calculation to assess the effectiveness of the adopted business model. Spearman's rank correlation coefficient (ρ) = 0.51, which shows a moderate positive correlation between variables.

Of the 64 companies that modified the business model, 75% (48 cases) declared that they also made changes in cost accounting. However, a detailed analysis indicates that these changes were quite limited and concerned only the change in the type of costs incurred (in the system of general costs). Only in the group of manufacturing enterprises one can notice deeper changes that allow cost analysis depending on the business areas and cost centers.

It can be also noticed that in the surveyed group of enterprises, regardless of the type of change in the business model area, the changes were reflected mainly in the natural classification of expenses groups, as is presented in Table 7. However, no more than 50–60% of the units considered the implementation of changes in the records as necessary. More comprehensive changes, though in a smaller group of enterprises, were introduced in the case of changes in the business model concerning the structure or method of obtaining the main revenue streams, the type of relationship between the supplier and the buyer, and process outsourcing.

Respondents show differentiated opinions about the issue if the necessity of changes in the current cost accounting in order to better evaluate the effectiveness of the adopted business model, as is shown in Fig. 3.

In the opinion of the majority of surveyed enterprises, the current cost account enables the best assessment of the resources of activities, and its least usefulness is indicated in the assessment of clients and business partners.

5 Conclusion

Based on the questionnaire survey conducted, the following conclusions can be drawn:

1. Most of the enterprises examined use the traditional business model. Innovative elements in business models are used rarely.
2. The criterion, for the most diversifying elements of the business model, is the type of business. The differences mainly concern the following; key resources, value propositions, and distribution channels.

Table 7 The scope of mapping in the cost account of the changes introduced in the business model

The area of change introduced in the business model		The scope of mapping changes in the cost accounting (number of responses)									
Type of changes in the business model	Number of enterprises introducing changes	Natural expense classification	Functional expense classification	Classification of cost centers	Classification of direct and indirect costs	Classification of fixed and variable costs	Classification of controlled and uncontrolled costs	Classification of tax deductible costs	Others classification for decision making		
Customer segments	33	18	6	5	2	3	1	2	2		
Value propositions	46	26	11	9	4	4	0	2	3		
Distribution channels	25	13	7	7	2	0	2	2	2		
Supplier-buyer relationships	18	11	8	7	3	2	0	2	2		
Revenue streams	13	5	4	6	0	2	1	3	2		
Key resources	24	14	8	6	5	2	1	3	3		
Key partnerships/outsourcing	15	8	6	3	0	2	0	2	1		

Source: Own study based on the questionnaire survey

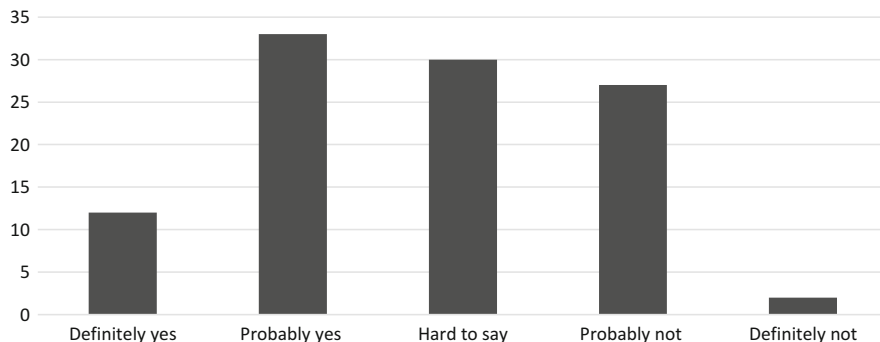


Fig. 3 Do you need changes the current cost accounting to improve the effectiveness of the assessment of the current business model? Source: Own study based on the questionnaire survey

- Changes in business models mainly concern two elements: the product offer and market segments. Their character can be related to the life cycle of the organization.
- The companies studied are aware of the need of changes in cost accounting, but only introduce them in the basic cost records. More comprehensive changes have been introduced by manufacturing companies, in particular in the case of changes in the business model concerning the structure or method of obtaining the main revenue streams, the type of relationship between the supplier and the buyer, and process outsourcing.
- The adequacy of the applied cost account for the assessment of individual elements of the business model is assessed differently. The highest usefulness is indicated in the assessment of activities and resources, which is surprising, especially taking into account the fact that management accounts (the variable cost account, ABC) are rarely used.

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Use of Financial Analysis in Operational and Strategic Management in Practice of Polish Business



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Abstract An important element of business management is systematically conducted financial analysis based both on financial statements and accounting data. The aim of the article is to present the approach of Polish enterprises toward the use of financial analysis in operational and strategic management. The article presents the results of a survey carried out on a group of 248 enterprises. The research carried out concerned the financial statement analysis and the accounting data financial analysis. The originality of the research was influenced by the fact that apart from examining the use of particular analytical areas, their usefulness for managers was additionally checked. The data were analyzed within the following categories: the type of business activity conducted, company size, and range of business operations. The results of this research have shown that the decision-making process in operational and strategic management, based on financial analysis, is more of an art than science.

Keywords Financial analysis · Operational management · Strategic management · Financial statement analysis · Accounting data financial analysis

1 Introduction

In a contemporary enterprise, among various information that is used in making operational and strategic decisions, analytical information is of particular importance. The financial analysis, which serves as a basis of economic analysis, focuses on the analysis of company's financial situation. Despite the fact that financial statements are the main source of financial analysis, managers often use accounting data financial analysis. The purpose of evaluating a company's performance is to assess the company's actual condition, which is essential for its managers to be able

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M. H. Bilgin et al. (eds.), *Eurasian Business Perspectives*, Eurasian Studies in Business and Economics 12/2, https://doi.org/10.1007/978-3-030-35051-2_8

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to make decisions which are a vital prerequisite for successful management of a company (Pur et al. 2015).

Analytical information in an enterprise can effectively identify a variety of risks connected with conducting current operations and its continuation in the future, which is a condition for rapid response (Ciechan-Kujawa 2017). Financial analysis is divided into analytical areas. Analytical information from the analysis of financial liquidity, analysis of the ability to generate revenues, cost level analysis, profitability analysis, and debt analysis can be used to varying degrees in both operational management and strategic management. It depends on the needs of the company. Financial analysis is a process, the purpose of which is to assess the current one and the past financial situation of the company. An important element is to estimate and predict the conditions in future and the subsequent operations of a company. This view has been supported by Bernstein (2002). However, Helfert (2003) believes that financial analysis is a process that assists in answering questions that arise in the course of company management. The prospective nature of financial analysis, which uses analytical information in forecasting different scenarios of unit's financial development in short and long term (taking into account external and internal operating conditions), supports business management at the operational level as well as strategic planning and long-term decision-making (Ciechan-Kujawa and Goldmann 2016, pp. 133–134). Therefore, an important element of managing an enterprise is conducting systematic financial analysis, based both on financial statements and data from account books. The objective of the chapter is to present Polish companies' approach toward the use of financial analysis in operational and strategic management. The research carried out concerned the financial statement analysis and the accounting data financial analysis. The originality of the research was influenced by the fact that apart from examining the use of particular analytical areas, their usefulness for managers was additionally checked, and the results, for a better inference, were also analyzed in the following categories: the type of business activity conducted, company size, and range of business operations.

2 Research Methodology and Characteristics of Companies

The research was conducted in the third quarter of 2017. The questionnaire was sent by mail to approximately 2000 companies, operating throughout Poland, selected in a purposeful manner. The criterion for selection was preparation of financial statements. Responses were obtained from 304 companies, 248 of them were correctly completed and classified to the research sample, which was compiled and served as the basis for the statistical part.

Among the companies surveyed, the dominating group were the enterprises providing services (48%), followed by manufacturing companies (33%) and trading companies (19%), presented in Table 1. The vast majority of respondents (75%) are companies that have been present on the national market for more than 10 years

Table 1 Characteristics of companies

Specification	Total	
	Number	%
Overall	228	100
Type of business activity conducted ^a		
Manufacturing company	133	58.33
Trading company	40	17.54
Services providing company	55	24.12
Time of operating on the market		
From 1 up to 5 years	10	4.39
From 6 up to 10 years	19	8.33
More than 10 years	199	87.28
Range of operations		
Local	26	11.40
National	92	40.35
International	110	48.25
Company size		
Small	42	18.42
Medium	90	39.47
Large	96	42.11

Source: Own study based on the questionnaire survey

^aDominating type of activity

(38%), then those operating on local markets (33%) and international markets (29%). Nearly half of them are small (45%) and medium-sized (34%) enterprises.

3 Financial Statement Analysis and Accounting Data Financial Analysis

About three-quarters of the examined companies use financial analysis in operational and strategic management. The results show (Table 2) that the use of financial analysis is slightly higher in operational management when compared with strategic management, the Likert scale prevails. This shows that fewer enterprises use financial analysis in strategic management. However, if they do, its usefulness is higher in strategic, than in operational management.

Comparing the use of financial analysis in operational and strategic management, conducted on accounting data and financial statements, the use of the latter is slightly higher, particularly in operational management. When comparing the same issue in terms of levels of usefulness, the results show that the abovementioned levels are higher for accounting data financial analysis, particularly in strategic management.

The obtained results were then analyzed according to the following categories:

- The type of business activity (Table 3).
- The size of enterprise (Table 4).

Table 2 General results: financial statement analysis and accounting data financial analysis in operational and strategic management

Specification	Total		
	Number	% (Yes)	Likert degree
Overall	248	100	1-5
Use in operational management			
Financial statement analysis	197	79%	4.36
Accounting data financial analysis	189	76%	4.48
Use in strategic management			
Financial statement analysis	191	77%	4.39
Accounting data financial analysis	181	73%	4.72

The gray boxes in the table show the highest results
 Source: Own study based on the questionnaire survey

Table 3 The results of the type of business activity: financial statement analysis and accounting data financial analysis in operational and strategic management



Specification	Manufacturing company		Trading company		Services providing company	
	% (YES)	Likert degree	% (YES)	Likert degree	% (YES)	Likert degree
Use in operational management						
Financial statement analysis	78%	4.34	70%	4.27	84%	4.40
Accounting data financial analysis	77%	4.52	68%	4.44	79%	4.46
Use in strategic management						
Financial statement analysis	75%	4.33	77%	4.19	78%	4.50
Accounting data financial analysis	75%	4.41	72%	4.29	72%	4.57

The gray boxes in the table show the highest results in each type
 Source: Own study based on the questionnaire survey

– The range of business activity (Table 5).

Taking into consideration the type of business activity, manufacturing companies use financial analysis more extensively in operational than strategic management. The level of usefulness is subsequently higher in operational management. On the contrary, trading companies use financial analysis more extensively in strategic than operational management. However, the level of usefulness is higher in operational

Table 4 The results of the company size: financial statement analysis and accounting data financial analysis in operational and strategic management

Specification	Small		Medium		Large	
	% (YES)	Likert degree	% (YES)	Likert degree	% (YES)	Likert degree
Use in operational management						
Financial statement analysis	78%	4.14	80%	4.40	83%	4.56
Accounting data financial analysis	70%	4.27	79%	4.52	87%	4.69
						
Use in strategic management						
Financial statement analysis	74%	4.25	77%	4.45	83%	4.56
Accounting data financial analysis	67%	4.69	73%	4.62	87%	4.69
						

The gray boxes in the table show the highest results in each type

The arrows in the table show the direction of the increase in results

Source: Own study based on the questionnaire survey

Table 5 The results of the range of operations: financial statement analysis and accounting data financial analysis in operational and strategic management

Specification	Local		National		Internacional	
	% (YES)	Likert degree	% (YES)	Likert degree	% (YES)	Likert degree
Use in operational management						
Financial statement analysis	84%	4.40	77%	4.31	76%	4.38
Accounting data financial analysis	78%	4.42	73%	4.43	78%	4.61
Use in strategic management						
Financial statement analysis	75%	4.44	81%	4.32	75%	4.43
Accounting data financial analysis	71%	4.80	70%	4.65	79%	4.74

The gray boxes in the table show the highest results in each type

Source: Own study based on the questionnaire survey

management. With regard to service enterprises, financial analysis is more frequently used in operational than strategic management. Nonetheless, the level of usefulness is higher in strategic management.

While comparing the size of enterprise, the use of financial analysis conducted on accounting data and financial statements in operational and strategic management increases along with the size of an enterprise. This is not surprising since the size of the company is considered to be an important issue in determining the nature of the relationship for the enterprise in its operational environment and beyond (Abiodun 2013).

The level of usefulness of financial analysis in operational and strategic management increases along with the size of enterprise as well, excepting the situation when the level of usefulness of accounting data financial analysis in strategic management conducted by small enterprises, is on the same scale as in the large ones. This proves that small enterprises want to optimize their long-term activities based on account books data more frequently than the medium-sized ones.

Analyzing the type of range of operations, the results are diversified. One can conclude that the level of usefulness of financial analysis in operational and strategic management conducted in local and national enterprises is at a similar level and is higher than in national enterprises.

4 The Role of Analytical Areas in Operational and Strategic Management

The study of the use and usefulness of individual analytical areas in operational and strategic management has shown that (Table 6).

Table 6 General results of the use of analytical areas in operational and strategic management

Specification	Total		
	Number	% (Yes)	Likert degree
Overall	248	100	1–5
Use in operational management			
Analysis of financial liquidity	209	84	4.34
Analysis of the ability to generate revenues	163	66	4.33
Cost level analysis	215	87	4.41
Profitability analysis	189	76	4.33
Debt analysis	190	77	4.21
Use in strategic management			
Analysis of financial liquidity	205	83	4.38
Analysis of the ability to generate revenues	173	70	4.42
Cost level analysis	207	83	4.51
Profitability analysis	184	74	4.41
Debt analysis	186	75	4.25

Bold values in the table show the highest results

Source: Own study based on the questionnaire survey

The highest use and level of usefulness in operational management occurs in the cost level analysis, following the analysis of financial liquidity. Cash and cash equivalents constitute a very important element for entities, since in the short term it is not profits gained, but own financial means that are most important. The liquidity requirement of a company depends on the peculiar nature of the company (Owolabi and Obida 2012). In strategic management, only the use of analysis of the ability to generate revenues is increasing. The use of other analytical areas decreases.

In strategic management, the highest level of usefulness is observed in the analysis of the cost level. The liquidity and profitability goals are contradictory to each other in most management decisions (Niresh 2012). The challenge is to achieve the desired compromise between liquidity and profitability (Raheman and Nasr 2007). In operational management, financial liquidity should be more important than profitability. In the case when the company is not profitable in the short term but is characterized by good financial liquidity, it has the potential to further development and for improving its performance. However, in strategic management, profitability should be more important because of its lack in the long term will result in lacking financial liquidity (Goldmann 2017, p.104).



Considering the type of business activity, presented in Table 7, manufacturing enterprises are marked as the ones with the highest average use of particular analytical areas in operational and strategic management. Cost level analysis in operational management is vital for manufacturing enterprises. Service companies are characterized by the highest level of usefulness of adopting particular analytical

Table 7 The results of the type of business activity conducted with regard to the use of analytical areas in operational and strategic management

Specification	Manufacturing company		Trading company		Services providing company	
	% (Yes)	Likert degree	% (Yes)	Likert degree	% (Yes)	Likert degree
Use in operational management						
Analysis of financial liquidity	86	4.27	87	4.17	82	4.46
Analysis of the ability to generate revenues	72	4.38	55	4.08	66	4.38
Cost level analysis	89	4.46	81	4.29	87	4.42
Profitability analysis	80	4.34	83	4.13	71	4.41
Debt analysis	81	4.23	70	3.85	76	4.32
Use in strategic management						
Analysis of financial liquidity	86	4.27	87	4.20	78	4.53
Analysis of the ability to generate revenues	72	4.40	72	4.24	68	4.52
Cost level analysis	88	4.46	79	4.30	83	4.62
Profitability analysis	79	4.16	83	4.28	68	4.46
Debt analysis	79	4.20	72	4.13	79	4.42

Source: Own study based on the questionnaire survey

Table 8 The results of the company size conducted with regard to the use of analytical areas in operational and strategic management

Specification	Small		Medium		Large	
	% (Yes)	Likert degree	% (Yes)	Likert degree	% (Yes)	Likert degree
Use in operational management						
Analysis of financial liquidity	79	4.20	83	4.46	96	4.53
Analysis of the ability to generate revenues	61	4.12	64	4.41	79	4.58
Cost level analysis	82	4.26	86	4.35	98	4.76
Profitability analysis	71	4.20	79	4.48	85	4.32
Debt analysis	70	4.03	80	4.28	87	4.40
						
Use in strategic management						
Analysis of financial liquidity	79	4.30	80	4.40	96	4.48
Analysis of the ability to generate revenues	65	4.23	71	4.55	77	4.58
Cost level analysis	80	4.38	80	4.51	96	4.74
Profitability analysis	68	4.26	75	4.52	87	4.49
Debt analysis	68	4.12	76	4.30	88	4.41
						

The arrows in the table show the direction of the increase in results
Source: Own study based on the questionnaire survey



areas in operational and strategic management. However, trading enterprises use the analysis of financial liquidity in operational and strategic management most.

Examining the type of company size (Table 8), the use and level of usefulness in individual analytical areas in operational and strategic management increases along with the size of the enterprise.

While acknowledging the range of business activity, it is similar, as presented in Table 9. The use and level of usefulness in individual analytical areas in operational and strategic management increases along with the range of business activity.

Trading enterprises use the analysis of financial liquidity in operational and strategic management most often. Examining the type of company size, use, and level of usefulness in individual analytical areas in operational and strategic management increases along with the size of the enterprise. While acknowledging the range of business activity, it remains the same. The use and level of usefulness in individual analytical areas in operational and strategic management increases along with the range of business activity.

Table 9 The results of the range of operations conducted with regard to the use of analytical areas in operational and strategic management

Specification	Local		National		International	
	% (Yes)	Likert degree	% (Yes)	Likert degree	% (Yes)	Likert degree
Use in operational management						
Analysis of financial liquidity	76	4.24	88%	4.43	89%	4.34
Analysis of the ability to generate revenues	55	4.30	71%	4.23	71%	4.49
Cost level analysis	80	4.27	87%	4.41	94%	4.54
Profitability analysis	59	4.29	84%	4.24	86%	4.47
Debt analysis	63	4.27	81%	4.19	88%	4.17
						
Use in strategic management						
Analysis of financial liquidity	72	4.36	85%	4.38	92%	4.48
Analysis of the ability to generate revenues	64	4.40	74%	4.32	71%	4.59
Cost level analysis	75	4.53	87%	4.47	89%	4.53
Profitability analysis	58	4.44	81%	4.28	85%	4.54
Debt analysis	61	4.41	80%	4.23	85%	4.15
						

The arrows in the table show the direction of the increase in results

Source: Own study based on the questionnaire survey

5 Conclusion

The survey shows that about three-quarters of the surveyed enterprises use financial analysis in operational and strategic management. This confirms that financial analysis is the basic decision-making tool in the company. The financial statement analysis is used somewhat more, while the accounting data financial analysis has a higher degree of usefulness. This is probably related to available ready tools for financial analysis. There are more tools for the financial statement analysis than accounting data financial analysis.

The highest use and level of usefulness in operational management occurs in the cost level analysis. In strategic management, also the highest level of usefulness is observed in the analysis of the cost level.

In the category type of business activity: The highest level of usefulness in operational management is the use of the accounting data financial analysis in manufacturing enterprises, whereas the highest level of usefulness in strategic management is the use of the accounting data financial analysis, conducted by service enterprises. The cost level analysis has the highest level of usefulness for them.

The size of the enterprise is the most differentiating category in the use of financial analysis in operational and strategic management. The use and usefulness of financial statement analysis and accounting data financial analysis in operational and strategic management and use and the level of usefulness in individual analytical areas in operational and strategic management increase along with the size of the enterprise.

The process of operational and strategic management decision-making, which is based on financial analysis, is more of an art than science. Zelgalve and Zaharcenko (2012) also took this position. According to them “the results of financial analysis is only the material base for decision-making but much depends on the manager himself or herself—his or her experience, intuition, intellect, logic, the ability to take risks, character, the management talent etc.” But the fundamental thing is, that managers in companies must have knowledge about the use of financial analysis in making operational and strategic decisions, using financial statements and account books data. And how they use it and to what extent it determines the individual characteristics of managers.

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State Information System of Housing and Utilities Sector as a Basis of Network Relationship Management in Russia



Dmitri Pletnev, Olga Fink, and Oleg Dyachenko

Abstract The aim of the chapter is to analyze the current situation with implementation of the state information system of the housing and utilities sector and the prospects of its development in Russia. The authors analyze the impact of state and state participation in the development of network relations. The advantages of the State Information System of Housing and Communal Services (GIS ZhKH) for the participants of the system are analyzed. Actual problems and disadvantages of institutional environment of GIS ZhKH are described. The relationships between actors of GIS ZhKH are summarized; importance on network relationships for the further development of the industry is substantiated. The authors also discuss the role of the state in the network relationship of participants in the GIS ZhKH.

Keywords Network relationship · Network relationship management (NRM) · Housing and utilities sector · Institutional environment · Russian economy

1 Introduction

In the 2010s, thanks to the development of the digital economy and the improvement of information technology, the need to use information in society has increased, as well as its processing in various information systems to optimize management processes in any area. E-government and digital economy are identified as priorities of the Russian development strategy for the period up to 2035. During this period, the program of development of the digital economy and information society will be implemented. First, it involves the use of electronic document management systems and methods of teaching the heads of public administration the e-government technologies.

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The concept of e-government is being implemented in many countries. Therefore, the mechanism of building information relations between the state and society (Bejtlich 2013) is becoming more relevant today. These relations are formed with the help of a variety of information systems, which through ordering social relations are implemented in all spheres of society, even in the housing and utilities sector. It is the housing and utilities sector that plays a significant role in shaping the socioeconomic life of the Russian Federation. In many spheres of public life, modern technologies help to increase the efficiency of interaction between the subjects. Thanks to the achievements of the Industry 4.0, it is possible to record accurately and manage processes in various spheres, including housing and utilities sector.

In order to strengthen control and improve the efficiency of the housing and utilities sector, the introduction of a single payment document or a single receipt and single cash settlement centers was recently considered so that all citizens of the country would receive only one receipt that would indicate all utilities and the amount of payment for them for the past period. This, in turn, will contribute to the reduction of arrearage in payment for utility bills, control of tariffs by the state, convenience of noncash payment, and improvement of service and information transparency. However, the proposal to create a single receipt was not supported by the utilities companies and fully implemented. Nevertheless, the idea of a single receipt was embodied in the form of an electronic single receipt, which can be obtained with the help of a special service—State Information System of the Housing and Utilities Sector (GIS ZhKH). In 2014, on the basis of instructions from the President the Federal Law (2014) was adopted. The law regulates the relations arising in the creation, operation, and modernization of the GIS ZhKH. As a result, a single federal centralized information system has emerged that functions on the basis of software tools and information technologies on the housing stock. The Russian state is oriented toward the modernization of the economy and relations in the housing and utilities sector, which involves new models of interaction between the economic subjects, which requires the development of the concept of creating this model. Total information of all economic processes, without a complete understanding of all subjects, their interests, benefits, and costs, will not bring the results that the state expects to stimulate this activity. This article examines the advantages and disadvantages of the emerging network relationships between firms in the housing and utilities sector based on the GIS ZhKH. The basis of these relations is an effective mechanism of network relations between the state, utilities companies, and the households. The article also discusses the main participants in the processes included in the GIS ZhKH. Today there are not enough works devoted to conceptualization and a systematic view of the ongoing transformations in the information sphere of the Russian economy, and the presented study serves precisely this purpose.

2 Literature Review

The problem of network relations involving the state is in the focus of researches. Policy-makers pay attention to the problem of developing the digital society, using strategies and programs for the development of the digital economy in the States (see Table 1).

In Russia, the Message of the President of the Russian Federation to the Federal Assembly on December 01, 2016 can be considered as the starting point for the development of the digital economy. The intensive development of the digital economy in the world leads to the transformation of economic sectors, as information technologies change business processes, improving efficiency by enlarging the number of the participants. The enlargement of the number of Internet users by 10% will increase GDP growth from 0.4% to 1.9% (Milgrom and Roberts 1990). The development of technological progress is now becoming one of the main policy priorities of the countries, leading corporations, and research centers. In recent years, the digital initiative of the information system development has attracted the attention of the state and firms. In 2011 the exhibition in Hanover presented the results of the development of new principles for the development of German industry based on new technologies and business models (Wahlster and Müller 2013), which are reflected in the development strategy of Germany. Similar developments are presented in other leading countries:

- Strategic plan for the development of industry until 2050 in the UK (UK Government 2018).
- NNMI (2018) for the development of the American network of cooperation between science, industry, and government in the USA (Industrial Internet Consortium).
- French industrial development plan Amcham France (2013), aimed at supporting industrial projects.
- The concept of “robot revolution” in Japan (Tanaka 2017) based on the Internet of Things.

Table 1 Years of adoption of digital economy development programs at the state level in different countries

Year	Country
2000	Denmark
2005	Singapore
2006	Australia
2008	Hong Kong, Great Britain, New Zealand
2009	The European Union
2010	Canada
2012	Malaysia
2013	South Korea
2015	India, Kazakhstan, New Zealand
2016	Russia

Source: Pukha (2018)

- The program “Made in China 2025,” published by the China’s State Council in 2015, which involves the integration of information and communication technologies and industrialization (Lee 2015).

Horák (2016) also confirms that building a digital information system of production leads to a synergetic effect due to productivity growth, increased marketing efficiency, and profit growth allows to increase investment. Roblek et al. (2016) agree that Industry 4.0 can be considered as an objective trend of the development of the main industries and the world economy, as well as management in industrial organizations.

In the digital economy, information becomes a form of capital. Its formation, accumulation, and use require close interaction of the state, business, and society. However, economic advantages are obtained by those states and economic entities that have not only access to information but also to effective technologies for its processing. The qualitative growth of the economy is possible with the availability of technologies that make it possible to estimate the current state of markets and branches as accurately as possible, and also effectively forecast their development and react quickly to changes in the national and world market conditions (see Kuprijanovskij et al. 2016). Russia’s digital economy is far from the world’s leaders in terms of the development level, its share in GDP is 2.1%, Russia is 39th in the world out of 85 (according to WorldBank 2016). The backwardness of Russia from the leaders of the rating is 5–8 years. In terms of infrastructure development level, Russia is the leader among the BRICS countries; however, it is 1.5 times behind the OECD (Organization for Economic Cooperation and Development) average.

For comparison there will be taken some examples of similar foreign experience. According to the data presented in Makovich (2010), the most popular are e-government websites in Sweden, Norway, Singapore and Denmark, England and Japan in this regard have the lowest rates (see Fig. 1). Thus, Russia has announced the rapid development of complex electronic technologies and is actively promoting relevant projects, forcing the regions to meet the stated requirements at the legislative level.

One of the aspects of digitalization is the possibility of building new network relations between the majority of the actors. Snow et al. (1992) proposed a conceptual framework for the study of network relations in the interorganizational interactions. There are a number of works developing this research line today. The importance of using network relationships in systems client relationship management (CRM) is detailed in works by Ritter et al. (2004), Ritter and Gemünden (2003a, b, 2004), and Achim et al. (2006). The need to implement network law in connection with the increasing role of virtual space is justified in Grishina (2017). The purpose of network law is to find methods of legal regulation in the cyberspace of social relations. It should be noted that in the conditions of modern world globalization the legal regulation of network legal relations, rapidly developing under the influence of digitalization, is a factor of stability and the key to the positive dynamics of national statehood. In Castells (1997) is showed the constructive changes associated with the transition to the information society, in which the

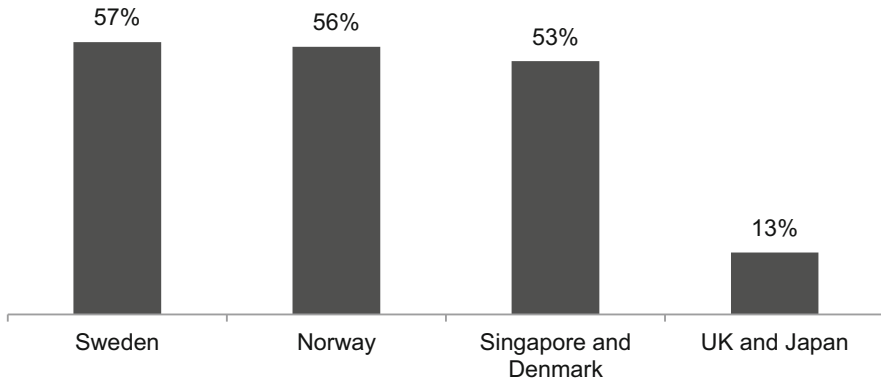


Fig. 1 Popularity of e-government website in some countries. Source: Compiled by authors based on data Makovich (2010)

creation, collection, processing, and transmission of information are the main sources of efficiency of power and network relations. E-Commerce is widely used today. In the rapid development of the computer industry in the world, the rapid growth of information resources creates the necessary material and technological basis for the development of e-Commerce and electronic payments in Russia.

The relevance and necessity of introduction of the GIS ZhKH is caused by the growth of computerization of the households. Such a goal as creating additional competence and education of people is also not ruled out. The basis of network interactions will be based on the communication of utilities organizations and the households, which are already users of Internet systems. In turn, for the state there is additional control over the financial flows of utilities companies, tax deductions, obtaining reliable information on the implementation of state housing programs, and targeted spending of budget funds. In addition, the GIS ZhKH will reduce the number of requests by authorities to the legal entities, ensure the greatest accuracy of statistical information, that is, ultimately make the housing and utilities business the most transparent and open. According to the plan of the legislator, all information about the house, located in the GIS ZhKH, will create a so-called home passport. The above-mentioned advantages of network relations in the GIS ZhKH will significantly reduce transaction costs, increase information transparency, and trust.

In order to increase competition, it is necessary to develop an equal dialog between public organizations, businesses, and the state on key issues and respect the principle of openness and accessibility of information about decisions aimed at maintaining competition for all participants. Uvarov and Uvarova (2017) believe that the GIS ZhKH will contribute to the successful modernization of the economy and social sphere, building effective mechanisms for interaction between society, business, and the state, aimed at coordinating efforts of all parties and sustainable improvement of the welfare of the Russian citizens. However, it should be noted that in addition to attracting the organizations of the GIS ZhKH into this information

system, it is necessary to activate the attraction of ordinary people in whose interests it should function.

3 Data and Methodology

The study of the implementation process and prospects for the development of the GIS ZhKH was carried out on the basis of the analysis of the current regulatory framework of the Russian Federation, including the Gosudarstvennaya Duma of the Russian Federation (1996, 2004, 2014), Ministry of Communications of Russia & Ministry of Construction of Russia (2016). Information on the results of the application of the GIS ZhKH program for the constituent entities of the Russian Federation, as well as the main actors of this program, was obtained from GIS ZhKH (2018).

4 Results

The GIS ZhKH became the single portal in housing and utilities sector of Russia. The state created forcibly a network structure, which unites more than two million legal and physical entities. The GIS ZhKH System combines all companies operating in this sphere: resource providers, overhaul operators, management companies, state supervisory authorities, and resource consumers (firms and households). The authority to obtain and enter information into the system is determined for all users of the GIS ZhKH. The center of this network structure is the state itself. It also has the rights to determine membership in the whole structure. All participants of the network will be able or even obliged to communicate with each other; it especially concerns the interaction “citizen—utilities organization.” The basis of these network relations—information, the ability to get it anywhere and at any time. The positive impact on business results for the companies involved is enormous. At the same time, such a model of network relations can bring threats to business security, which must be eliminated in all possible ways.

The efficiency of network relations now is low. It is evidenced by the existing problems of the GIS ZhKH. First, the actual percentage of the households that has direct access to the Internet and can be a permanent and systematic user of the GIS ZhKH is unknown. All telecom operators in the country—MTS, Vimpelcom, Megafon, Rostelecom (“the Big Four”)—should take care of this. That is, a circle of persons dependent on the GIS ZhKh is not fully defined and has the potential for expansion. Second, in order to ensure the conditions for the content of reliable information in the GIS ZhKH, the system guarantees the topicality of information on the first day of each month. It is only possible to find out the real state of the personal account of the utilities service from the utilities company. This fact sharply reduces the popularity of the GIS ZhKH, except for the responsible part

of the households, which fulfills payment obligations in accordance with the contracts. The numbers of the GIS ZhKH will be clear and comfortable for these people. Third, it is not known how quickly the system will work in full functionality, which was conceived at its creation. Most utilities organizations note the difficulty of working with this software package, which is associated with the labor intensity of entering housing stock, as well as further automating the operation of the system.

Kolokolova (2018) believe that the GIS ZhKH can do more harm than good. For example, in the case of an unformed electronic payment document for the housing and utilities services or the invalid data in it on paper, a citizen may not pay for services. This, in turn, will entail arrears and legal proceedings. Failure of the management company to provide information may lead to a number of negative consequences for it, since the requirement to place information in the GIS ZhKH is licensed. All this will take place against the backdrop of system failures.

The GIS ZhKH is complex. Its functioning causes the relationships not only between authorities, firms, and households, but also the relationship of the households among themselves. Naturally, peoples are not quite ready to work in the system. Taking any legal decisions (for example, the decision of the meeting of homeowners) is problematic because of insufficient qualification in this sphere. There are also problems with the authorities—it will be problematic to find documentation for old apartment buildings and facilities (pumping stations, boiler rooms, etc.), which is necessary, but difficult to restore and digitize. Housing and utilities organizations have responsibilities to place all the information that must necessarily be complete, reliable, and timely brought to the citizens. Failure to perform these duties entails large penalties.

In order to ensure the participants' interest in work of the GIS ZhKH it is necessary, to create conditions for cost-neutral treatment in the system, to define the duties and rights of all participants of the system as precisely and fully as possible. The system should be convenient, accessible, and understandable to a simple citizen. The state and companies have the necessary financial and human resources to improve work in the GIS ZhKH. One of the benefits of the GIS ZhKH for all participants is the fact that the information it contains is recognized as the most truthful and priority, rather than on any other medium.

Statistics on the implementation of the GIS ZhKh on August 5, 2018 is as follows. In total, the system registered 90.7 thousand organizations, 1.5 million apartment buildings, and 18 million houses. At the same time, the lowest degree of the loaded information about dwellings is in cities of federal significance. The obligation to place information in the GIS ZhKH is from July 1, 2019, and amounts on average to 77.9%, while in other regions of the country it amounts to 98.9%. This suggests that in cities of federal importance it is much more difficult to collect and accumulate the information.

The GIS ZhKH unites all the companies operating in this sphere: resource supply organizations, overhaul operators, management companies, state authorities (federal,

regional and municipal), and direct consumers of resources (firms and households). All users of the GIS ZhKH system can be divided into five categories: system operator, services consumers, services suppliers, state authorities, and other organizations.

The service operator performs the functions of administering the system and the website of the GIS ZhKH (creation, operation, and modernization of the system). The services users are primarily individuals using information placed in the system. In addition, legal entities and even state authorities use the information. Placement of information in the system is carried out by the state authorities (information about the housing stock—addresses, streets, and houses), legal entities, individual entrepreneurs, regional overhaul operator, regional operator for the management of solid municipal waste, resource supply organizations, management organizations, property owners association, housing complex, and housing-construction cooperative. The main work is done by the resource supply organizations and management companies that provide the population with basic public services: hot water supply, cold water supply, water disposal, electricity, gas, heating, and other utilities (television, Internet, and maintenance of the pre-home territory). State authorities are obliged to post information on the authorities authorized to post information in the system of officials of public authorities. Other companies obliged to post the information are also involved in the exchange of information. These are banks, unified settlement and cash centers, payment agents, and the Post of Russia.

In the future, it is possible to add new participants of the information interaction, which perform not only the key functions in the interaction of the main participants but also intermediary, additional functions, including (see Fig. 2):

- Supervisory authorities—the prosecution office and the police, to speed up the resolution of disputes arising between the parties of the interaction.
- Licensing authorities.
- Sellers of the equipment necessary for the utilities sector (meters, sensors, gas stoves, boilers for heating, etc.).
- Real estate organizations for advertising new housing.
- Various investors to improve the problematic situations arising among the resource providers.
- The organizations of environmental protection.

5 Conclusions

Digitalization of the economy can improve life quality, make it more comfortable. However, there are certain disadvantages associated with the protection of information, because the digital economy involves the storage of data in electronic form. It is necessary to develop not only the technologies themselves, but also the ways to protect data from various hacking and cyberattacks. Any information interaction faces additional problems: the constant growth of information volumes and the

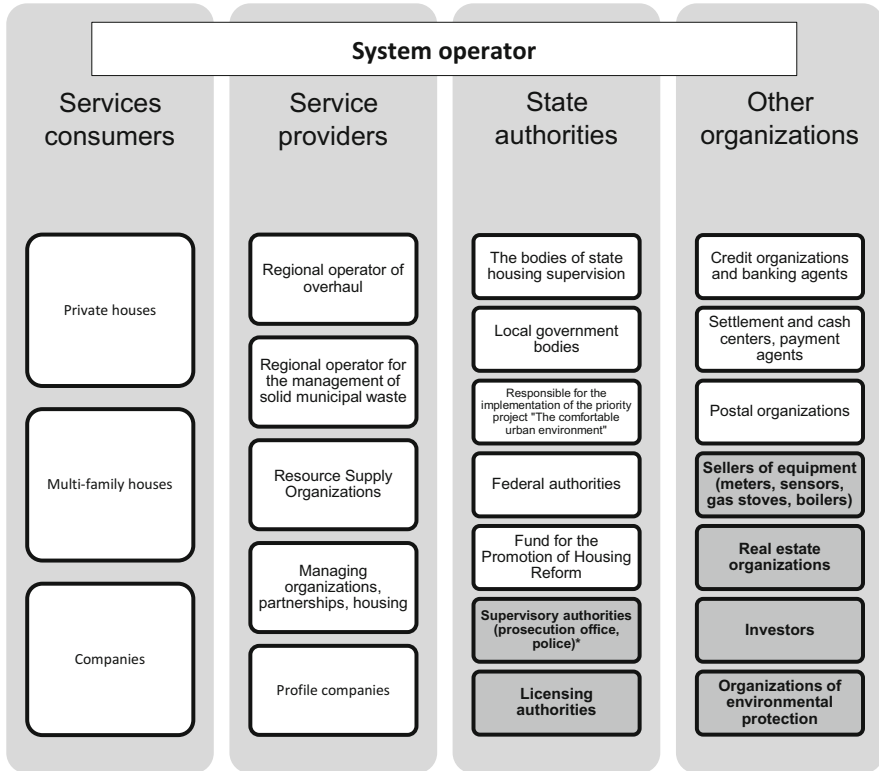


Fig. 2 Current and prospect stakeholders GIS ZhKH. Source: Compiled by the authors. *Note: Asterisk in artwork indicates that prospect stakeholders are in bold and gray*

spontaneity of their appearance, the need for reliability criteria for information, the availability of information search and filtering, information security, the dissemination of incorrect information, the need for authorship, the fact of unloading information and its date, and the source of information.

The social development of society increasingly predetermines the interaction of the state and society in the form of developing and introducing new ideas. In this regard, the importance of network relations in ZhKH is increasing. It will be carried out through mediation and information exchange via the Internet. Internet and the digital economy are an opportunity for dialog and cooperation without any barriers, a platform within which we create something new. Strengthening of the network relations through the use of the achievements of the digital economy contributes to the growth of the efficiency of the interaction of the subjects in the housing and utilities sector raises the trust level between them, creates information transparency. Accordingly, in the absence of intermediaries in the information exchange, it reduces transaction costs, improves service in servicing consumers, and develops the economy of the country and contributes to its sustainability. Also, among the univocal trends is an inexorable movement toward the formation of the digital economy and

the need to forecast further development with the aim of adapting and enhancing the sustainability of all elements of the infrastructure, financial support, state management, and primarily innovative sphere.

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SMEs on the Way to the Smart World of Industry 4.0



Anna Adamik

Abstract Globalization, technological, social, and cultural progress as well as their consequent Fourth Industrial Revolution (IR4.0) shapes a specific environment for modern enterprises. IR4.0 imposes specific challenges and priorities on their behavior, because it creates the so-called SMART WORLD. This observation has raised the following question: How ready are SMEs to be SMART? The main purpose of this chapter is to identify at which stage of preparation for the SMART World are SMEs. The second purpose of the chapter is to identify if and how the size of the enterprise determines the effectiveness of its operation in the age of IR4.0. The studies are based on a literature review and they describe the requirements for organization functioning in the age of IR4.0, a review of international researches and the results of the author's own research on the readiness of SMEs for the SMART World of IR4.0. The findings of the conducted research indicate that the tested SMEs operating in Poland, although increasingly aware of the benefits of the application of modern solutions, still have a too low level of knowledge concerning the requirements of the age of Industry4.0, possess average activity in terms of the use of tools specific to this age, and they are mostly halfway to the SMART world. Furthermore, the bigger the size of a company, the higher the level of readiness for operating in the age IR4.0. At various levels of organizational activity, we can see a growing need for technological, methodical, legal, financial, and social support for such activities.

Keywords SMEs · SMART organizations · SMART SMEs · Age of Industry 4.0

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1 Introduction

An increasing number of papers prove that the twenty-first century is an era of the Fourth Industrial Revolution. Due to its specificity, it is also called Industry 4.0. This revolution transforms working (and living) environments. It hereby represents an “unprecedented fusion” among digital, physical, and biological entities with the purpose of creating social, economic, and environmental advances (Maynard 2015; Kiel et al. 2017). To achieve this integration, traditional industrial machinery and products are equipped with sensors, microprocessors, ports, antennae, and software (Porter and Heppelmann 2015) for data collection and analysis (Pfohl et al. 2015). “Industry 4.0 represents a “new paradigm” in manufacturing, which leads to “swifter and more accurate decision-making” (Kang et al. 2016:124) and to a “completely new approach to production” (Veza et al. 2015: 556). This approach leads to industrial value creation that is not only automated, mostly within single manufacturing plants, but also interconnected between objects, products, and humans, building on the concept of the Internet of Things. So, Industry 4.0 relates to the interconnection of different functions within the supply chain, based on the usage of artificial intelligence (Kagermann et al. 2013; Müller et al. 2018). In this world, two realities merge: Physical Reality and Virtual Reality. In this world, they are also developing network cooperation, virtual networks, new technologies based on computerization, robotization, digitalization (Cyber-Physical Systems), Big Data Analytics, Internet of Things, Internet of Services Interpersonal partnerships (Cooperation, Team Working), Interorganizational partnering (Strategic Partnering, Knowledge Partnering, and Coopetition), and Intermachine connections (Machine-to-Machine Communications, Artificial Intelligence, and Neural Networks) are very important too. Solutions accompanying Industry 4.0 not only change production, logistics, or technological matters, but they also change the perception of currently effective business models. They change the principles of competing and functioning in entire industries and sectors. They constitute the basis of creating the so-called SMART organizations, and for them, the SMART environment, and more. They are the basis for the SMART World, creating new quality of life in an undefined SMART Future. Constituting such a great power, on the one hand, they are an inspiration as well as a potential for new development opportunities and challenges, and on the other hand—a cause for the collapse of many enterprises. SMART solutions require specific knowledge, technology, skills, and relations with the environment. Under such conditions, micro, small, and medium enterprises find themselves in a particular situation. Due to their specificity (limited reach and resource potential), they can face problems and barriers related to functioning in the SMART World more often than larger entities. Taking their role that is essential for most modern economies into account, the author decided to undertake the implementation of two purposes within this chapter. The main purpose of this chapter is to identify at which stage of the preparation for the SMART World are SMEs. How ready are SMEs to be SMART organizations? The second purpose of the chapter is to identify if and how the size of the enterprise determines the effectiveness of operation in the age of

IR4.0. The studies describe the requirements for organization functioning in the age of IR4.0 and are based on a literature review and a review of the results of the author's own and international researches on the readiness of European SMEs for the SMART World of IR4.0.

2 The SMART World Conception

The SMART concept is very capacious and it may refer to many levels and elements of the broadly understood reality and future. This fact raises numerous problems with the description and analysis of this issue to facilitate the implementation of the purposes of the paper, an attempt was made to carry out initial systematization from the perspective of organizations functioning in the SMART World. This was presented in Fig. 1.

The basis of the concept is being intelligent, i.e., SMART. It is the ability to find oneself in any, especially new situation, through subsequent modifications of behavior or an ability to notice interdependencies between facts in a way that directs actions toward the desired goals. It is also a skill of adapting to environmental conditions or adapting the environment to the needs of an individual and select a context which is the most appropriate for satisfying performance (Sternberg and Sternber 2015).

Thanks to their knowledge, activity, perception, skills, cleverness, foresight, creativity, and agility, SMART individuals are able to design a future, which is more attractive than reality, i.e., a SMART future, for themselves and for future generations. A SMART future is where people can search for and eventually find intelligent solutions to their issues in collaboration with others, in support of governments or other entities, or even alone by applying available technologies and knowledge. It is also a state where each individual aspires to be in happiness, good health, doing interesting things that the person is good at as well as enjoy financial and physical security, nurturing and affectionate relationships, living in a nice community, and with opportunities to improve oneself intellectually (Lee and Trimi 2016). Such a future will be possible when the SMART World will incorporate varied, ubiquitous things, including physical objects, cyber services, social people, and cognitive thinking, when two functioning realities will begin to penetrate one another—real (PR—Physical Reality) and virtual (cyberspace, VR—Virtual Reality). Ubiquitous computing will be the most important issue for the SMART World, especially with the motivation of making our lives convenient, comfortable, and informed.

During the development of the SMART World, cyber-physical-social-thinking hyperspace, as a typical system architecture, will be established by involving a novel concept of the “Internet of Thinking” (IoTk). The infiltration of all aspects of physical space, cyberspace, social space, and thinking space will promote the SMART World (Liu et al. 2019; Ning and Liu 2015). This way, the SMART World generates a specific, extremely demanding SMART environment for

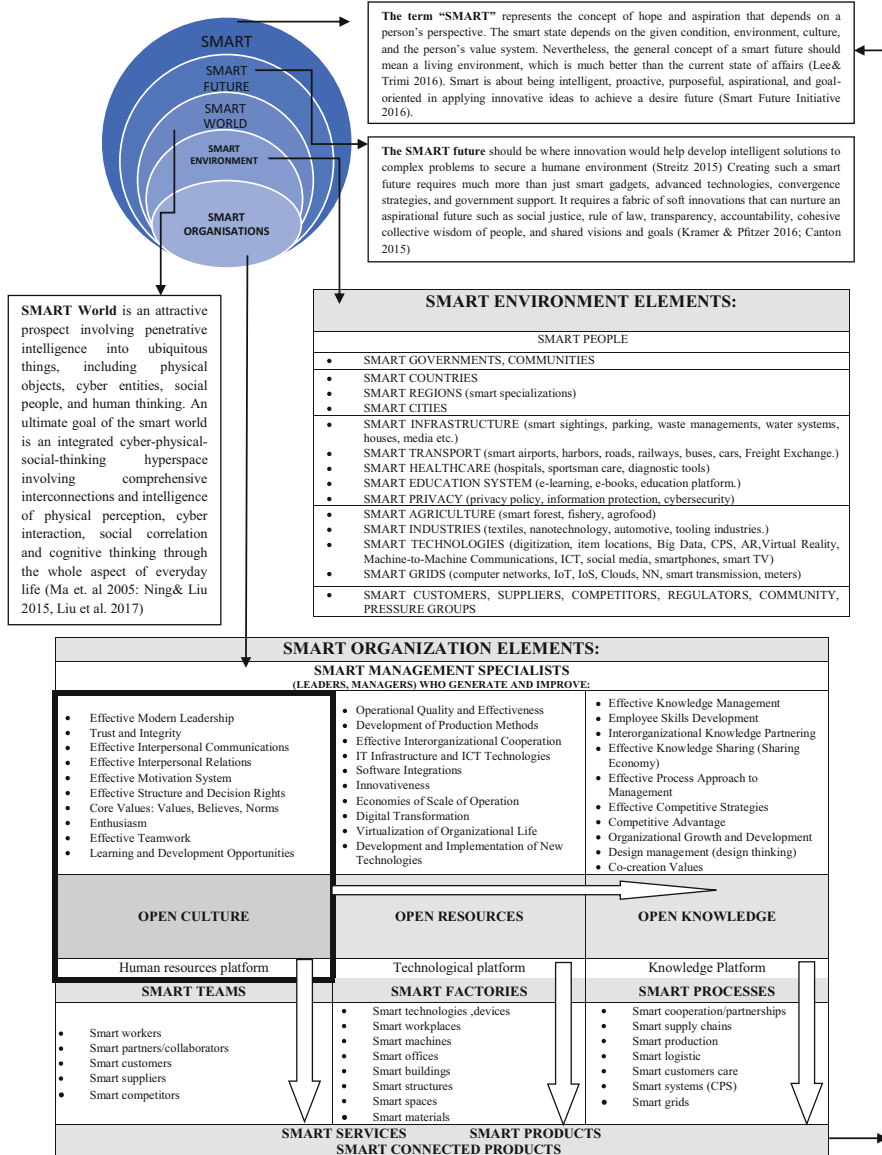


Fig. 1 SMART organization in the SMART World. Source: The author's own compilation

SMART organizations functioning in it (the specific environment and general environment). For them, it constitutes a source of chances and opportunities on the one hand, and on the other hand—a source of threats and requirements—not only current and potential, but also SMART, customers, suppliers, cooperators, investors, but also competitors, and other pressure groups, e.g., regulators—specific

government agencies and representatives, at the local, state and national levels, that enforce laws and regulations affecting the organization's operations function in such an environment. Furthermore, the SMART general environment, consisting of economic, sociocultural, political-legal, technological, and natural environment conditions, generates frameworks and determinants of functioning in the SMART World regardless of individual organizations. Because the general environment consists of all the background conditions in the external environment of an organization, this part of the SMART environment forms a general context for SMART managerial decision-making. Contemporary SMART organizations must be able to function in SMART countries, in SMART regions development based on SMART specializations (McCann and Ortega-Argiles 2016). They should base their business activity in SMART buildings (Sharma 2017), taking advantage of the opportunities and needs of SMART cities and SMART industries as well as technologies (Smart World 2015; Miller 2015; Porter and Heppelmann 2014). All this to create SMART services (Wunderlich et al. 2015) and SMART connected products (Mohelska and Sokolova 2016; Lee and Trimi 2016) in SMART factories making life easier for SMART communities. Technology is a major driving force behind the progress of today's world. SMART technologies have great potential, but their success requires an in-depth understanding of customer (PEOPLE) perception and behaviors. This is how the process of creating the SMART future comes in circles.

3 SMART Organizations: Concepts, Problems, and Challenges of Action

An intelligent organization (SMART) is a certain metaphor and a never-ending form of organizational enhancement of the structure and methods of functioning implemented through a systematic process of learning and using knowledge to survive and further develop (Sydänmaanlakka 2002; Choo 2002; Bratianu et al. 2006). The concept of the SMART organization is based on the reason to harness, in a specific manner, the information age tools and management practices within an organization. The attribute of SMART derived from the manner in which the organization develops and uses knowledge as an integrated resource, combining the human resources expertise and the support offered by the technological platform used (Calin et al. 2015). SMART organization generates a "knowledge space" managed into an info sphere that exceeds the technical domain activity. The info sphere concept refers to a set of IC&T devices, software, human resources, as well as a set of structured data and information directly accessible to a person in its working environment (Carley 2001).

SMART organizations live in the age of Industry 4.0 connected with digital transformation and information technology revolutionizing services and products. "Once composed solely of mechanical and electrical parts, products have become complex systems that combine hardware sensors, data storage, microprocessors,

software, and connectivity in a myriad of ways. These SMART CONNECTED PRODUCTS, made possible by vast improvements in processing power and device miniaturization as well as by the network benefits of ubiquitous wireless connectivity, have unleashed a new era of competition. These new types of products alter the industry structure and nature of competition, exposing companies to new competitive opportunities and threats. They are reshaping the industry boundaries and creating entirely new industries” (Porter and Heppelmann 2014). SMART organizations must look beyond the technologies themselves to the competitive transformation taking place. The basis for such operations should be to create, within the frameworks of such operations, conditions for the development of organizational openness and OPEN CULTURE constituting the base for creating creative and effective SMART TEAMS based on broadly understood cooperation. Openness, by definition, is an overarching concept or philosophy that is characterized by an emphasis on transparency and free, unrestricted access to knowledge and information, as well as collaborative or cooperative management and decision-making rather than a central authority (Baldwin 2003). This means a widely understood ability to function in a changing environment and to cooperate with various partners, i.e., willingness to systematically and consciously create the dynamics of many business processes, including building a competitive advantage of enterprises. Openness refers also to a certain degree of transparency of an organization, seen especially in the context of access to information (e.g., open resources of knowledge) (Peters 2010). Such a culture should be characterized by openness to learning as well as promoting and encouraging flexibility and creativity in order to dynamize a company’s development opportunities. Open Culture is the type of culture characterized by the so-called openness to space, which means openness to change, openness to uncertainty, and openness to flexibility (Purcarea et al. 2013; Albers-Garrigos and Rodriguez Barbera 2012).

With proper resource support (technical, technological, financial, HR, IT, etc.), such teams will be able to build SMART FACTORIES and SMART PROCESSES (Fig. 1). Such operations should not only be supported by OPEN RESOURCES and OPEN KNOWLEDGE of such organizations, but also by the resources and knowledge of their customers, suppliers, and competitors. For SMART ORGANIZATIONS and their TEAMS, the ability to create relationships of cooperation, partnership (Adamik 2016), and co-creation with different partners (Adamik et al. 2018; Adamik and Szymańska 2016), even from other sectors (These are the basis for collaboration, co-designing, and submitting) is particularly valuable. Readiness for cooperation and implementation of innovative changes will open them to new knowledge and possibilities in different areas.

The changing nature of products is disrupting value chains and forcing companies to rethink nearly everything they do, from how they conceive, design, and source products, to how they manufacture, operate, and service them as well as how they build and secure the necessary IT infrastructure (Porter and Heppelmann 2014). So, navigating to the SMART World requires the companies to understand these rules and requirements.

4 SMEs as a SMART Organization-Research Methodology

Specific requirements for the SMART World age of Industry 4.0 (Kiel et al. 2017; Oesterreich and Teuteberg 2016) must be followed and analyzed by small and medium enterprises in a particular manner. Systematically, they are subcontractors, sub-suppliers, or recipients of services and products, often significantly more technologically advanced than large SMART organizations (Airaksinen et al. 2015). Unfortunately, they often have various gaps and limitations in this scope, e.g., lower digitization level, lower automation level, activity in niche markets, financial and human resource limitations, little enthusiasm toward real-time information sharing, and a lack of IT specialists (Müller et al. 2018; Schmidt et al. 2015; Buonanno et al. 2005; Knight 2000). In order to establish which of them constitute the greatest burden, being barriers for SMEs on the path to their effective functioning in the SMART World, a group of 251 enterprises of the type functioning in Poland was subjected to detailed studies. Based on their example, an attempt was made to identify not only the degree in which SMEs are prepared for the SMART World at three operational levels (Human Resources Platform, Technological Platform, and Knowledge Platform see Fig. 1), but also to relate this condition to the scale of operations (the size of enterprises). For this purpose, the studied group was analyzed from the perspective of three groups of enterprises, i.e., micro, small, and medium, essential for the SME sector.

The empirical material was collected in 2015. It was a primary indirect survey using the method of the questionnaire handed out to the respondents. The research tool was a survey questionnaire. The study covered enterprises employing up to 249 people operating in Poland. The respondents conducted commercial and service activities (31.9%), production, trade and service activities (22.3%), service activities (18.3%), retail (16.7%), and wholesale trade (10%). Their range of impact, horizon of strategic planning, as well as opinions on the role of resources from the perspective of their usefulness to build competitiveness were presented in Tables 1, 2, and 3. In each case, medium enterprises reached relatively the highest notes. Micro and small enterprises did not differ significantly in terms of their structure of impact

Table 1 The structure of the range of impact of the studied SMEs

SME	Area	Local	Regional	National	European	International	Global
MM (<i>N</i> = 170)	Supply	58.1	59.9	53.3	7.2	2.4	0
	Sales	71.9	47.9	26.9	3.6	1.8	0.6
S (<i>N</i> = 60)	Supply	61.7	63.3	61.7	28.3	5.0	1.7
	Sales	71.7	65.0	50.0	13.3	5.0	0.0
M ^a (<i>N</i> = 21)	Supply	5	8	13 (61.9%)	6	4	2
	Sales	9	7	12 (57.1%)	7	2	2

Source: The author's own compilation

^aDue to a small number of the group of the studied medium companies, the number—not the percentage—was provided

Table 2 Horizon of planning/strategic thinking in the studied SMEs

Specification	SME (%)			
	Total (<i>N</i> = 251)	MM (<i>N</i> = 170)	S (<i>N</i> = 60)	M (<i>N</i> = 21) ^a
Up to 1 year	21.5	24.5	13.3	3
1–3 years	34.3	34.7	36.7	6
3–5 years	23.1	22.6	26.7	4
Above 5 years	21.1	18.2	23.3	7 (33.3%)
Total	100.0	100.0	100.0	21

Source: The author's own compilation

^aDue to a small number of the group of the studied medium companies, the number—not the percentage—was provided

Table 3 Meaning of resources held for the competitiveness of the studied SMEs

Type of resources		SME (%)			
		Total (<i>N</i> = 251)	MM (<i>N</i> = 170)	S (<i>N</i> = 60)	M (<i>N</i> = 21) ^a
Tangible resources	Financial resources	61.8	53.3	80.0	15 (71.4%)
	Buildings and structures	46.2	33.6	71.7	16 (76.2%)
	Technical infrastructure	55.8	44.4	78.3	18 (85.7%)
Intangible resources	Knowledge about modern management methods and techniques	64.5	56.4	85.0	16 (76.2%)
	Licenses and patents	47.8	38.4	68.2	14 (66.7%)
	Intellectual capital	59.8	49.8	81.7	16 (76.2%)
	Experience	79.3	74.2	88.3	20 (95.2%)
	Strong brand	71.3	65.4	83.3	18 (85.7%)
	Know-how. Production technology	49.8	41.4	65.0	16 (76.2%)
	IT systems	55.4	46.1	71.7	18 (85.7%)
	Access to information	64.9	57.6	83.3	16 (76.2%)
	Relational resources	Relationships with customers	77.7	72.5	71.7
Relationships with suppliers		72.1	67.7	78.3	19 (90.4%)
Relationships with local authorities		55.8	47.4	73.3	16 (76.2%)
Relationships with local community		60.6	54.0	78.3	14 (66.6%)
Relationships with scientific institutions		47.8	42.0	58.3	15 (71.4%)
1	2	3	4	5	6

Source: The author's own compilation

^aDue to a small number of the group of the studied medium companies, the number and not the percentage was provided

(Table 1: Dominating range of supplies: regional and of sales—local) and of the horizon of planning (Table 2: dominating horizon of planning 1–3 years).

Differences between micro and small enterprises occurred in the valuation of the role of various types of resources. In their valuation, small enterprises sometimes equaled medium enterprises in this field, and sometimes they indicated a higher role of some resources (see column 5 Table 3). It particularly concerned intangible resources. All studied groups mostly indicated experience as their key resource.

In the studied group of SMEs, nineteen parameters of SMART organizations were analyzed. The parameters were grouped into three levels essential for the SMART World: Human Resources Platform, Technological Platform, and Knowledge Platform. Each parameter was evaluated at a three-degree scale (1-low, 2-average, 3-high level of implementation).

5 Results and Discussions

Evaluations of six parameters within the first platform (Table 4) aimed at an identification of the level of implementation of OPEN CULTURE among the studied enterprises, and based on the evaluation—the readiness of the studied enterprises to create SMART TEAMS constituting the basis of conscious generation of bases for SMART ORGANIZATION. In this field, all studied groups received above-average notes (average grade 2.3). Relatively, the highest grades were received by microenterprises. It was the only area in which this group achieved a grade of at least an average level of readiness. It may be stipulated that the studied SMEs are already able to efficiently build SMART TEAMS, and a large number of them are already doing so. Relatively, the largest problems are experienced by SMEs in the field of proactivity of operations of such teams (average grade 1.7). It may be stipulated that it results mainly from deficiencies in equipping them with modern equipment and IT hardware. This observation was confirmed by studies conducted by other authors (among others Faller and Feldmuller 2015; Müller et al. 2018; Kagermann et al. 2013). The highest grades were received in this field by entrepreneurship of employees of the studied enterprises (average grade 2.7).

In terms of the evaluation of another six parameters related to the level of OPEN RESOURCES among the studied SMEs, slightly lower results were observed (average grade 2.0). Micro enterprises did not observe an average level of implementation of solutions typical for SMART FACTORIES, mainly due to poor activity in terms of building an info sphere and facilities for new technological solutions. These matters also constituted the largest problem for the studied small enterprises. Only medium enterprises evaluated their OPEN RESOURCES as above average. They also had a high level of evaluations of the pace of development of resources and processes necessary in the SMART World. Therefore, it can be concluded that the size of enterprises is significant when creating efficient SMART FACTORIES. Again, this is confirmed by studies conducted by researchers from other countries (Müller et al. 2018; Kagermann et al. 2013; Buonanno et al. 2005).

Table 4 SMEs readiness to be SMART organizations

Parameters of SMART organizations		SMEs ($N = 251$) assessment scale: 1–3 ^a (%)			
Characteristics	Parameters	Micro ($N = 170$)	Small ($N = 60$)	Medium ($N = 21$)	
Human Resources Platform	1. The ability to predict and adapt dynamically to changes taking place in the environment (or anticipating changes); high capacity of the organization to exploit in real time the opportunities from environment.	Proactive behavior, organizational agility	1 (42.3)	2 (51.5)	2 (71.4)
	2. A vision and development strategy readable and built together by the members of the organization.	The ability to generate a desirable perspective	2 (36.4)	2 (43.3)	3 (47.6)
	3. Leaders capable of co-creating a shared vision and goals with others for collective wisdom and discipline; leaders capable motivate and engage people to contributing to co-creation a smart future.	Smart leadership	3 (45.0)	2 (54.8)	2 (20.6)
	4. High level of creativity, commitment, and internal entrepreneurship among employees.	Intrapreneurship	3 (44.3)	3 (65.0)	2 (34.9)
	5. Organic organization design, not very formal; with flexible rules and policies; structures which can respond to changing situations and uncertainty very promptly (flat,	Flat organizational structures	3 (65.0)	2 (44.8)	2 (20.6)

(continued)

Table 4 (continued)

Parameters of SMART organizations		SMEs (<i>N</i> = 251) assessment scale: 1–3 ^a (%)			
Characteristics	Parameters	Micro (<i>N</i> = 170)	Small (<i>N</i> = 60)	Medium (<i>N</i> = 21)	
	team, network, hybrid structure).				
	6. Partnerships between staff (e.g., independent task forces), business partners, recipients, and other stakeholders.	Proper empowering, trust, and cooperation climate/culture	3 (67.1)	2 (35.0)	2 (20.6)
	The degree of culture openness/Readiness to create smart teams/average assessment		2.5	2.2	2.2
Technological Platform	1. Continuous improvement and optimization of processes (time, cost, quality) and continuous improvement of products and self-assessment.	The ability to development and self-esteem	2 (44.3)	3 (65.0)	3 (44.9)
	2. The ability to reconfigure resources and undertake activities in new areas.	Flexibility, mobility, the ability to decide and act under uncertainty	2 (35.3)	2 (38.3)	2 (33.3)
	3. The focus on the development of human and intangible resources (e.g., experience and skills of personnel, patents, licenses, brand, worked out rules of teamwork, etc.), as well as deciding on creativity, innovation, and contributing to gain a competitive advantage (cooperation, collaboration, partnership, innovativeness).	Continuous development of resources	2 (45.7)	3 (47.0)	3 (35.0)
	4. The focus on flexibility and dynamic	Customer orientation	3 (45.0)	2 (44.8)	2 (30.6)

(continued)

Table 4 (continued)

Parameters of SMART organizations		SMEs (<i>N</i> = 251) assessment scale: 1–3 ^a (%)		
Characteristics	Parameters	Micro (<i>N</i> = 170)	Small (<i>N</i> = 60)	Medium (<i>N</i> = 21)
	satisfaction of customers' needs (CRM systems, software and tools).			
	5. Virtual Reality, Augmented Reality, Neural Networks, Machine-to-Machine Communications, Digital enhancement; software integrations, Cybersecurity, Cyber-Physical Systems (CPS), computer networks, embedded actuators, sensors; Industrial Internet of things (IoT); Internet of Services (IoS), technical solutions of mass customization, innovative methods of use big data (Big Data Analytics) and collect them (Clouds).	1 (60.8)	1 (30.0)	2 (47.6)
	6. Set of IC&T devices, software, human resources, and set of structured data and information directly accessible to person in its working environment.	1 (45.3)	1 (38.0)	2 (34.9)
	The degree of resources openness/Readiness to create smart factories/average assessment	1.8	2.0	2.3
Knowledge Platform	1. The climate supporting education and learning of employees; the transparent system	1 (38.8)	2 (30.0)	3 (47.6)

(continued)

Table 4 (continued)

Parameters of SMART organizations		SMEs (<i>N</i> = 251) assessment scale: 1–3 ^a (%)			
Characteristics	Parameters	Micro (<i>N</i> = 170)	Small (<i>N</i> = 60)	Medium (<i>N</i> = 21)	
	of values and the organizational culture motivating to enhance self-improvement.				
	2. Competences that go beyond the business domain.	Extensive knowledge	1 (38.8)	2 (30.0)	3 (57.6)
	3. Gathering and diffusion of knowledge.	Organizational openness	1 (44.3)	2 (65.0)	3 (34.9)
	4. The ability to continually change (in particular, take up new projects or implement new technologies, e.g. it); experimenting (conducting systematic research, testing prototypes, and solutions).	Activity; organizational culture focused on generating added value	2 (43.7)	2 (53.3)	3 (47.6)
	5. Comprehensive (creative) approach to problem solving.	A coherent generating solutions and decision-making process	2 (35.8)	2 (30.0)	2 (47.6)
	6. Information management (e.g., acquisition of information from the environment, the ability to interpret it, transform it into knowledge, update, expand existing knowledge resources, develop new areas of key competences) and properly use them to quickly modify existing ways of functioning.	Systemic thinking, knowledge management, structured and omnidirectional information flow	1 (44.3)	2 (65.0)	3 (54.9)
	7. Learning based on the experience of	Benchmarking	3 (50.5)	2 (49.7)	2 (31.7)

(continued)

Table 4 (continued)

Parameters of SMART organizations		SMEs ($N = 251$) assessment scale: 1–3 ^a (%)		
Characteristics	Parameters	Micro ($N = 170$)	Small ($N = 60$)	Medium ($N = 21$)
	others (both from successes and failures) and on the basis of previously acquired own experience.			
	The degree of knowledge openness/Readiness to create smart processes/average assessment	1.5	2.0	2.7
	Overall preparation of the respondents	1.9	2.0	2.4
	SMEs readiness to be smart organization and create smart products	2,12		

Source: The author's own compilation

^aWhere: 1—low, 2—average, 3—high assessment

A similar tendency to the one above was observed in terms of the Knowledge Platform. Here, below-average readiness of microenterprises was also observed; above-average readiness of medium enterprises was observed in terms of OPEN KNOWLEDGE. This translated into similar evaluations of their readiness to create SMART PROCESSES. It can be stated that, generally, the studied SMEs are averagely prepared to operate the third of the base platforms for the SMART World (average grade 2.1). The highest efficiency within this field can be observed among the studied enterprises in terms of implementing benchmarking, i.e., readiness to learn through their own experience as well as through the experience of others (average grade 2.3). Micro enterprises developed this ability at a relatively highest level.

Comparing the results from the above three levels, it can be stated that the studied SMEs are averagely prepared to generate SMART PRODUCTS and be SMART ORGANIZATIONS.

6 Conclusions

Summarizing the results of the studies, it can be concluded that the studied SMEs are halfway to the effective functioning in the SMART WORLD. They have gathered certain base facilities, in particular, in terms of Human Resources; however, they lack an appropriate level of investment, in particular, in modern technological, IT, and information solutions. Also, they need to be more open to share knowledge

between organizations and to consciously manage the knowledge gathered; they also need selected procedures for training and developing employees (modern management, including staff management). Although conclusions drawn by Müller et al. (2018), Issa et al. (2017), Szłapka et al. (2017) were made using different methods and for different purposes, they are similar to the conclusions presented above.

The studies conducted on SMEs indicated that the size of an enterprise, or the size of its financial resources and possibilities to invest in technology related to them, HR development, entering broadly understood networks of various natures, are significant for a smooth entry into the SMART WORLD. Although some claim that the SMART WORLD eliminates differences between larger and smaller enterprises to an increasing extent, leveling their opportunities for development and market opportunities, mainly as a result of the intervention of the Internet of Things, mobile technology, and the newest cloud computing (Mohelska and Sokolova 2016), the differences are still significant. The situation differs in various countries and in various sectors; however, if proper HR resources (in particular, SMART MANAGERS and SPECIALISTS) as well as supporting financial resources are missing, it is difficult to develop or purchase, and finally implement and introduce SMART TECHNOLOGY as well as create SMART SERVICES and SMART PRODUCTS (especially virtual CONNECTED). Without it, it is also difficult to attract SMART partners, suppliers, employees, or customers and be successful in the challenging SMART ENVIRONMENT.

In the twenty-first century organizations, the role of an effective implementation of not only SMART TECHNOLOGIES, but also related organizational solutions, is increasing. SMEs that think about development and long-term competitiveness must intensify their involvement in the processes of their implementation. At various levels of organizational activity, we can see a growing need for technological, methodical, legal, financial, and social support for such activities. SMART World is slowly becoming a reality. SMEs must find their place in it as soon as possible. The analyses presented in the chapter can help them in this process. They should also become an inspiration for in-depth research on the issue, especially in the context of tools and methodologies dedicated to the needs of SMEs of the age of Industry 4.0.

In the framework of the research work, the author sought to maintain an appropriate methodological rigor aimed at ensuring a high degree of objectivity and reliability of inference. Despite this, the formulated model and the results of the research are characterized by certain limitations. They mainly result from the inability to specify and assess all factors determining the organizational readiness of SMEs to successfully work in SMART WORLD. For this reason, the focus was on the most important of factors. Therefore, the considerations do not show the entire spectrum of issues, which encourages further research in this area.

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Part II

Marketing

Consumer Engagement in an Online Brand Community



Hanna Kurikko and Pekka Tuominen

Abstract This chapter aims to explore consumer engagement in an online brand community. Consumer engagement includes cognitive, affective, and behavioral dimensions. This qualitative research focuses on the Finnish online forum called Brick Builders. This community is fully fan-based without any company involvement and it includes different age groups and both genders. The data collection is mainly based on netnography with more than 1000 postings and with nearly 200 different poster pseudonyms. However, pure netnographic approach was supplemented by 11 personal interviews and several interactive emails. This research proposes four main empirical findings. First, to create and sustain tight bonds among the members of an online brand community is vital in social networking. Second, to evangelize and justify are relevant thematic sub-practices in impression management. Third, to reinforce involvement in the brand community can be facilitated by community engagement. Fourth, to increase and enhance the consumption of the parent brand is typical in brand use.

Keywords Consumer engagement · Online brand community · Netnography

1 Introduction

Our social worlds have gone digital. Social media involves participation, interaction, and sharing. Wikipedia, Facebook, MySpace, Second Life, and Instagram are examples of interactive communities. Blogs, podcasts, wikis, and RSS feeds are modern forms of social activity. Social media is an umbrella concept that includes also all kinds of different online communities in cyberspace. Online communities are no longer new forms of communication and communities; they have become the status quo, the way that our society simply works (Schembri and Latimer 2016).

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Online and virtual consumer communities are real communities populated with real people (Kozinets 2002; Shang et al. 2006).

The established view of brand management as a linear and exchange-based partnership is no longer entirely valid (Heding et al. 2016). Active discussions about brands in brand communities should be encouraged. Brand community characteristics include social, cognitive, and emotional dimensions. Social identification is vital in brand communities (Hung and Lin 2015).

A brand community is a specialized, non-geographically bound community that is based on a structured set of social relationships shared by admirers of the brand (Bowden 2009; Hollebeek 2011; McAlexander et al. 2002; Muniz and O'Guinn 2001). Engagement can also be characterized by different customer activities and patterns (Fernandes and Esteves 2016; Jaakkola and Alexander 2014).

The motivations for joining a brand community include, e.g., the need to get information about a product or service, to express commitment to a certain brand, and consume something together with others (Narvanen 2013). Recently, based on an extensive literature review Hook et al. (2018) have disclosed different motivations and results for participating brand communities. According to Hook et al. (2018) various motivations for attending brand communities include self-, social-, information-, entertainment-, and technology-related subcategories and results include brand-, brand community-, and social-related subcategories.

Studies in consumer engagement are gaining popularity in the marketing science (Alexander and Jaakkola 2015; Azer and Alexander 2018; Brodie et al. 2011, 2013; Fehrer et al. 2018). The behavioral dimension in consumer engagement seems to be dominant in the marketing doctrine (Gummerus et al. 2012; Hollebeek 2011). Existing research in this area is mainly descriptive or conceptual (Alexander et al. 2018; Li et al. 2018). Our case study contributes to the existing marketing literature by adding empirically proven data to the mainly current conceptual research settings in the area of consumer engagement.

This chapter aims to explore consumer engagement in an online brand community. In order to reach the aim of this case study the structure of this chapter is as follows. First, we lay grounds and elaborate theoretical foundations for the conceptual framework of this study. Second, the empirical data collection and principles for the objectivity of this study are presented. In this second section we emphasize that this empirical study utilizes netnography as the principal method of data creation. Finally, empirical findings and conclusions together with managerial implications are elaborated.

2 Theoretical Foundations for the Conceptual Framework

A sense of belonging motivates members to be part in a brand community. Thematic practices create value in online brand communities (Skalen et al. 2015). Schau et al. (2009) have identified four main thematic practices of creating value. These main

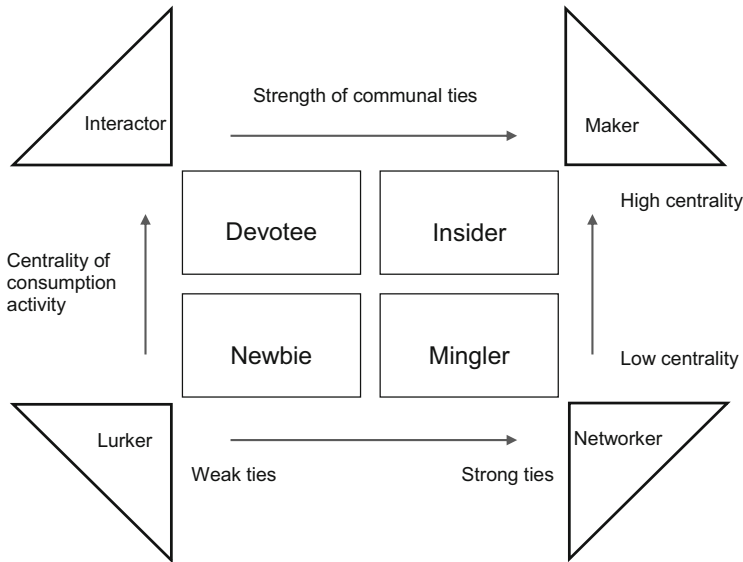


Fig. 1 Different roles of online brand community members (Source: Kozinets 2010, p. 33)

thematic practices include several sub-practices which are elaborated in the empirical part of this study.

The members—or, more specifically, the roles of online brand community members—affect the community’s dynamics. According to Kozinets (2010) these roles include lurkers, networkers, interactors, and makers. These roles are illustrated in Fig. 1.

Lurkers are active observers who learn about a site through initially watching. Networkers will reach out to the online brand community in order to communicate and socialize with other participants in the same community. Interactors are heavily engaged with the consumption activity and they offer activity-related news and other information. Makers are active builders of online brand communities. Newbies, minglers, devotees, and insiders constitute clear groups of community members based on the centrality of consumption activity and the strength of communal ties (Kozinets 1999, 2010).

Consumers are active creators of value. Traditionally, companies have produced products and services while the media have acted as the messenger. Today, value is collectively created by many different stakeholders, for example, via social media and brand communities (Alexander et al. 2018; Hook et al. 2018; Jaakkola and Alexander 2014).

Brands influence positively on strengthening customer relationships, and brand communities strengthen the relationship between consumers even more (Carlson et al. 2008; Hollebeek et al. 2014; Lee et al. 2011). Furthermore, brand communities have an impact on brand equity and brand loyalty (Aaker 2013; Keller 2013).

3 Empirical Data Collection and Objectivity of the Study

This empirical and qualitative case study focuses on an active Finnish online forum called Brick Builders (Palikkatakomo in Finnish). This online brand community gathers together Finnish male and female LEGO builders from all ages. This community is fully fan-based without any LEGO company involvement (Brick Builders 2018). It is also possible to identify in Brick Builders all of Kozinets' (2010) members in the online brand community, namely newbies, minglers, devotees, and insiders.

Empirical data collection in this study is mainly based on netnography. This empirical method is well suitable for marketing research because of the wide range of marketing-related topics found in online communities. Netnography assists to find out what consumers are truly like (Kozinets 2015).

Empirical material in this study includes more than 1000 postings and with nearly 200 different poster pseudonyms. However, pure netnographic approach is supplemented by 11 personal interviews and several interactive emails. After data collection this netnographic study includes the data analysis and the iterative interpretation of the empirical findings.

Kozinets' (2010) ten criteria for objectivity in the netnographic research process were utilized in this study to increase the credibility of empirical findings.

In this study, coherence and rigor refer to how well netnography is understood and utilized to conduct the research. The method and its standards were carefully examined before embarking on the research. Research ethics were also followed by asking permission from the Brick Builders' members to conduct this study. Literacy refers to the degree to which the text recognizes past relevant literature and research approaches. The literature on online brand communities, and netnography was carefully reviewed. The existing theoretical literature and the Brick Builders' forum were reviewed simultaneously.

Groundedness is the criterion that defines how the theoretical framework is supported by the empirical findings. The theoretical implications found in this study are supported by the Brick Builders' writings. Within Brick Builders, several specific questions to the members of the community and close cooperation with a few members further confirmed the principles of this community and helped to increase objectivity. Innovation creates new ways of understanding different systems and actions. The phenomenon of the online brand community is quite new. Therefore, this study seeks to extend current knowledge and create new material. Resonance concerns empathy, compassion, and understanding others. Brick Builders is made by and for humans, and therefore, the texts are analyzed literally. Verisimilitude means that the investigator must feel a certain connection to the community or culture in question. He/she must be believable and persuasive. In this study, many members of Brick Builders were also personally met.

Reflexivity means that the texts are left open to criticism and alternative approaches. Other researchers might notice other issues emerging from the data. Subjective interpretation is both a challenge and an opportunity for the netnographer.

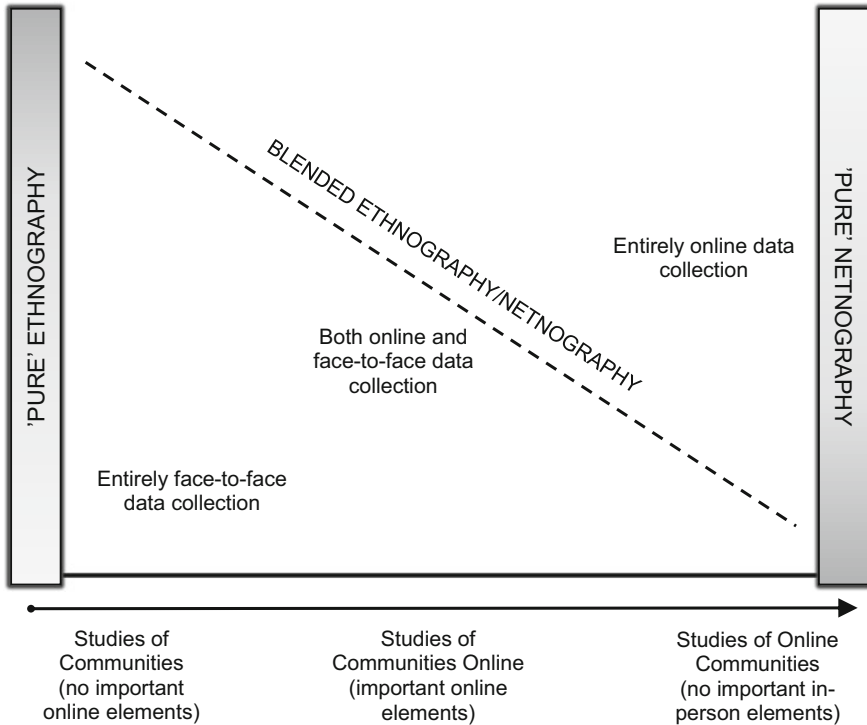


Fig. 2 Blending pure netnography and pure ethnography (Source: Kozinets 2010, p. 67)

The reliability has been increased with careful documentation. Praxis—inspiring social action—is another criterion for ethnographic quality. New technology empowers social action and activism. This study aims to increase understanding of consumer engagement in this research context. The tenth criterion, intermix, takes into account social interaction both in online and offline modes. Pure netnography was mixed and blended by ethnographic observation with a strong theoretical background. The distinction between pure netnography and pure ethnography is illustrated in Fig. 2 (Kozinets 2010).

This study includes blended elements from both pure netnography and ethnography. The data collection is mainly based on netnography with more than 1000 postings and with nearly 200 different poster pseudonymes. However, pure netnographic approach was supplemented by 11 personal interviews and several interactive emails. In addition, it was possible to attend an exhibition where also Brick Builders were attending with their own fair stand.

4 Empirical Findings

According to Schau et al. (2009) social networking, impression management, community engagement, and brand use constitute the main thematic practices in brand communities. Empirical findings in our study indicate clearly that in addition to these four main thematic practices numerous sub-practices can be found in Brick Builders as illustrated in Fig. 3.

Our empirical findings can be now shortly summarized as visualized in Fig. 3. First, to create and sustain tight bonds among the members of an online brand community is vital in social networking. It is evident that to welcome, empathize, learn, and govern are the corresponding thematic sub-practices in this context. Second, to evangelize and justify are relevant thematic sub-practices in impression management. It also includes both internal and external dimensions. Third, to reinforce involvement in the brand community can be facilitated by community engagement. It is apparent that to stake, milestone, badge, and document are corresponding thematic sub-practices in this occasion. Fourth, to increase and enhance the consumption of the parent brand is characteristic in brand use. It is obvious that to groom, customize, and commodify are the relevant thematic sub-practices in this context.

5 Conclusions and Managerial Implications

In light of this study, it is clear that consumer engagement in online communities should be more utilized by many firms. Community members should be encouraged to give good advice and feedback for the other members of online community, and active members should be rewarded by the parent company. Online communities can also be regarded as fruitful innovation source for product and service development.

The open nature and fragmentation of the Internet causes both opportunities and risks to consumer engagement. Online communities should be able to benefit from the help they give to companies and not feel exploited. Further studies should focus on consumer engagement in online communities by taking the mutual benefits and risks into account.

Firms and their stakeholders should take advantage of the experiences and ideas created within online brand communities. Firms would already have access to a large amount of potentially significant data that arises daily from online communities. It is important to ensure that the data generated daily by online communities reaches the right stakeholders inside and outside of the firm. In this respect, online communities are one key to successful e-marketing.

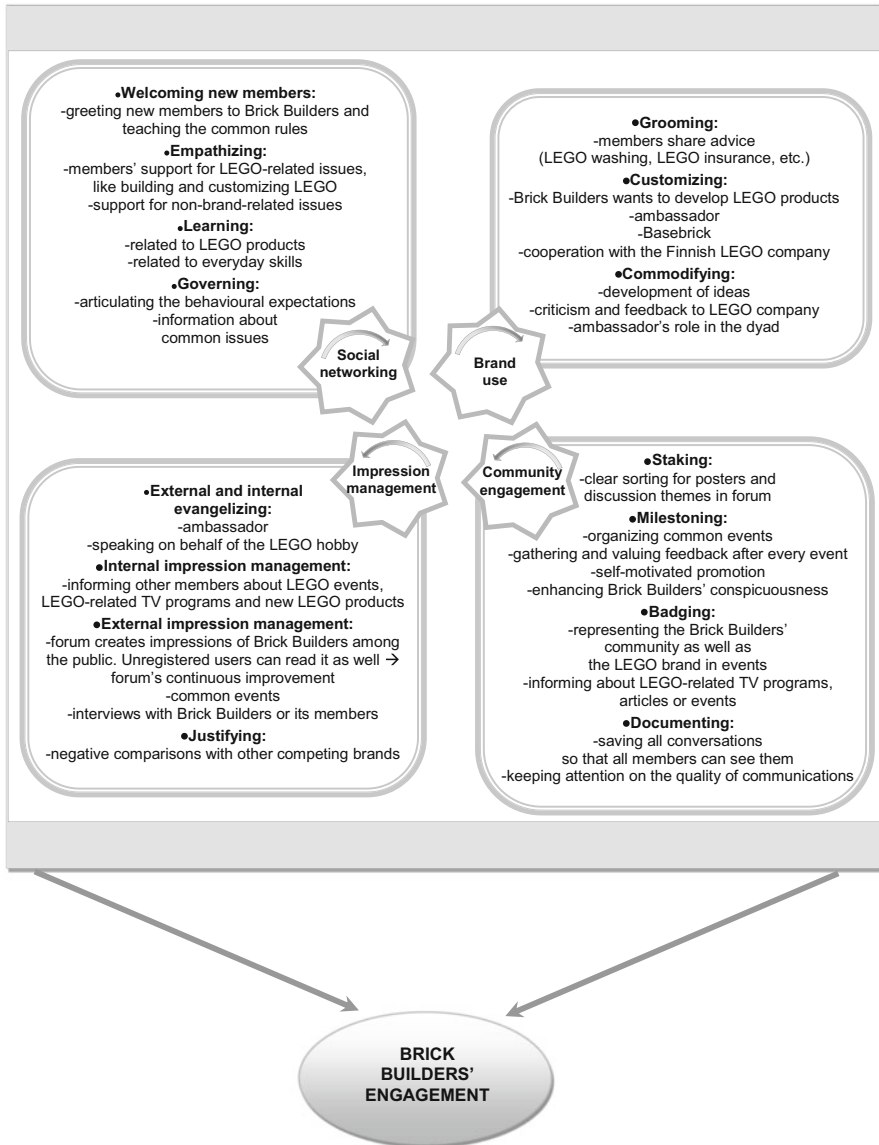


Fig. 3 Thematic practices and engagement in Brick Builders (Source: Schau et al. 2009, p. 36 and empirical findings from this case study)

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The Multidimensional Character of the COO Effect in Education Services: Its Perception in the Selected European Countries



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Abstract The aim of the article is to present multidimensional nature of the country of origin (COO) effect in higher education services and to analyze perception of the power exerted by a particular country in such services, depending on the countries of origin of respondents and services. The data have been collected from 264 students from Poland, Lithuania, and Germany. To analyze the data, a method of the repeated measures analysis of variance has been applied. The results of the research confirm the multidimensional character of the COO effect. Nine European countries which are analyzed in the article are characterized by a high differentiation of the power exerted by the particular countries, which is namely, perception of the COO of the country weighted by the significance of the particular COO dimensions in education services. The results of the research may be applied to plan marketing operations, including development of a product, promotion actions, development of an image, and the positioning of an offer of higher education services for the foreign markets. The value contributed by the following article is: (1) indication of the multidimensional character of an image of the origin country in education services, which has not been confirmed so far; (2) introduction of an original rate, namely: a COO power rate, which includes the significance of a particular COO dimension for consumers as well as the perception of such a COO dimension in the particular origin country of services; (3) the research conducted among the respondents in Europe where the COO effect in education services has not been analyzed so far.

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Keywords Country of origin (COO) effect · COO dimensions · Education services

1 Introduction

The influence exerted by the image of a country on the perception of products which have been produced there was introduced into the scientific discourse by Schooler (1965). The problem quickly became a subject of numerous research studies which referred to material goods (for relevant literature reviews, see, e.g., Bilkey and Nes 1982; Al-Sulaiti and Baker 1998; Peterson and Jolibert 1995; Javalgi et al. 2001; Pharr 2005; Rezvani et al. 2012; Saran and Gupta 2012), whereas relatively scarce attention was paid to that phenomenon in the context of international trade of services (Javalgi et al. 2001; Ahmed et al. 2002; Chattalas et al. 2008; d'Astous et al. 2008; Boguszewicz-Kreft 2014).

It also refers to the market of higher education services which has been developing quickly and on the global scale (Sze Yin Ho and Sok Foon 2012; Morrish and Lee 2011); however, scholars' attention has been focused on developed countries, whereas a growing number of international students flow into developing countries (Cantwell et al. 2009).

The aim of the article is to fill in the identified research gap through the presentation of the results obtained during the research on the COO effect in higher education services, with particular consideration of the problem referring to the multidimensional character of the COO in such services. The data have been collected from students in Germany and in two-developing countries: Poland and Lithuania, with the use of an auditorium survey technique. To analyze the data, a method of the repeated measures analysis of variance has been applied.

The article starts with the characteristics of the international market of higher education. It is followed by a review of literature on the COO effect in marketing of goods and services. Next, the specific character of higher education services is discussed along with the research on such services with the consideration of the COO. After the presentation of theoretical achievements, the applied research method is discussed and followed by a presentation of the obtained results and conclusions. At the end of the article, limitations and directions for further research are indicated.

2 International Market of Education Services

In 2014 the number of people studying at foreign universities exceeded the level of 4.5 million, which was almost 6% of all the students (OECD 2016). In the years 2000–2012, the discussed market almost doubled its size as a result of almost 7% of its annual growth (OECD 2014). It is estimated that in 2025 8 million people shall be studying abroad (Farrugia 2014). Such dynamics is related with benefits for students,

their home countries, and host countries. It results from a growing income of numerous developing countries, as it allows their citizens to study abroad (Abella 2015). A decision to study abroad at a destination place which offers education at a higher level is seen as an investment for the future which may be helpful in developing one's professional career in their home country or in their host country; it can be also helpful in improving one's chances for attractive employment on the international labor market. Benefits for the home countries result from knowledge transfer and acquisition of well-educated staff. Host countries provide access to universities, and they ease their immigration policies because foreign students are not treated as traditional recipients of development aid any longer (Cantwell et al. 2009). Their presence involves some financial benefits (In 2014, the estimated income obtained from tuition, accommodation, and other expenses was not less than \$50 billion (Abella 2015)). It also involves some social benefits such as opportunities for acquiring valuable employees. Considering growing competition, a number of host countries have initiated active marketing operations, undertaken by the government and education institutions which are aimed at the acquisition of customers (Binsardi and Ekwulugo 2003; Kondakci 2011; Cantwell et al. 2009). The highest number of foreign students is recorded in the USA (19% of all the foreign students), Great Britain (10%), Australia and France (6% each), Germany (5%), and Russia, Japan, and Canada (3% each) (OECD 2015). The highest number of foreign students comes from Asian countries (53%), including China (20.8%) and India (5.3%).

3 Literature Review

3.1 *The COO Effect in Marketing*

The COO effect comes as an impact exerted by an image of a particular country on the assessment of products or brands which come from that country (Figiel 2004) and on the attitude and behavior of consumers (Sikora 2008; Balabanis and Diamantopoulos 2011). It is a subjective and involuntary process (as cited in Rezvani et al. 2012); moreover, the identification of the COO of a particular product or service is not always accurate (Balabanis and Diamantopoulos 2008, 2011; Lianxi et al. 2010; Melnyk et al. 2012; Martín Martín and Cerviño 2011; Paswan and Sharma 2004; Sharma et al. 2009; Nicolescu 2012). The COO effect is underlain by some positive and negative stereotypes which refer to particular countries and their citizens (Verlegh and Steenkamp 1999; Chattalas et al. 2008). The activation of such stereotypes is of intrinsic nature and their contribution to the development of opinions on products is not intentional (Liu and Johnson 2005). Verifying genuineness of such stereotypes, genuine familiarity of a particular country affects the discussed effect (d'Astous et al. 2008).

The subject of the current research has been the impact of the COO on the evaluation of quality, purchase risk, the value of an offer, purchase intentions, and

decisions (for relevant literature reviews, see, e.g., Peterson and Jolibert 1995; Pharr 2005; Rezvani et al. 2012; Koschate-Fischer et al. 2012). In most cases the research studies confirm the impact of the COO on the assessment and consumers' decisions (as cited in Rezvani et al. 2012; Ahmed et al. 2002; Wong and Folkes 2008; Garrett et al. 2017; Harrison-Walker 1995; Berentzen et al. 2008; Khare and Popovich 2010; Bose and Ponnampalani 2011; Morrish and Lee 2011). The results of the research indicate the preference of products and services which come from consumers' home country and countries of a closer cultural distance (d'Astous et al. 2008; Bruning and Saqib 2013). An offer from higher developed countries is also assessed as a better offer, and consumers perceive it as an offer which is burdened with less purchase risk and which provides higher quality (Al-Sulaiti and Baker 1998; Javalgi et al. 2001). Furthermore, the results of the research also indicate that products coming from developing countries are evaluated as worse, which may be related to some stereotypes (Liu and Johnson 2005). The research studies also indicate some differences in the perception of the COO of an offer reported by consumers from various countries (Narayana 1981; Nagashima 1970; Sharma 2011; Gurhan-Canli and Maheswaran 2000; Lee et al. 2007).

The attempts which have been made to decide whether the COO comes as a single- or multidimensional category have not been successful so far (Hong and Wyer 1989; Johansson et al. 1985; Parameswaran and Pisharodi 1994; Roth and Romeo 1992).

3.2 Specific Character of Higher Education Services

There is a number of reasons for which consumers may treat the COO as a presumption for making decisions about studying abroad. First of all, it may be related with the specific nature of services understood in a general way; the specific nature of services results from their characteristic features: nonmaterial services, inseparable production and consumption, heterogeneity which makes consumers perceive purchase risk higher. Moreover, such a belief may be reinforced by a professional character of higher education services (Drapieńska 2011) which is related to students' high involvement in decision-making processes. Education comes as a long and costly process which considerably affects future life. For many students and their families, a decision about studying abroad turns out to be one of the most important decisions in their life (Mazzarol 1998). Considering all the facts presented above, the COO may be viewed as a kind of a quality indicator which helps to minimize the perceived purchase risk.

3.3 The Research on the COO in the Field of International Higher Education Services

In the mid-1990s, an increase in the number of people studying abroad attracted scientists' attention to the problem of international marketing of education services and led to considerable intensification of research studies since the first decade of the present millennium. In spite of this, scientific achievements in that field are rather scarce and it also refers to the COO effect in education services.

The abovementioned facts are confirmed by a systematic review of expert literature (with the consideration of peer-reviewed scientific magazines available in their full versions in English) which is available in four library databases: EBSCO, ProQuest, Emerald, and Science Direct (with the searching criterion for the key words: “*country of origin*,” “*higher education*,” “*service marketing*,” and “*consumer behavior*”). Such a procedure has allowed the authors to select 11 articles (including eight research papers and three conceptual papers) which come as a subject for further analysis. The selected articles were published during the years 2000–2016, and they illustrate a relatively new interest in the discussed problems.

The identified publications are focused on the following problems: motives (Bourke 2000), factors which affect decisions about studying, including the image of the country of origin (Srikatanyoo and Gnoth 2002; Cubillo et al. 2006; Raharjo 2012; Kamal Basha et al. 2016), the influence of the COO of a university and the COO of students on the perceived quality of services (Morrish and Lee 2011; Sze Yin Ho and Sok Foon 2012; Arambewela and Hall 2006), the influence of the COO on the perception of brands related to education services (Grace and O’Cass 2002) and the evaluation of foreign academic teachers (McCalman 2007; Devasagayam and Stark 2014).

The obtained results confirm the influence of the image of the country on the consumers' perception (Raharjo 2012; Kamal Basha et al. 2016), on the choice of a studying destination (Bourke 2000) and on the evaluation of the quality of education services (Morrish and Lee 2011). It should be emphasized that there has not been any research conducted among European students; most often the respondents have been students from Asian countries and America. The question of the COO dimensions is not discussed in any publication.

4 Methodology

4.1 Sample and Data Collection

The research was conducted among 264 students of major study courses in the economy in Germany, Poland, and Lithuania in 2015. The data were collected with the use of an auditorium survey technique. Table 1 presents the characteristics of the respondents.

Table 1 Characteristics of the respondents participating in the research

Respondents	N	Age		Gender ^a	
		M	SD	Women	Men
Polish	127	23.43	6.51	72	53
Lithuanian	65	23.02	6.60	33	31
German	72	22.53	2.75	45	27
Sum	264	23.09	5.70	150	111

Source: The authors' own study

^aThe sum of men and women does not correspond to the general number of participants due to the lack of gender information in several questionnaire forms

4.2 Questionnaire Form

During the research the following questionnaire form has been applied: there are seven questions which require the respondents to provide evaluation, using a 6-point Likert scale, from 1—very low/definitely no, 2—low/no, 3—rather low/rather no, 4—rather high/rather yes, 5—high/yes, to 6—very high/definitely yes. The questions refer to the evaluation of an image of nine countries, with the consideration of four dimensions: Innovativeness, Diversity, Quality, and Prestige, and to the evaluation of the importance of the abovementioned features for six types of services. The subsequent questions require the respondents to define their readiness to purchase such services in the analyzed countries and their familiarity with those countries. Two last questions refer to the respondents' stay in the analyzed countries, the respondents' age, gender, and employment.

Included in the questionnaire form, the dimensions come as a model provided by Roth and Romeo (1992) and adapted by the authors of this article to the requirements of the analysis of services. In its original version which refers to material products, the model includes¹: Innovativeness, Design, Prestige, and Workmanship.

Applied in the research study discussed in this article, the questionnaire form includes the following dimensions with their descriptions:

1. Innovativeness—the use of state-of-the-art knowledge and technology
2. Diversity—variety, the range and attractiveness of an offer
3. Prestige—exclusiveness, status, and reputation
4. Quality—effectiveness, durability, and professionalism

The analysis refers to education services from 9 European countries, namely, the countries of the old European Union—Germany, France, Great Britain, Italy, Spain, and Sweden, and the countries of the new European Union—Lithuania, Poland, and Hungary.

¹A review of research methods applied for the research studies on COE can be found in Bose and Ponnam (2011) and Meng et al. (2007).

4.3 Methodology

The main aim of the research has been to verify the multidimensional character of the COO effect in education services. Additionally, the level of the importance of the COO dimensions in such services has been determined along with the intensity of the COO power, defined by Boguszewicz-Kreft et al. (2015, p. 29) as “the global perception of the COO of the service weighted by the importance of the particular dimensions in the particular service.” Two hypotheses were tested in the study:

Hypothesis 1 The COO effect in higher education services is of a multi-dimensional character.

Hypothesis 2 The power of higher developed countries in higher education services is evaluated higher by the consumers.

In order to test hypothesis 2, the power of the country k ($k = 1, \dots, 9$) has been calculated for education services, with the use of the following equation:

$$U_k = \text{now}_k \times w_{\text{now}} + \text{roz}_k \times w_{\text{roz}} + \text{jak}_k \times w_{\text{jak}} + \text{pres}_k \times w_{\text{pres}}, \quad (1)$$

where: w_{now} ; w_{roz} ; w_{jak} ; w_{pres} —weights, namely, the importance of the particular dimension (respectively, Innovativeness, Diversity, Quality, and Prestige) for each respondent in the choice of an education service. now_k ; roz_k ; jak_k ; pres_k —the respondent’s perception of the particular attribute in the k country, obtained as a result of the respondent’s answer to the following question: How would you evaluate Innovativeness, Diversity, Quality, and Prestige of products and services from the particular country, using a 6-point scale (1—very low, 6—very high)?

5 Findings

Table 2 presents an average evaluation of the importance of the analyzed COO dimensions for education services provided by the consumers from three countries. Considering the fact that a 6-point scale has been applied, it is possible to state that the discussed dimensions are important for the choice of education services. Regardless of the consumers’ country of origin, the most important dimension is Quality, whereas the least important one is Prestige for the respondents from Germany and Lithuania; the least important dimension for the respondents from Poland is Innovativeness.

An assumption of the multidimensional COO effect (Hypothesis 1) has been verified with the use of the repeated measures analysis of variance. During the analysis one factor of the repeated measures is introduced, that is namely, the COO dimension with 4 levels: Innovativeness, Diversity, Quality, and Prestige. A grouping variable is the country of origin of a respondent, which assumes 3 levels: Poland, Lithuania, and Germany.

Table 2 The importance of the COO dimensions in education services

Dimensions	Lithuania		Poland		Germany	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Innovativeness	5.4000	0.8979	4.7953	1.0184	4.9861	1.0139
Diversity	4.8462	1.2403	4.9764	1.1089	5.0694	0.8774
Quality	5.4923	0.9207	5.0630	1.0965	5.5694	0.6885
Prestige	4.8000	1.1484	4.8032	1.1686	4.4167	1.4511

Source: The authors' own calculations

M mean, *SD* standard deviation

Table 3 Univariate test of significance for the repeated measures

Effect	Sum of squares	Degrees of freedom	Mean square	<i>F</i> statistics	<i>p</i> -level
COO dimension	60.7983	3	20.2661	26.7781	<0.0001
COO dimension × respondent's origin	31.1311	6	5.1885	6.8557	<0.0001
Error	592.5886	783	0.7568		

Source: The authors' own calculations

Univariate test of significance for the repeated measures (Table 3) indicate high significance of the effect of the COO dimension; hence, it indicates that in their choice of education services, the consumers assign various weights to the analyzed dimensions. The interaction of the variables of the COO dimension and the respondents' country of origin turn out to be significant too; it means that the significance of the differences between the particular dimensions depends on the respondents' country of origin.

Considering the fact that a necessary condition for the correct application of an *F* test in an ANOVA is to meet the assumption of sphericity, and the use of a W. Mauchly test indicates that such an assumption is not met ($p < 0.01$), corrected univariate tests are applied and they modify the degrees of freedom related to the *F* test (Stanisz 2007). The Greenhouse-Geisser correction, the Huynh correction, and the correction based on the lower limitation confirm the significance of the effects ($p < 0.01$). The application of a multivariate Wilks' Lambda test for the repeated measures also confirms the significance of both effects ($p < 0.0001$).

In order to provide a more precise definition of the discussed effects, the results of an LSD (Least Significant Differences) test are used (Tables 4 and 5). For each pair of the averages, the test defines the *p*-level of probability at which a significant difference between the averages can be observed. First of all, it has been tested whether there are any significant differences in the evaluation of the particular dimensions between the respondents coming from various countries. It can be noticed that there are significant differences only in two cases, namely, for Innovativeness which comes as the second dimension in terms of importance for the Lithuanian respondents; for the Polish respondents it comes as the least important dimension; and for Quality which is the most important for Polish and German

Table 4 The results of the LSD test—a comparison of the COO of the respondent

Dimensions	Lithuania-Poland	Lithuania-Germany	Poland-Germany
Innovativeness	0.0104*	0.1166	0.4006
Diversity	0.5788	0.3964	0.6817
Quality	0.0681	0.7694	0.0263*
Prestige	0.9893	0.1460	0.0894

Source: The authors’ own calculations

Probabilities for post-hoc tests

*Indicates that the difference is significant at 5%

Table 5 The results of the LSD test—a comparison of the COO dimensions

	In-div	In-qual	In-prest	Div-qual	Div-prest	Qual-prest
Lithuania	0.0003**	0.5454	0.0001**	0.0000**	0.7624	0.0000**
Poland	0.0975	0.0144*	0.9425	0.4278	0.1130	0.0175*
Germany	0.5656	0.0001**	0.0001**	0.0006**	0.0000**	0.0000**

Source: The authors’ own calculations

Probabilities for post-hoc tests

*Indicates that the difference is significant at 5%

**Indicates that the difference is significant at 1%

respondents, however the difference in the evaluation of importance is 0.5 point of the 6-point scale. The fact that there are significant differences in the case of Innovativeness and Quality and that there are no differences in the case of Diversity and Prestige confirms the ANOVA results obtained for the univariate tests conducted separately for each dependent variable (for each COO dimension), regardless of the fact whether a particular combination contains the factors of the repeated measures.

Next, the differences in the evaluation of the particular dimensions have been analyzed for the respondents coming from three discussed countries, with the use of an LSD test.

Table 5 indicates that the importance of the dimensions in education services is most differentiated by the German respondents, and it is the least differentiated by the Polish respondents. The features for which there are significant differences in the evaluation provided by the respondents from all the analyzed countries are Quality and Prestige. The least number of differences in the average evaluation of the importance is observed in two cases: for Diversity and Prestige and for Diversity and Innovativeness. There are no significant differences between the averages for these features in the evaluation provided by the respondents from two countries—in the first case: from Lithuania and Poland, in the second case—from Poland and Germany.

In order to test hypothesis 2, the power of the country in education services depending on the respondents’ country of origin has been calculated (Table 6).

It is possible to observe that for all the respondents, the country of the highest power is Germany, then Sweden and Great Britain; however for the Polish respondents this order is reversed. There is no consensus as to the countries of the weakest power: For the Lithuanian respondents it is Poland, and for the Polish respondents it

Table 6 The power of the country in education services, depending on the respondents' country of origin

The COO of education services	The respondents' country of origin					
	Lithuania		Poland		Germany	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Poland	60.5385	21.1483	71.5748	22.7029	58.2500	19.0769
Hungary	71.4154	24.0058	63.4173	20.9373	53.9643	16.5788
Lithuania	76.0769	22.8687	52.8819	18.7242	54.7639	18.4311
Spain	76.9231	23.9487	76.2520	22.1115	70.8403	18.9705
Italy	88.3077	26.0702	80.3492	23.7821	76.5000	20.1941
France	92.2923	23.2095	86.4567	25.5149	94.5139	19.6060
GB	100.5846	26.1139	93.8016	23.8361	97.0278	21.8928
Sweden	102.2154	24.6434	90.4803	27.9753	102.1620	17.8495
Germany	112.6615	22.9859	101.5984	24.7063	109.7708	17.9387

Source: The authors' own calculations

M mean, *SD* standard deviation. The highest value of the power of the country that can be obtained is 144 and the lowest value is 4

is Lithuania. The German respondents consider Hungary to be the country of the weakest power, but all the three countries mentioned above are placed in the last and the weakest category. The repeated measures analysis of variance with the country power factor of 9 levels (the power of Germany, the power of France, the power of Great Britain, the power of Italy, the power of Spain, the power of Sweden, the power of Lithuania, the power of Poland, and the power of Hungary) and with a grouping variable of the respondents' country of origin of 3 levels (Poland, Lithuania, and Germany) indicates the significance of the country power effect ($F(8, 2048) = 375.53, p < 0.0001$), hence there are differences in the country power value, depending on the country of origin of a service, a significant effect of interaction between the country power and the respondents' country of origin; ($F(16, 2048) = 16.129, p < 0.0001$) means that the value of the country power depends on the respondent's country of origin. Similarly to the previous analysis, the assumption of sphericity is not met, however the corrected univariate tests and the multivariate test confirm the obtained result. The least differentiated evaluation of the country power provided by the Polish respondents is for Lithuania; it means that most respondents give the lowest evaluation to that country. For the Lithuanian respondents Poland is such a country. The German respondents are most consistent in their evaluation of the country power of Hungary, moreover their evaluation of the country power exerted by each particular country is characterized by the lowest differentiation among all the three analyzed groups of consumers. The results of the research also indicate that there are considerable differences in the power of the particular countries in education services, for instance, the German respondents evaluate the power of Germany over twice as high as the power of Hungary. The similar differences can be observed for the power of Lithuania and Germany for the Polish respondents.

6 Conclusions

The analysis of the collected data has allowed the authors to draw the following conclusions:

1. The respondents have evaluated the analyzed COO dimensions as important for education services.
2. The research confirms the hypothesis 1 which refers to the multidimensional character of the COO effect in higher education services. The most important dimension is Quality, the evaluation of which is significantly different from Prestige, regardless of the respondents' country of origin. The least number of differences can be observed in the evaluation of Diversity and Prestige and in the evaluation of Innovativeness and Diversity—they appear only in the case of the respondents from one country.
3. Most of the COO dimensions have been evaluated by the consumers coming from three analyzed countries in a similar way. The differences appear only in the evaluation of the importance of Innovativeness provided by the Polish and Lithuanian respondents (the Lithuanian consumers evaluate it significantly higher) and in the evaluation of Quality provided by the Polish and German respondents (the German respondents evaluate it significantly higher).
4. The results confirm the hypothesis 2 which refers to the higher evaluation of the power of the higher developed countries in higher education services. The analyzed countries are characterized by large differences in the country power—German services are evaluated twice as high as services provided in the countries which are members of the new European Union. There are also differences in the evaluation of the country power of the particular countries, depending on the respondents' country of origin.

As for further research, it might be interesting to verify whether the observed regularity, that is namely, having Quality at the first place and Prestige at the last or the second to last place, can be also noticed among students who come from the countries other than the countries analyzed in the article. Such information could be useful in planning marketing campaigns for universities.

A relatively small sample of the respondents who come from only one university in each of the three analyzed countries does not allow the authors to provide a generalization of the results obtained during the research. The selection of the dimensions has been driven by the intention to develop a measurement tool that could allow the authors to provide comparisons among various categories of products. However, it might be possible to identify dimensions which would be better adjusted to the specificity of education services.

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Dimensions of COO Effect Perceived by Consumers from Poland, Lithuania, and Germany



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Abstract The aim of the chapter is to present multidimensional nature of the country of origin (COO) effect and to verify whether the evaluation of the dimensions of products and services differs depending on their country of origin and on the country of origin of consumers. The data have been collected from 264 students from Poland, Lithuania, and Germany, with the use of an auditorium survey technique. To analyze the data, a method of the repeated measures analysis of variance has been applied. The results of the research indicate that the COO effect of products and services is of multidimensional nature. The evaluation of these dimensions differs depending on the country of origin of products and services, and the country of origin of respondents. A relatively small sample of the respondents who come only from one university in each of the three analyzed countries does not allow the authors of the chapter to provide any generalization of the obtained results. The results of the research may be applied to plan marketing operations undertaken in foreign markets. The value of the chapter consists of the demonstration of the multidimensional character of the phenomenon.

Keywords Country of origin (COO) effect · COO dimensions · Product and services marketing

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1 Introduction

Schooler (1965) introduced a notion of the COO effect in the literature. Since then, the subject has been studied by numerous scholars, and it has been placed in a group of the most analyzed marketing aspects of international trade and customer behavior (for relevant literature reviews, see e.g., Bilkey and Nes 1982; Al-Sulaiti and Baker 1998; Peterson and Jolibert 1995; Javalgi et al. 2001; Pharr 2005; Rezvani et al. 2012; Saran and Gupta 2012). However, the question of whether the phenomenon is of single-dimensional or multidimensional nature has not been answered so far.

The aim of the chapter is to indicate the multidimensional character of the COO effect and to examine the way in which the evaluation of products and services differs depending on their country of origin and the country of origin of respondents. The survey has been conducted among the respondents from three European countries: Lithuania, Germany, and Poland, with the use of an auditorium survey technique. To analyze the data, a method of the repeated measures analysis of variance has been applied. The chapter starts with a review of literature on the COO effect in marketing of goods and services and questions related to the dimensions of the analyzed phenomenon. The subsequent part of the chapter is of empirical nature, and it presents the research method and the obtained results.

2 Literature Review

2.1 *The COO Effect in Marketing*

The country of origin effect (COO effect) can be defined as impact exerted by an image of a particular country on the evaluation of products, services, or brands which come from that country (Figiel 2004) and as impact exercised on consumers' attitudes and behavior (Sikora 2008; Balabanis and Diamantopoulos 2011). In the literature, the subjective and unintentional character of the phenomenon is emphasized (Rezvani et al. 2012), along with the possibility of inaccurate identification of the COO of a particular product or service (Balabanis and Diamantopoulos 2008, 2011; Lianxi et al. 2010; Melnyk et al. 2012; Martín Martín and Cerviño 2011; Paswan and Sharma 2004; Sharma et al. 2009; Nicolescu 2012).

The COO effect comes as a result of stereotypes about a particular country and its citizens (Verlegh and Steenkamp 1999; Chattalas et al. 2008), although consumers do not apply such stereotypes intentionally—they are activated in an independent way (Liu and Johnson 2005). The influence of stereotypes on the formation of the COO effect is decreased by growing familiarity with a particular country (d'Astous et al. 2008).

So far, the influence of the COO on the evaluation of quality, value, and price of an offer, purchase risk, purchase intentions, and decisions were analyzed (for relevant literature reviews, see e.g.: Peterson and Jolibert 1995; Pharr 2005; Rezvani

et al. 2012; Koschate-Fischer et al. 2012). The results of most research studies allow us to state that the COO affects evaluation and consumers' decisions (Harrison-Walker 1995; Bourke 2000; Ahmed et al. 2002; Wong and Folkes 2008; Berentzen et al. 2008; Khare and Popovich 2010; Bose and Ponnam 2011; Morrish and Lee 2011; Rezvani et al. 2012; Raharjo 2012; Kamal Basha et al. 2016; Garrett et al. 2017). Consumers prefer products and services coming from their home country and from countries of closer cultural distance (d'Astous et al. 2008; Bruning and Saqib 2013). Offers from higher developed countries are evaluated better by consumers—such offers are considered to be burdened with less purchase risk and to provide higher quality (Al-Sulaiti and Baker 1998; Javalgi et al. 2001). Products and services offered by developing countries are evaluated as worse, and this fact results from their stereotypical assessment (Liu and Johnson 2005). Moreover, consumers from various countries perceive the COO of products and services in a different way (Narayana 1981; Nagashima 1970; Sharma 2011; Gurhan-Canli and Maheswaran 2000; Lee et al. 2007).

2.2 *COO Dimensions*

Hong and Wyer (1989), Johansson et al. (1985), Parameswaran and Pisharodi (1994), Roth and Romeo (1992) do not provide any unambiguous answer to the question whether the COO effect is a single- or multidimensional category. Expert literature provides some opinions on consumers who perceive that category as a global, single-dimensional one (e.g. Hong and Wyer 1989). However, some studies tend to consider the phenomenon as multidimensional, and they focus their efforts to identify the dimensions and to analyze the strength of their influence on the perception of the COO image of an offer (e.g., Johansson et al. 1985; Parameswaran and Pisharodi 1994). A model proposed by Roth and Romeo (1992) comes as a multidimensional approach provided for material goods¹:

1. Innovativeness—use of new technology and engineering advances
2. Design—appearance, style, colors, and variety
3. Prestige—exclusivity, status, brand name reputation
4. Workmanship—reliability, durability, craftsmanship, and manufacturing quality

The model has been also applied in the research studies presented by Bose and Ponnam (2011), who have modified it slightly for the requirements of the studies on entertainment services (music, dance, circus, theater, and film). Bose and Ponnam (2011) suggest the following dimensions: Innovativeness, Diversity, Exclusivity, and Quality. After some modification done in order to achieve a universal tool for the research on services, the above-mentioned models have been assumed as a basis for

¹A review of research methods applied for the research studies on COO can be found in: Bose and Ponnam (2011) and Meng et al. (2007).

the following research study. The introduced changes, however, are not of fundamental nature as the authors' intention is to provide a possibility of comparing the obtained results with other analyses, including those of material goods and their generalization. Finally, the following model is suggested:

1. Innovativeness—the use of the state-of-the-art technology and knowledge
2. Diversity—variety, wide, and attractive offers
3. Prestige—exclusivity, status, and reputation
4. Quality—efficiency, durability, and professionalism

3 Research Method

3.1 Data Section

The data have been collected from:

- 127 Polish students: 54 men (42.5%) and 73 women (57.5%), whose average age is: Mean = 23.43; Std. Deviation = 6.51.
- 65 Lithuanian students of major study courses in economics: 31 men (48.4%) and 33 women (51.6%), whose average age is: Mean = 23.02; Std. Deviation = 6.60.
- 72 German students of major study courses in economics: 27 men (37.5%) and 45 women (62.5%), whose average age is: Mean = 22.53; Std. Deviation = 2.75.

The participation in the survey has been anonymous and voluntary.

A questionnaire form contains questions related to the evaluation of the images of nine countries, in terms of Innovativeness, Diversity, Quality, and Prestige. The evaluation has been performed with the use of a 6-point scale (1—very low, 2—low, 3—rather low, 4—rather high, 5—high, and 6—very high).

There have been nine European countries selected for the analysis, among which there are some countries of stronger economies, such as Germany, France, Great Britain, Italy, Spain, Sweden, and some countries of the New European Union: Lithuania, Poland, and Hungary.

3.2 Hypotheses

The aim of the research is to analyze whether the COO comes as a single-dimensional construct and whether it is differentiated by the respondents' country of origin and by the country of origin of products and services. Hence, the following hypotheses have been formulated:

1. Innovativeness, Diversity, Quality, and Prestige are significant dimensions of the COO effect.

2. The evaluation of the dimensions of the country of origin differs depending on the country of origin of products and services.
3. The evaluation of the dimensions of the country of origin differs depending on the country of origin of the respondents.

In their research study, the authors also make an attempt to determine whether—considering a stereotyping mechanism of the COO effect—it is possible to identify common beliefs of the respondents from different countries which refer to the evaluation of the analyzed COO dimensions. An attempt is also made to provide an answer to the question of why the COO dimensions are differentiated in a stronger way in some cases and in a weaker way in some other cases.

To analyze the data, a method of the repeated measures analysis of variance has been applied. The repeated measures ANOVA compares means across one or more variables that are based on repeated observations. The test LSD (least significant differences) was also used in the analysis (Tables 4–12). The test determining the p level of probability for each pair of averages at which a significant difference between the averages appears.

4 Results

During the analysis, two factors of the repeated measures are introduced, these are namely: the COO dimension with four levels: Innovativeness, Diversity, Quality, and Prestige, and the country of origin of products and services with nine levels (Germany, France, Great Britain, Italy, Spain, Sweden, Lithuania, Poland, and Hungary). A grouping variable is the country of origin of a consumer, with three levels (Poland, Lithuania, and Germany).

The results of a univariate analysis of variance (Table 1) indicate high significance of the COO effect of products and services; hence, it indicates that the evaluation of European products and services is differentiated in terms of their country of origin. The effect of the COO dimension also proves to be significant which means that there are differences in the levels of evaluation provided to the particular COO dimensions. The interaction of these variables turns out to be significant too. The interactions between the analyzed variables with the respondent's origin variable also prove to be significant; it means that the evaluation provided to the countries of origin of products and services and to the COO dimensions depends on the respondents' country of origin.

A necessary condition for the correct application of an F test in the ANOVA is to meet the assumption of sphericity, which is verified with the use of a W. Mauchly test. Since the assumption has not been met ($p < 0.01$), corrected univariate tests are applied (Table 2); these tests modify the degrees of freedom related to the F test (Stanisz 2007). The Greenhouse-Geisser correction and the Huynh correction (which has been omitted in the table because of similar results) confirm the significance of the results. The correction based on the lower limitation is the only correction which

Table 1 Univariate test of significance for the repeated measures

Effect	Sum of squares	Degrees of freedom	Mean square	<i>F</i>	Sig
Country of products and services	5790.414	8	723.802	407.129	<0.001
Country of products and services × respondent's origin	493.588	16	30.849	17.352	<0.001
Residuals	3640.977	2048	1.778		
COO dimension	33.746	3	11.249	8.376	<0.001
COO dimension × respondent's origin	23.606	6	3.934	2.930	0.009
Residuals	1031.444	768	1.343		
Country of products and services × COO dimension	190.377	24	7.932	17.057	<0.001
Country of products and services × COO dimension × respondent's origin	61.606	48	1.284	2.760	<0.001
Residuals	2857.261	6144	0.465		

Source: The authors' own calculations

indicates that the results of interaction between the COO dimension and the respondents' origin, and interaction between the COO dimension, respondents' origin and the country of origin of products and services are insignificant. However, the multidimensional approach (Table 3) indicates the significance of all the results.

The following tables present the results of an LSD test. For instance, the average evaluation of Innovativeness and the average evaluation of Diversity of German products and services provided by Polish respondents (Table 4) is significantly different at the level of $p = 0.0012$. The significant results at the level of $p \leq 0.05$ are presented in bold. The figures present the average evaluation of four analyzed dimensions provided respectively by consumers from Poland, Germany, and Lithuania. The analysis of the surveyed countries has been provided in the following order: starting from the country whose COO dimensions are evaluated in the highest way and ending with the country whose evaluation of the COO dimensions is the lowest.

For German products and services, the highest evaluated dimensions are Quality and Prestige, whereas the lowest evaluated (or almost the lowest—in the case of the Lithuanian respondents) dimension is Diversity (Table 4; Fig. 1). The German consumers differentiate the COO dimensions for products and services from their home country more than the Lithuanian consumers, for whom there are not any differences between the particular dimensions. They evaluate German products and services highly and in a single-dimensional way.

Considering British products and services, it is not possible to observe any common pattern for the evaluation provided by the respondents from the three analyzed countries, because the students from each nationality group evaluate different dimensions in a higher way, however, all the dimensions are highly evaluated, regardless of the respondents' origin (Table 5; Fig. 2). It is again possible to notice that the Lithuanian consumers do not differentiate the dimensions. The

Table 2 Results of a univariate tests of significance, with the consideration of the Greenhouse-Geisser correction and the Lower-bound correction

Effect	Correction	df	F	Sig	Epsilon	Adjusted values		
						df1	df2	Sig
Country of products and services	Greenhouse-Geisser	8	407.128	<0.001	0.842	6.737	1724.786	<0.001
	Lower-bound	8	407.128	<0.001	0.125	1	256	<0.001
Country of products and services × respondent's origin	Greenhouse-Geisser	16	17.352	<0.001	0.842	13.475	1724.786	<0.001
	Lower-bound	16	17.352	<0.001	0.125	2	256	<0.001
Residual		2048						
COO dimension	Greenhouse-Geisser	3	8.375	<0.001	0.929	2.786	713.266	<0.001
	Lower-bound	3	8.375	<0.001	0.333	1	256	0.004
COO dimension × respondent's origin	Greenhouse-Geisser	6	2.929	0.009	0.929	5.572	713.266	0.010
	Lower-bound	6	2.929	0.009	0.333	2	256	0.055
Residual		768						
Country of products and services × COO dimension	Greenhouse-Geisser	24	17.057	<0.001	0.806	19.350	4953.618	<0.001
	Lower-bound	24	17.057	<0.001	0.042	1	256	<0.001
Country of products and services × COO dimension × respondent's origin	Greenhouse-Geisser	48	2.759	<0.001	0.806	38.700	4953.618	<0.001
	Lower-bound	48	2.759	<0.001	0.042	2	256	0.065
Residual		6144						

Source: The authors' own calculations

Table 3 Multivariate test for repeated measure (a Wilks' Lambda test)

Effect	Value Wilks' Lambda test	F	Num DF	Den DF	Pr > F
Country of products and services	0.109	254.277	8	249	<0.001
Country of products and services × respondent's origin	0.473	14.148	16	498	<0.001
COO dimension	0.918	7.540	3	254	<0.001
COO dimension × respondent's origin	0.918	3.686	6	508	0.001
Country of products and services × COO dimension	0.464	11.216	24	233	<0.001
Country of products and services × COO dimension × respondent's origin	0.662	2.220	48	466	<0.001

Source: The authors' own calculations

Table 4 The results of an LSD test for German products and services

Respondent's origin	Germany					
	in-div	in-qual	in-prest	div-qual	div-prest	qual-prest
Poland	0.0012***	0.4039	0.3077	0.0000***	0.0000***	0.8529
Germany	0.0177**	0.0290**	0.6622	0.0000***	0.0050***	0.0806*
Lithuania	0.8977	0.0946*	0.2471	0.1228	0.3036	0.6070

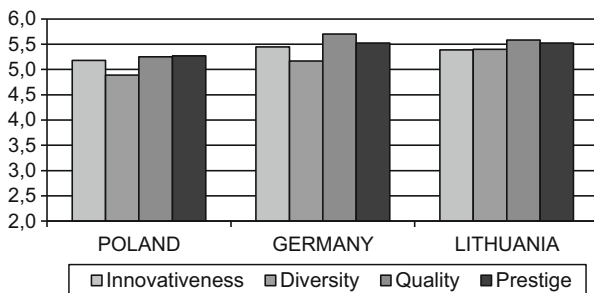
Source: The authors' own calculations

*Significant at 10%

**Significant at 5%

***Significant at 1%

Fig. 1 The average evaluation of the COO dimensions for German products and services (Source: The authors' own calculations)



highest number of differences observed between the dimensions is reported for the Polish respondents.

French products and services are first of all perceived as highly prestigious, however, in the case of the Polish and Lithuanian respondents, they are of lower quality (Table 6; Fig. 3). All the consumer groups indicate a difference between Innovativeness and Quality. In the case of the Polish and Lithuanian respondents, Innovativeness is higher than Quality, whereas for the German respondents it is the opposite situation.

Table 5 The results of an LSD test for British products and services

Respondent's origin	Great Britain					
	in-div	in-qual	in-prest	div-qual	div-prest	qual-prest
Poland	0.4582	0.0414**	0.9261	0.0054***	0.5162	0.0330**
Germany	0.1047	0.0005***	0.0088***	0.0612*	0.3180	0.3823
Lithuania	0.6996	0.8977	0.2471	0.7970	0.1228	0.1985

Source: The authors' own calculations

*Significant at 10%

**Significant at 5%

***Significant at 1%

Fig. 2 The average evaluation of the COO dimensions for British products and services (Source: The authors' own calculations)

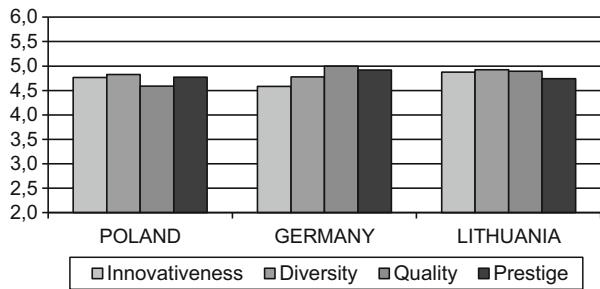


Table 6 The results of an LSD test for French products and services

Respondent's origin	France					
	in-div	in-qual	in-prest	div-qual	div-prest	qual-prest
Poland	0.0012***	0.0205**	0.0001***	0.0000***	0.4582	0.0000***
Germany	0.0806*	0.0126**	0.0000***	0.4539	0.0126**	0.0806*
Lithuania	0.8977	0.0288**	0.4403	0.0206**	0.5202	0.0031**

Source: The authors' own calculations

*Significant at 10%

**Significant at 5%

***Significant at 1%

Fig. 3 The average evaluation of the COO dimensions for French products and services (Source: The authors' own calculations)

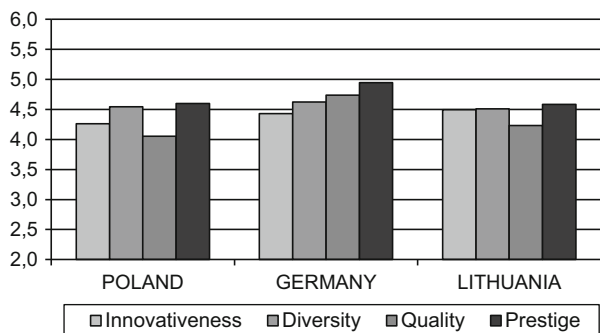


Table 7 The results of an LSD test for Swedish products and services

Respondent's origin	Sweden					
	in-div	in-qual	in-prest	div-qual	div-prest	qual-prest
Poland	0.0000***	0.7107	0.3077	0.0000***	0.0006***	0.5162
Germany	0.0531*	0.0050***	0.6622	0.0000***	0.0177**	0.0177**
Lithuania	0.0001***	0.3680	0.8977	0.0000***	0.0001***	0.3036

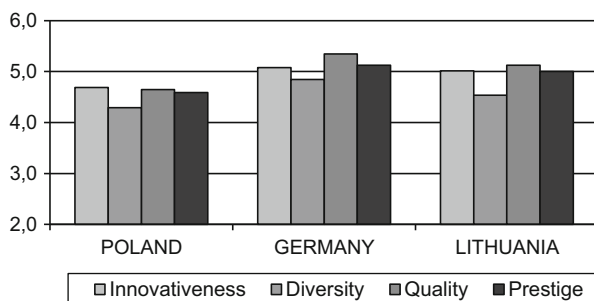
Source: The authors' own calculations

*Significant at 10%

**Significant at 5%

***Significant at 1%

Fig. 4 The average evaluation of the COO dimensions for Swedish products and services (Source: The authors' own calculations)

**Table 8** The results of an LSD test for Italian products and services

Respondent's origin	Italy					
	in-div	in-qual	in-prest	div-qual	div-prest	qual-prest
Poland	0.0414**	0.6429	0.0000***	0.0123**	0.0159**	0.0000***
Germany	0.0000***	0.0000***	0.0000***	0.2120	0.0000***	0.0000***
Lithuania	0.0001***	0.0002***	0.0000***	0.8977	0.3036	0.2471

Source: The authors' own calculations

**Significant at 5%

***Significant at 1%

Considering Swedish products and services, the lowest evaluation is provided for Diversity, comparing to the high evaluation provided to other criteria (Table 7; Fig. 4). Therefore, it is possible to state that the respondents evaluate Swedish products and services in a high and two-dimensional way—the first dimension comes for the evaluation of Innovativeness, Quality, and Prestige, and the second one for the evaluation of Diversity.

As far as the COO dimensions for Italy are concerned, they are very different from each other in the evaluation provided by the German and Polish respondents; the differentiation is the lowest in the evaluation provided by the Lithuanian respondents (Table 8; Fig. 5). Italian products and services are evaluated as prestigious but less innovative and of average diversity.

Fig. 5 The average evaluation of the COO dimensions for Italian products and services (Source: The authors' own calculations)

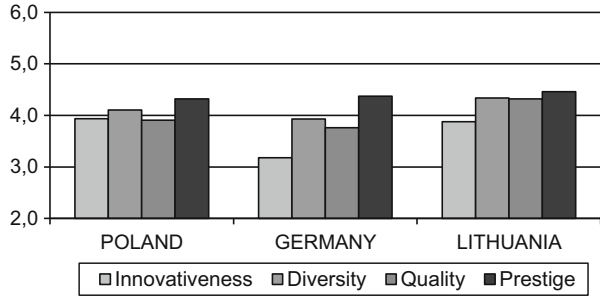


Table 9 The results of an LSD test for Spanish products and services

Respondent's origin	Spain					
	in-div	in-qual	in-prest	div-qual	div-prest	qual-prest
Poland	0.0072***	0.5162	0.0002***	0.0008***	0.3077	0.0000***
Germany	0.0000***	0.0012***	0.0000***	0.1342	0.4172	0.0210**
Lithuania	0.1228	0.0146**	0.0008***	0.3680	0.0718*	0.3680

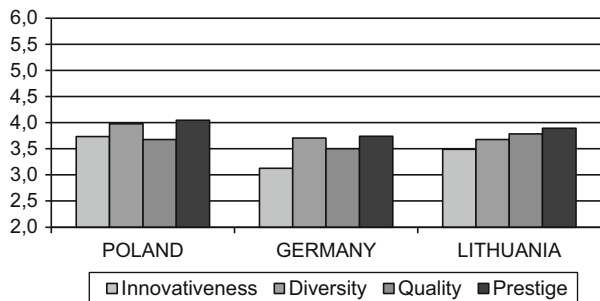
Source: The authors' own calculations

*Significant at 10%

**Significant at 5%

***Significant at 1%

Fig. 6 The average evaluation of the COO dimensions for Spanish products and services (Source: The authors' own calculations)



The evaluation of Spanish products and services is lower than the evaluation of Italian products and services, however, as in the previous case, there is a distinctive differentiation between two dimensions, namely: Innovativeness, which is evaluated as low, and Prestige, which is the COO dimension provided with the highest evaluation (Table 9; Fig. 6). It is again possible to observe that the Lithuanian consumers differentiate their evaluation of the dimensions the least.

The evaluation of Hungarian products and services is low; the highest evaluated dimension is Quality for all the consumer groups. For the Lithuanian and Polish respondents, Quality is significantly different from Prestige (Table 10; Fig. 7).

Table 10 The results of a LSD test for Hungarian products and services

Respondent's origin	Hungary					
	in-div	in-qual	in-prest	div-qual	div-prest	qual-prest
Poland	0.5162	0.9261	0.0515*	0.4582	0.1942	0.0414**
Germany	0.0339**	0.0041***	0.1512	0.4539	0.4924	0.1512
Lithuania	0.1985	0.0013***	0.4403	0.0538*	0.6070	0.0146**

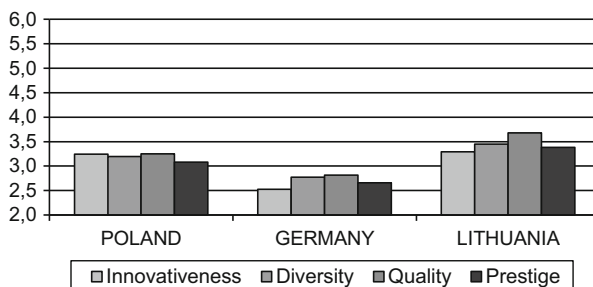
Source: The authors' own calculations

*Significant at 10%

**Significant at 5%

***Significant at 1%

Fig. 7 The average evaluation of the COO dimensions for Hungarian products and services (Source: The authors' own calculations)

**Table 11** The results of an LSD test for Lithuanian products and services

Respondent's origin	Lithuania					
	in-div	in-qual	in-prest	div-qual	div-prest	qual-prest
Poland	0.0159**	0.0951*	0.8529	0.4582	0.0094***	0.0637*
Germany	0.5326	0.1698	0.0018***	0.0458**	0.0126**	0.0000***
Lithuania	0.7970	0.0031***	0.4403	0.0069***	0.3036	0.0002***

Source: The authors' own calculations

*Significant at 10%

**Significant at 5%

***Significant at 1%

Generally, the evaluation of products and services offered by Hungary is weakly differentiated, in comparison to other analyzed countries.

Lithuanian products and services score the lowest evaluation for Prestige and the highest evaluation (in the case of the German and Lithuanian respondents) for Quality (Table 11; Fig. 8). However, it is not possible to determine any tendencies in the evaluation which would be characteristic for all the surveyed consumers. It is, however, possible to notice that the Lithuanian respondents provide Lithuanian products and services with distinctively higher evaluation than the Polish and German respondents. Considering German products and services there is no such dependency, hence the German respondents do not evaluate products and services

Fig. 8 The average evaluation of the COO dimensions for Lithuanian products and services (Source: The authors' own calculations)

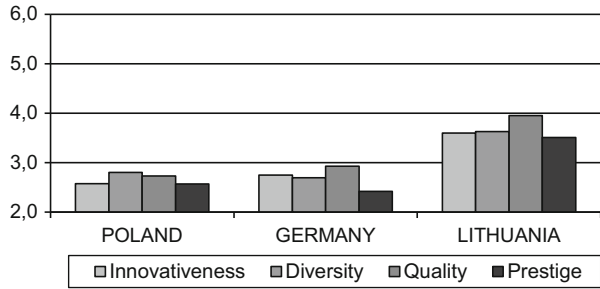


Table 12 The results of an LSD test for Polish products and services

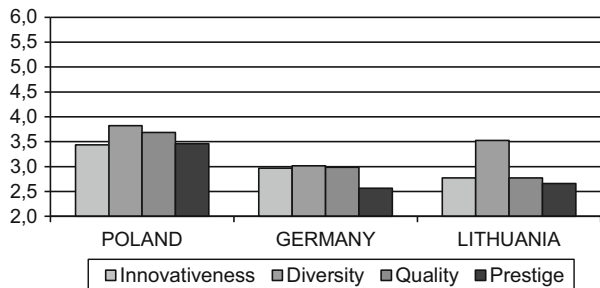
Respondent's origin	Poland					
	in-div	in-qual	in-prest	div-qual	div-prest	qual-prest
Poland	0.0000***	0.0054***	0.8529	0.0951*	0.0000***	0.0094***
Germany	0.8515	0.7550	0.0005***	0.9007	0.0002***	0.0001***
Lithuania	0.0000***	1.0000	0.3680	0.0000***	0.0000***	0.3680

Source: The authors' own calculations

*Significant at 10%

***Significant at 1%

Fig. 9 The average evaluation of the COO dimensions for Polish products and services (Source: The authors' own calculations)



from their home country distinctively higher than the consumers from other countries.

Polish products and services are provided with the highest evaluation by the Polish respondents (Table 12; Fig. 9). The feature that wins the highest evaluation is Diversity, which significantly differs from Prestige in all the consumer groups participating in the survey. It is possible to observe that the German respondents evaluate Prestige differently from other dimensions, in the case of the Lithuanian respondents such a dimension is Diversity.

5 Conclusions

The results of the research confirm all the three hypotheses: (1) Innovativeness, Diversity, Quality, and Prestige come as significant COO dimensions, hence the phenomenon is of multidimensional nature; (2) the evaluation of the COO dimensions differs depending on the country of origin of products and services; (3) the evaluation of the COO dimensions differs depending on the country of origin of respondents.

The research study shows higher evaluation of products and services offered by higher developed countries (Al-Sulaiti and Baker 1998; Javalgi et al. 2001)—the offer of Hungary, Lithuania, and Poland is evaluated lower than the offer coming from the countries of the old European Union. Furthermore, the Polish and Lithuanian respondents evaluate products and services from their home countries in the highest way among all the three surveyed nationalities, which is in line with the current results indicating the preference of an offer which comes from one's home country (d'Astous et al. 2008; Bruning and Saqib 2013). Such a dependency is not observed in the evaluation of the German offer, which is highly evaluated by both groups: the Lithuanian respondents and the German respondents. However, the German offer is objectively very highly evaluated by all the respondents (including German respondents), hence a margin of differentiation in the assumed scale is relatively small.

Based on the conducted analysis, it is possible to draw the following conclusions which, however, require confirmation in further research:

1. Low familiarity with a country and its products and services and/or the lack of stereotypes related to that country contribute to weaker differentiation of the COO dimensions of its offer. It is in line with the confirmed stereotyping mechanism of the COO effect (Verlegh and Steenkamp 1999; Chattalas et al. 2008), and it could explain weaker differentiation related to the evaluation of the dimensions of products and services which come from Hungary (low familiarity and the lack of stereotypes among the respondents) and Great Britain (the lack of stereotypes among the respondents).
2. Consistency in significantly better or significantly worse evaluation of one or two dimensions in the situation where there is no consistency or lower consistency in the evaluation of other dimensions may result from a dominant stereotype about the country which the evaluated products and services come from, and which is common for the respondents of various nationalities, as for example: France whose offer is perceived as prestigious, German products and services which are highly evaluated in terms of Quality and Prestige, Italian and Spanish products and services which are prestigious but which are evaluated at a slightly lower level in terms of Innovativeness, or Swedish products and services which are evaluated at a lower level in terms of Diversity dimension.
3. In a situation where there is no consistency in the evaluation of the dimensions provided by the respondents from various countries, differentiation of the dimensions may indicate a lack of a common stereotype that is associated with a

particular country. The Polish offer exemplifies such a situation: it is perceived by the German respondents, first of all, as non-prestigious, with low differentiation of other dimensions; the offer from Poland is perceived by the Lithuanian respondents as diversified, with low differentiation of other dimensions.

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Consumer's Loyalty: Case of the Virtual Brand Communities



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Abstract Along with the development of social media, the importance of virtual brand communities located on such websites has significantly grown. Nowadays, fanpages serve as a source of information about the brand as well as a mean of building one's personal image by underlining the views and ideas shared with the brand. Participation in the life of brand communities may also increase consumer's loyalty toward the brands. The aim of this article is to investigate the purchase decision of the members of virtual brand communities in order to evaluate their loyalty toward the brands which communities the social media users belong to. The authors conducted an empirical quantitative research, by indirect data collection with the use of survey technique, carried out among 650 Polish Internet users. The results confirm the increase of the loyalty toward the brand caused by participation in its brand community; however differences exist, especially between age groups, and are dependent on the member's level of activity on the fanpage. The research has also shown that the price is often the factor more important for the consumers than their relation with the brand. The results indicate the importance of communicating with consumers via fanpages and promoting their active participation in the life of the community.

Keywords Virtual brand communities · Fanpages · Social media · Consumer loyalty · Purchase decisions

1 Introduction

Due to the rapid development of new communication channels, such as social media, marketers' methods of reaching the consumers had to change. Social networks are not only a place enabling multiple forms of interaction between users, but also

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provide a space for brand communities' operation. Brand communities can be described as consumer groups connected by the shared interest in a specific brand, where the members exchange information with each other as well as with the brand's representatives and at the same time take part in co-creation of the brand's value (Cova and Pace 2006). The growing popularity of websites such as Facebook or Instagram made clear that social media should become an integral part of companies' marketing strategy. Nowadays, most brands have already adjusted to the current trends and are actively participating in creation and functioning of brand communities in order to profit from various benefits, e.g., to reinforce brand awareness, engage users in dialog with the brand and increase consumers' loyalty.

The main aim of this paper is to investigate the purchases decision of the virtual brand communities' members in order to evaluate their loyalty toward the brands which communities they belong to. To achieve this goal, the authors conducted an empirical quantitative research, by indirect data collection using the survey technique, which was carried out among 650 Polish Internet users in the third quarter of 2017.

The research concentrates on Polish consumers—a market segment that has not been examined before in context of fanpages' impact on brand loyalty. The results might serve as an indication for the companies present on the Central and Eastern European markets or those planning to expand their operations to those regions. Additionally, the research also test the connection between demographic factors (age and gender) and the brand loyalty manifested in purchase decisions.

2 Literature Review

During the last two decades, the Internet has evolved from the basic read-only websites into an interactive medium, allowing every user to have an impact on its content. Such arrangement originates from the concept of Web 2.0—a web created and modified by all participants (Aghaei et al. 2012). This concept also serves as a foundation for the operation of social media, networks facilitating interaction between the users. According to a popular definition coined by Kaplan and Haenlein (2010), social media can be described as “a group of Internet-based applications which builds on the ideological and technological foundations of Web 2.0, and it allows the creation and exchange of user-generated content.” The content created and distributed by the networks' end users outside of professional routines and practices (Schivinski and Dąbrowski 2016). Examples of UGC include text posts, photos, pictures, and movies uploaded to social networks to communicate with others.

The emergence of social media has imposed revision of companies' marketing strategies, as it significantly changed the way consumers obtain and generate consumption-related information (Yang et al. 2016). Being able to use various communication tools provided by the social platforms, consumers are no longer a “passive audience” like in traditional marketing, but have become the “active

co-creators," who can express themselves and exchange experiences and opinions with other users (Carvalho and Fernandes 2018; Gambetti et al. 2015). In addition, social networks allow users to connect into smaller groups based on various factors, e.g., shared interests and hobbies or attending the same school. One type of such group is also a virtual brand community, connecting owners and fans of a given brand.

The origins of brand communities can be found in the notion of neo-tribes, developed at the end of the twentieth century by Maffesoli (1996). He described a growing tendency toward abandoning the idea of individualism observed in the postmodern societies in favor of return to gathering into groups based on quasi-archaic values, e.g., local sense of identification, group narcissism or syncretism. Another factor which may serve as the basis for creation of a neo-tribe is the consumption patterns, including regular use of products of the same brand. On the foundation of Maffesoli's findings, a new marketing theory has developed, namely the tribal marketing, connected with creation of consumers' groups gathered around a certain brand. These groups are most often built around the brand connected with a passion, hobby, or set of beliefs (Cova and Cova 2002), which are the factors binding the members together. Therefore, the foundation of their functioning is the experiences connected with the relations with other members and the brand itself. It puts the consumer as the center of this new marketing model, instead of a brand, which used to be the pivotal point of older models (Siuda 2017). As an example of such neo-tribe based on forms of consumption, fan clubs of Jeep cars or Harley-Davidson motorcycles (H.O.G.) can be mentioned. The owners form groups of characteristic features (e.g., dress code) and organize fan gatherings.

The role of tribal marketing is to facilitate the forming of these consumption-based tribes through creating and emphasizing brand's symbolic features to build the linking value (Cova 1997)—ability to connect the group members. However, some researchers argue that the linking value is difficult to be invented by the marketers and rather arises from the tribe's functioning (Canniford 2011). The result of actions in tribal marketing is the emergence of brand communities, gathered around certain brands, which members interact with this brand as well as with each other (Woisetschläger et al. 2008). The members frequently build a specific subculture around the brand, characterized by its own rituals, vocabulary, myths, and hierarchical structure (Cova and Pace 2006). Hence, a brand community can be also defined as a collective of current and potential clients of the brand, connected by shared views and passions, which affect their purchase decisions (Grębosz-Krawczyk and Siuda 2017).

Along with the rise of Internet's popularity, brand communities have also gone online—firstly on forums, however social media, especially Facebook, quickly became the preferred platform for the consumer neo-tribes interaction (Brodie et al. 2013; Dessart et al. 2015). This Web-based groups are called virtual brand communities and are usually located on fanpages—subsites of a platform allowing the users (the owners of the site as well as the fans) to engage in active interaction, e.g., posting content, using the reaction buttons ("like," "wow," etc.), sharing, and commenting (Constantin and Belgiu 2017; Perez-Vega et al. 2016).

According to researchers, the activity of virtual brand community members have a significant impact on fans' purchase decisions and their loyalty toward the brand (Liu and Lopez 2016; Leckie et al. 2016; Relling et al. 2016; Park and Kim 2014). Social interaction, based on sharing experience and information, is said to generate emotional connection with the brand (Casaló et al. 2010) as well as improve brand trust (Bowen and Bowen 2015), which both are the antecedents of brand loyalty. It has to be specified that the concept of loyalty taken into consideration in this paper is connected with behavioral loyalty (Romaniuk and Nenycz-Thiel 2013), particularly choosing a products of a certain brand more often than competitors and devoting a larger proportion of category purchases to the brand than to other options. The research conducted by the authors regards purchase intentions of the community members, measured by evaluation of consumers' willingness to buy and readiness to pay premium for chosen brands (Aaker 1991; Lacoëuilhe 2000).

3 Research Methodology

The main aim of the study is to examine and assess the purchase decisions of the virtual brand communities' members and consequently to evaluate their loyalty toward the brands which communities they participate in. The authors decided to state the following hypotheses:

H1 The demographic characteristics of virtual brand community members influence the purchase intentions and consumer's loyalty.

H2 The activity of virtual brand community members on the fanpages influence the purchase intentions and consumer's loyalty.

The first hypothesis is based on consumer behavior model, described by Kotler and Armstrong (2008) and Lamb et al. (2004), which underlines the role of demographic factors in the process of purchase-related decision-making process. This paper checks whether this role is also important in case of social media. The second hypothesis has its sources in previous research regarding the influence of virtual brand communities on brand loyalty (Liu and Lopez 2016; Leckie et al. 2016; Relling et al. 2016; Park and Kim 2014). The research conducted by the authors was aimed at testing whether the findings of others would also apply to the Polish brand fans.

The authors conducted an empirical quantitative research, by indirect data collection with the use of survey technique. It was carried out among a representative group of 650 Polish Internet users in the third quarter of 2017. However, the number of the answers for the questions discussed in this paper is limited only to those interviewees which had declared their participation in at least one virtual brand community located in the social media (277 respondents).

The two main questions in the questionnaire regarded the purchase decisions of the brand communities' members—whether they would choose to buy a brand of

which community they belong to, if given two products of similar features and price and finally whether they would choose the brand of which community they belong to even if it was more expensive. Additional data taken into account were the demographic aspects (sex, age, education level, etc.) and activity in the brand communities, e.g., reaction to posts or posting comments.

For further analysis, authors decided to investigate the connection between the fans' activity in the virtual brand community and the behavioral brand loyalty defined as purchase preference of a given brand (Romaniuk and Nenycz-Thiel 2013). The elements of activity on the fanpage included reacting to content in form of "likes" and use of other reaction buttons, posting comments, writing reviews, taking part in competitions and lotteries (also in those which demand sharing marketing content on fan's private profile). The method used for this part of research was logistic regression analysis (Akinci et al. 2007; Yeung and Yee 2011), which examines the relationship between one dependent dichotomous variable (purchase preference) and independent variables connected with demographic characteristics and activity on fanpages.

4 Research Findings

The answers for the two main questions (with the division into age groups) are presented in Table 1.

The answers of Polish Internet users showed that membership in virtual brand community indeed has a positive impact on purchase decisions and consequently on loyalty toward the brand. More than 62% of respondents declared that they would choose a brand of which virtual community they belong to if given a choice between two products of similar features and price. Membership in virtual brand communities impacts older people more than the youngest ones—only around 55% of social media users aged 18–24 and 25–34 choose brands known from virtual communities over others, while these values in groups of users aged 35–44, 55–64 and 65 and older are close or equal 80%. This might be surprising as those young people are considered to be generally the most affected by social media in their everyday life. An explanation for such results might be the fact that younger users join many communities, sometimes just "collecting" them on their profile as a mean of self-presentation, while they neither feel very attached to the brand nor use it regularly (or at all). On the other hand, older users get involved in fewer groups, usually of those brands they buy frequently or feel emotional connection with. There are also differences between sexes—men are more inclined to choose brands with which they are connected in social media (66.7% compared to 57.8% of women).

Second research problem regarded a situation where consumers faced the choice between a brand of which virtual community they belong to and other brand, while the products had similar features but the one connected with the community was more expensive. In this case, only 35.4% of respondents are willing to spend more in order to purchase products of brand connected with the communities they take part

Table 1 Purchase preferences of virtual brand community members according to age group

		Would you choose to buy a brand of which virtual community you belong to while making a choice between two products of similar features and price?						
		18-24	25-34	35-44	45-54	55-64	>65	Total
Yes		55.41%	54.13%	78.33%	62.50%	76.92%	80.00%	62.09%
No		44.59%	45.87%	21.67%	37.50%	23.08%	20.00%	37.91%
		Would you choose to buy a brand of which virtual community you belong to even if it was more expensive?						
		18-24	25-34	35-44	45-54	55-64	>65	Total
Yes		27.03%	26.61%	60.00%	37.50%	38.46%	40.00%	35.38%
No		72.97%	73.39%	40.00%	62.50%	61.54%	60.00%	64.62%

Source: Own elaboration based on empirical research

in. Similarly as in the first part of research, younger members show the greatest reluctance toward paying the surplus for products known from social media—only around 27% of both groups would choose the more expensive one. Older respondents also displayed more hesitation in selecting higher priced brands from the virtual communities. In case of social media users aged 45–54, 55–64 and 65 and older, the percentage of positive answers for this question is near or equal to 40%. The only group in which the willingness to choose more costly brands known from virtual brand communities is higher than 50% is the group of members aged from 35 to 44 years old—here the percentage of positive answers reached 60%. It might mean that this age range consist of more people in stable financial situation than the other groups. Additionally, consumers of this age value good quality as well as ownership of products of renowned brand and present greater readiness to spend more to acquire such products. Like in the case of first question, men present more enthusiasm toward purchase of products connected with virtual brand communities they participate in—positive answer was given by 40% of men in comparison with 31% of women.

The next part of the analysis employed the logistic regression method to test the impact of fans' activity on virtual brand communities' websites on purchase decisions in both pricing options.

First part of logistic regression analysis was connected with purchase decisions made between a product which brand community the respondent belongs to and a product of similar features without price difference between these two options. Based on the results, presented in Table 2, it might be stated that men choose the brand with which they are connected through social media slightly more often than women although this difference was not statistically significant ($OR = 1.481$; $p > 0.05$). Comparably, outcomes of no statistical significance were obtained in case of education level, place of residence, and declared personality type. Members with basic and secondary education level, in comparison with those who received higher education, represent only vaguely bigger chance of buying brands of which communities they participate in (respectively, odds ratio took values of 1.263 and 1.080, while p exceeded 0.05). Taking place of residence into consideration, it might be stated that this factor does not impact the purchase decisions—all the odds ratios' values were close to 1 ($p > 0.05$). Similarly, declared type of personality is also not a factor of importance.

The only statistically significant differences regarding demographic characteristics were observed in case of age groups. Community members aged from 35 to 44 years old shown almost three times bigger chance of choosing brands from the fanpages they partake in then the members from the youngest group ($OR = 2.910$; $p = 0.0064$), which is a statistically significant result. Moreover, middle-aged and older persons purchase the brands from their brand communities more frequently. Members aged 45–54 years old do this over 1.5 times more often, those aged 55–64 years old—more than 2.5 times, and community members aged 65 or older choose these brands over three times more often. However, these results are not statistically significant ($p > 0.05$).

Table 2 Impact of fans' activity on virtual brand communities' websites on purchase decisions (without price difference between products)—logistic regression analysis

Variable	OR	95% CI	<i>P</i>
Sex			
Man	1.481	0.906–2.422	0.115
Woman	1.000	Reference	
Age group			
18–24	1.000	Reference	
25–34	0.950	0.522–1.727	0.865
35–44	2.910	1.347–6.288	0.00635
45–54	1.610	0.498–5.202	0.424
55–64	2.683	0.678–10.62	0.157
≥65	3.220	0.340–30.52	0.306
Education level			
Basic	1.263	0.224–7.130	0.790
Secondary	1.080	0.632–1.845	0.778
Higher	1.000	Reference	
Place of residence			
City over 500,000 residents	0.818	0.386–1.736	0.600
City from 250,000 to 500,000 residents	1.357	0.388–4.742	0.631
City below 250,000 residents	1.102	0.460–2.640	0.826
Village	1.000	Reference	
Declared personality			
Extrovert	1.248	0.752–2.070	0.389
Introvert	1.000	Reference	
Reaction to fanpage's content ("like," etc.)			
No	1.000	Reference	
Yes	1.667	0.804–3.454	0.168
Posting comments to posts on fanpages			
No	1.000	Reference	
Yes	1.815	1.056–3.120	0.03019
Publishing brand reviews on fanpages			
No	1.000	Reference	
Yes	1.573	0.904–2.735	0.107
Participation in contests and lotteries organized on fanpages			
No	1.000	Reference	
Yes	1.503	0.907–2.492	0.112
Willingness to share marketing content in order to take part in a contest			
No	1.000	Reference	
Yes	1.747	1.037–2.943	0.03515

Source: Own elaboration based on empirical research

Another aspect of logistic regression analysis was connected with fans' activity on the virtual brand communities' websites and its impact on the purchase decisions in case of lack of price differences. The values obtained showed that members who

post comments on fanpages choose brands which communities they belong to substantially more often. They do so almost two times more frequently than those not commenting and this result is statistically significant (OR = 1.815; $p = 0.0302$). Similarly, community members who show willingness toward sharing marketing content for the purposes of contests and lotteries organized on the fanpages tend to be more loyal to the brands connected with these communities. They buy these brands almost two times more often than those consumers who take part in those events only if sharing special posts is not necessary (OR = 1.747; $p = 0.0351$). The members taking part in contests (without the requirement of sharing content on one's private profile) also choose the brands in question more often (1.5 times), but this values does not represent statistical significance.

In case of other types of activity on virtual brand communities websites, some differences can also be observed, however they are not statistically significant. Members who "likes" or reacted in other way to the content on the site buy the brands of which communities they belong to over 1.5 times more often than those who do not (OR = 1.667; $p > 0.05$). Likewise, those who publish reviews choose these brands 1.5 times more frequently in comparison with members who have never created a review (OR = 1.573; $p > 0.05$).

Second part of the analysis using logistic regression method involved purchase decisions made between a product which virtual brand community the interviewee belongs to and a product of similar features where the price of the first one is higher. The results of this analysis are presented in Table 3. Firstly, fans' demographic characteristics were taken into account. The results have shown that men more often than women (although insignificantly in terms of statistics) choose the products which fanpages they "like" despite the price difference (OR = 1.488; $p > 0.05$). Similarly, statistically insignificant values were obtained in case of education level of the respondents, their place of residence, and their declared type of personality. Interviewees which received basic and secondary education represent slightly bigger chance of choosing this more expensive brand they know from social media than those with higher education level (odds ratio respectively 1.525 and 1.411 with p exceeding 0.05). There are no significant differences depending on place of residence—the odds ratio barely exceeds 1. Moreover, the declared personality does not strongly impact the purchase decisions, although the extroverts were observed to buy more expensive brands known from fanpages slightly more often than introverts (OR = 1.2; $p > 0.05$).

The most interesting results among examined demographic characteristics were obtained in case of age groups. Respondents aged 35–44 choose brands around which they gather in virtual communities almost four times more often than the youngest group of consumers and this score is statistically significant (OR = 3.9; $p = 0.0003$). Similarly, fans aged 45–54, 55–64 and 65 or older represent chances of buying more expensive brand to some extent higher than the youngest ones—odds ratios achieved values of 1.56, 1.625, and 1.733, respectively, however these relations are not statistically significant.

The logistic regression included also variables connected with fans' activity on brand communities' websites. The analysis revealed that respondents who admit to

Table 3 Impact of fans' activity on virtual brand communities' websites on purchase decisions (where the product from brand community is more expensive)

Variable	OR	95% CI	<i>P</i>
Sex			
Man	1.488	0.904–2.449	0.116
Woman	1.000	Reference	
Age group			
18–24	1.000	Reference	
25–34	0.942	0.481–1.847	0.862
35–44	3.900	1.872–8.123	0.00026
45–54	1.560	0.498–4.884	0.443
55–64	1.625	0.472–5.595	0.439
≥65	1.733	0.267–11.25	0.563
Education level			
Basic	1.525	0.329–7.075	0.589
Secondary	1.411	0.825–2.412	0.207
Higher	1.000	Reference	
Place of residence			
City over 500,000 residents	1.302	0.596–2.845	0.507
City from 250,000 to 500,000 residents	1.591	0.477–5.302	0.448
City below 250,000 residents	1.224	0.502–2.981	0.655
Village	1.000	Reference	
Declared personality			
Extrovert	1.200	0.713–2.017	0.490
Introvert	1.000	Reference	
Reaction to fanpage's content ("like," etc.)			
No	1.000	Reference	
Yes	1.498	0.681–3.294	0.313
Posting comments to posts on fanpages			
No	1.000	Reference	
Yes	2.349	1.349–4.092	0.00244
Publishing brand reviews on fanpages			
No	1.000	Reference	
Yes	2.584	1.499–4.454	0.00059
Participation in contests and lotteries organized on fanpages			
No	1.000	Reference	
Yes	2.158	1.300–3.584	0.00281
Willingness to share marketing content in order to take part in a contest			
No	1.000	Reference	
Yes	2.315	1.387–3.863	0.00126

Source: Own elaboration based on empirical research

posting comments to content published on fanpages choose more expensive brands from virtual communities significantly more often—they buy such products almost 2.5 times more frequently than those users who do not reply to fanpage content

(OR = 2.349; $p = 0.0024$). Moreover, similar purchase decisions are made 2.5 times more often by the members who post reviews on social media, and it is a statistically significant result (OR = 2.584; $p = 0.0006$). Those fans who participate in various lotteries and contests organized on communities' websites (without the requirement of sharing content on one's private profile) choose brands from their communities substantially more often—over two times more frequently than fans who do not take part in such events (OR = 2.158; $p = 0.0028$). In case of competitions which require sharing marketing content on private profiles of community members, those who show willingness toward such actions purchase more expensive brands from virtual communities over two times more frequently than those who prefer not to repost information from marketers. The result is statistically significant (OR = 2.315; $p = 0.0013$).

5 Discussion

The study conducted by the authors has shown the influence of fans' demographic characteristics and activity on fanpages on the behavioral loyalty in form of purchase decisions—making the choice between the brand of the virtual community and other similar brand, in case when there is no price difference and when the community's brand is more expensive.

It can be seen that price is a crucial factor in making shopping decisions. Without price difference, most consumers choose the products from the communities they belong to, while when these products are more costly, the attachment to the brand community seems to lose its significance. There are differences between age groups. It might be stated that younger consumers are the least influenced by the virtual brand communities and therefore their loyalty does not depend on their online experiences on a scale it does in case of middle-aged and older people. It might be stated that the group with highest loyalty level is community members aged from 35 to 44 years old. Other demographic characteristics of fans did not appear to have a significant impact on purchase decisions. Consequently, Hypothesis 1 is partially supported.

As it had been supposed, consumers' activity on virtual brand communities' websites influences their shopping preferences, especially in case of price difference between brands. In both examined cases, the logistic regression analysis proved that fans who post comments and show readiness to share marketing content on their private profiles are choosing brands known from virtual communities significantly more often. Additionally, writing reviews on fanpages and general willingness to take part in competitions and lotteries organized by brands' representatives positively influence purchase decisions in case of price difference between two brands. The only activity which seems to be insignificant when it comes to brand loyalty is using reaction buttons (such as "like" or "wow"), probably due to the fact that reactions require close to no engagement in community's life and are used also by user not attached emotionally to the brand. Hence, Hypothesis 2 is supported.

It has to be underlined that each action of the community members is visible to their friends with whom they are connected through the network—the occurrence of using the reaction button or publishing content on the fanpage is shown on the private newsfeed of the fan. In this way marketing communication is spread in nonlinear way, and brand awareness may be built among users outside of the community. The conclusions of the conducted research are presented with the caveat as to the limitations of the sample—only Internet users from Poland have completed the questionnaire. In order to present a more comprehensive view of the topic, the research could also be repeated in other countries. Moreover, interesting results might be obtained in similar study, which this time would examine the brand communities' influence on loyalty depending on the sector in which the brands operate.

6 Conclusion

One of the most important new channels of marketing content transmission is the virtual brand communities, consumer groups (or neo-tribes) gathered around fanpages connected with certain brands. Those communities became an extremely important place of opinion exchange and a source, for some consumers the only one, of information regarding e.g., additions to the offer, sales, and promotions. Moreover, various research has proven that membership in virtual community has an impact on the loyalty to the brand.

The study confirmed a positive influence participation in brand communities on consumers' purchase decisions. However, authors found out that price difference seems to be more important than the emotional attachment to the brand. The logistic regression analysis proved that fans who present a high level of activity on the fanpages are more likely to choose the brand of which community they belong to, especially when price disparity occurs. On the managerial level, the research highlights how brands can benefit from efficiently executed marketing strategy regarding social media and fanpages. Marketers should seek increasing consumers' engagement in community's operation by promoting activities such as posting comments, reviews, and participation in contests and lotteries. Proper actions undertaken by brand's representatives may result in intensified dialog on the fanpages, leading to improvements in terms of brand loyalty and favorable purchase decisions.

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Part III
Tourism

The Comparison of the United Kingdom and Indonesia on Airbnb's Marketing Communication Strategy



Diva Arya Saskia Putri

Abstract The objective of this research is to compare young adults in the UK and Indonesia regarding the most important factors that guided them to choose a lodging, brand awareness, and their opinions about Airbnb marketing communication to find out the reason behind the website traffic differences. The method was a mixed method, with an online questionnaire using snowball sampling to recruit young adult respondents from both countries and an in-depth interview with ten Airbnb users: five people from the UK and five others from Indonesia. The analyzed data used SPSS for the quantitative data and a thematic coding with NVivo for the qualitative data. Findings identified that reputation, review, website quality, security, staff behaviour, cleanliness, exterior appearance, location, and access to public transportation are the most important factors in choosing a holiday accommodation in both countries. People in the UK tend to care about the price, while in Indonesia the facility is more important. In the UK, they had discovered Airbnb mostly from Facebook and Snapchat, while in Indonesia they had heard it from Instagram before they decided to use and access the Airbnb website.

Keywords Airbnb · Sharing economy · Marketing communication · Brand awareness · UK · Indonesia

1 Introduction

Airbnb is a part of collaborative consumption called as the peer-to-peer service or the sharing economy to obtain, give, or share the access to goods and services coordinated over community-based online services (Hamari et al. 2016). Airbnb has become very popular among young adults and grown rapidly in the past several years (Gibbs et al. 2018). Based on a website analysis report (SimilarWeb 2018),

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there is a significant difference between Airbnb website visitors who access from the UK and Indonesia. Furthermore, based on the data retrieved from the SimilarWeb (2018) website analysis overview report on March 2018, the UK had a higher number of website visitors on airbnb.co.uk domain with 35.67 M in comparison with Indonesian website visitors which was 1.761 M. Moreover, lots of studies were undertaken around the sharing economy in the context of peer-to-peer accommodation (Tussyadiah and Sigala 2018). Although the literature had covered a wide variety of theories to explain what motivates people to use peer-to-peer accommodation (Gallagher 2017), this chapter will primarily focus on showing people's motivation based on a different residence setting. The objective of this research was to find out the reason behind the website traffic differences by collecting data from young adults who live in the UK and Indonesia and to analyze Airbnb customer experience to determine if there is a difference regarding the factors they prefer when they choose a holiday accommodation, brand awareness, and their opinions about Airbnb's marketing communication strategy. In detail, this chapter aims:

1. To find out if there is a difference in factors of choosing a holiday accommodation between young adults who live in the UK and Indonesia
2. To find out if there is a difference in brand awareness of Airbnb between young adults who live in the UK and Indonesia
3. To find out if there is a difference in opinions regarding Airbnb's marketing communication between young adults who live in the UK and Indonesia

The findings identified from the online survey and supported by the interview results are that the reputation, review, website quality, security, staff behavior, cleanliness, exterior appearance, location, and access to public transportation of the holiday accommodation are the most important factors that guided people to choose a holiday accommodation in both countries. People in the UK tend to care about the price of the accommodation, while in Indonesia the facility is more important. Both in the UK and Indonesia people are already familiar with the Airbnb concept. Both of them had heard of Airbnb from TV advertisement. Furthermore, in the UK they had heard it mostly from Facebook and Snapchat, while in Indonesia they had heard it from Instagram before they made a decision to use and access the Airbnb website. The findings are expected to be valuable in academics by contributing in the sharing economy research by undertaking research based on a different residence setting as well as giving insights for industries in improving their communication strategies based on a different residence setting.

2 Literature Review

2.1 Peer-to-Peer Accommodation Sharing Platform

Airbnb is one of the most representative platforms that occupy the hospitality market. It is a peer-to-peer transaction-based online marketplace that matches the

travelers who are looking for accommodations and the hosts who wish to share their free or spare space. They depict themselves as a trustworthy community marketplace for travelers to list, discover, and book accommodation from all over the world (Guttentag 2015). Airbnb enables homeowners to make money by renting out their homes and disrupting the hotel. In the UK and Indonesia, Airbnb is a disruptor because it performs disruptive innovation with modern business models (Christensen et al. 2003). Moreover, the article “Airbnb: Disruptive innovation and the rise of an informal tourism accommodation sector” by Guttentag (2015) will also help the researcher to understand how Airbnb’s business model works. Moreover, Ikkala and Lampinen (2015) investigated the practices of hosts on Airbnb and found that they really utilize their reputational capital to set the price of their accommodation services, “examining the influencing factors of intention to share accommodations in online hospitality exchange networks.” As a marketing implication, the researcher suggests the importance of understanding the motivation of choosing a holiday accommodation based on a different residence setting as the backbone of website traffic of Airbnb the peer-to-peer accommodation platform.

2.2 Young Adult Intention to Use Airbnb

According to SimilarWeb (2018), SimilarWeb is a global multi-device market intelligence to understand, track, and grow a digital market share, showing that Airbnb website users are basically people of ages from 18 to 34, which was the reason the researcher targeted young adult participants in the age range of 18–35 years.

2.3 Airbnb Brand Awareness and Marketing Communication Strategy

Airbnb users might rely more on using social media and people’s reviews posted on the social media (Sparks and Browning 2011), and according to Yannopoulou et al. (2013), social media plays a significant role in Airbnb’s growth and development.

3 Methodology

The research is an exploratory research because the researcher is looking for new knowledge and determining reasons for certain behaviors. The method used in this research was a mixed method (quantitative and qualitative): deductive research methodology for quantitative method such as online survey and inductive research

methodology for qualitative method such as interview with thematic coding to analyze the result. Data were collected from an online questionnaire using snowball sampling to recruit young adult respondents from both countries for 10 days from 10 April 2018 to 20 April 2018 (a total of 98 participants were selected, of which 53 people were from Indonesia and 45 others were living in the UK) and an in-depth interview with 10 young adults in the ages between 18 and 35 who had experience of using Airbnb in the last 12 months, of which 5 respondents who live in the UK had a face-to-face interview and 5 other respondents from Indonesia were interviewed by Skype video call to understand the customer experience of using Airbnb.

In the first part, the researcher provided an online questionnaire and spread it out to both young adults in the UK and Indonesia and, in the second part, presented the lists of interview questions for ten Airbnb users from the UK and Indonesia in the age group of 18 and 35 years to understand their customer experience of using Airbnb. In the first part of the survey, the data were collected using online survey in Google forms with research consent in the beginning of the survey. The research questions detail:

1. Is there a difference in factors of choosing a holiday accommodation between young adults who live in the UK and Indonesia?
2. Is there a difference in brand awareness of Airbnb between young adults who live in the UK and Indonesia?
3. Is there a difference in opinions regarding Airbnb's marketing communication between young adults who live in the UK and Indonesia?

In the second part, for the interview questions were open-ended; the data collection was a face-to-face interview and a Skype interview with a consent form needed to be signed before starting the interview or respondents could also send the signed consent form back to the researcher via e-mail. Finally, to analyze the data, researcher used Excel and SPSS for the quantitative data and a thematic coding with NVivo for the qualitative data based on the interview results to understand Airbnb customer experience. The findings of both methods are shared below.

4 Findings and Discussion

4.1 Online Survey Design and Findings (Quantitative Method)

The online survey questions were constructed into 31 questions and 11 questions about participants' background and one question regarding participant's consent to participate in the research; it was designed to ask the participants about, first, their residence for which the researcher only requires participants who live in the UK and Indonesia, second, their international trips in the last 12 months, third, experience of using an online booking accommodation, and lastly their experience of using

Airbnb, whether they are Airbnb customer or not. This leads us to find out if there is a difference in factors of choosing a holiday accommodation between young adults who live in the UK and Indonesia, which can also be assessed from their brand awareness of Airbnb with questions related to Airbnb brand recall and brand recognition before the researcher asked about their opinions regarding Airbnb marketing communication strategy. Before sending out the survey, the researcher did pilot testing to make sure that the instruction and survey questions are easy to understand by the participants. From pilot testing the researcher found out that the time required to finish all 43 questions was 10–15 min which is thought to be reasonable; after the survey was finalized, the researcher loaded the questions through the Google form including participant consent to participate in the research before they started to fill out the survey questions.

The researcher used the snowball sampling techniques to approach the participants, starting from the researcher’s personal contacts and requesting family, friends, and colleagues to complete the survey to participate in the research. The researcher also asked the participants to help the researcher forward the survey link to their contacts with a request for participating in this research. Finally, the researcher succeeded in collecting 98 potential participants in 10 days of time planned for collecting the data from 10 April 2018 to 20 April 2018. Before data analysis, the researcher needs to separate the data based on the screening questions which are, first, no, they have never heard of Airbnb; second, they have heard of Airbnb, but never visited the website or mobile apps; third, they have visited the website or mobile apps, but never booked; and finally, yes, they are an Airbnb user; thus, the researcher needed to eliminate only those who have never heard of Airbnb, which are 9 people. Thereupon, from the 98 potential participants, only 89 (90.8%) participants who met the screening criteria and their responses were taken for further analysis. From these 89 participants, the researcher learned that the total number of young adults who live in Indonesia who have heard of Airbnb but never visited the website or mobile apps, have visited the website or mobile apps but never booked, and are an Airbnb user is 45 (50.5%) participants, while in the UK, it is 44 participants (49.5%) (see Table 1 for sample characteristics).

The survey question was adapted from a past study (Varma et al. 2016) and was pre-checked and confirmed by the researcher’s supervisor before the survey was

Table 1 Sample characteristics

		No, never heard about it	Heard of Airbnb, but never visited the website or mobile apps	Visited the website or mobile apps, but never booked	Yes, I am Airbnb user
Where do you live now?	Indonesia	8	5	13	27
	UK	1	9	10	25

Source: Table compiled by the author

Note: Answers to “Have you had experience of using Airbnb (peer-to-peer accommodation) before?”

launched. The survey question starts from demographic questions (see Table 2; Sample characteristic without the 9 participants who have never heard of Airbnb in both countries); it includes participant's gender, age, current education, record of last 12 months international trips, experience of booking accommodation online, experience of using Airbnb, and participant's residence, whether it is based in the UK or in Indonesia. The data shows that 67.4% of the survey participants were female and 32.6% were male. Based on their age, 76.4% of the survey participants were between 18 and 24 years, 19.1% were people with ages between 25 and 34, and the last group of participants were 35 or older. Regarding the education level, 4.5% participants reported having a high school degree, 22.5% having a college degree, 49.4% reported having a bachelor's degree, while 21.4% having a master's degree, and finally, 2.2% having a PhD. In terms of the international trips they had in the last 12 months, people who had 0 times international trips were 11.2%, 68.6% were having 1–3 times of international trips, while 15.7% having 4–6 times international trips in the last 12 months, and the others having 7 or more times of international

Table 2 Sample characteristic without the 9 participants who have never heard of Airbnb in both countries

What is your gender?	Female	60
	Male	29
What is your age?	18–24	68
	25–34	17
	35 or older	4
What is your current education?	High school	4
	College	20
	Bachelor's	44
	Master's	19
	Doctorate	2
International trips in the past 12 months	0 times	10
	1–3 times	61
	4–6 times	14
	7 or more times	4
Have you had experience of booking accommodations online?	Yes	85
	No	4
Have you had experience of using Airbnb (peer to peer accommodation) before?	No, never heard about it	0
	Heard of Airbnb, but never visited the website or mobile apps	14
	Heard of Airbnb, but never visited the website or mobile apps	14
	Visited the website or mobile apps, but never booked	23
	Yes, I am Airbnb user	52
Where do you live now?	Indonesia	45
	UK	44

Source: Table compiled by the author

trips in the last 12 months were 4.5%. 95.5% reported that they had experience of booking accommodation online, while 4.5% had no experience of booking accommodation online. After the researcher removed 9 participants who had never heard of Airbnb for further analysis, people who have heard of Airbnb but never visited the website or mobile apps were 15.8%, who have visited the website or mobile apps but never booked 25.8%, and who are Airbnb users 58.4%. Finally, 50.5% of the participants live in Indonesia, while 49.5% live in the UK.

The survey questions consisted of three parts, with the first part given to 89 participants; the questions were about the importance of factors in choosing a holiday accommodation, a comparison between young adults who live in the UK and Indonesia during the past 12 months. The second part was conducted to test the brand awareness of Airbnb among young adults who live in the UK and Indonesia; the questions including brand recall and brand awareness were conducted for participants who had past experience with Airbnb, and it also consists of questions regarding their experiences with Airbnb. In the third section, the questions were conducted for young adults who live in the UK and Indonesia about their opinions regarding Airbnb marketing communication channels. In the next part, the researcher presents the key findings from the online survey results.

4.1.1 Factors for Selecting a Holiday Accommodation

The first part consists of 20 questions, using a 5-point Likert scale (lowest, low, neutral, high, highest) in relation to the factors used by the young adults who live in the UK in comparison with young adults who live in Indonesia on selecting a holiday accommodation.

To check whether there is a difference in the first part between young adults who live in the UK and Indonesia, the researcher conducted ANOVA test, the results of which disclosed significant differences between these two different groups of residence in relation to some factors: commercials and travel magazines ($F(1, 87) = 4.022$; $p < 0.05$), relatives' recommendations ($F(1, 87) = 3.454$; $p < 0.05$), parking availability ($F(1, 87) = 6.411$; $p < 0.00$), and loyalty program participation ($F(1, 87) = 4.294$; $p < 0.05$); therefore, the factors in the intersections were equally important as well as unimportant for both groups of residence, while in the non-intersecting area were more important for both groups. In a nutshell, the key findings are presented below.

4.1.2 Brand Awareness of Airbnb

The second part consists of 9 questions, using multiple choice question for questions number 21, 23, 25; checkbox—people can select all answers that apply for questions number 24 and 26; short answer text (qualitative question) for questions number 22 and 29; a 5-point Likert scale for question number 27 (strongly disagree, disagree, neutral, agree, strongly agree); and a 10-point Likert scale for question number

29 (from not likely until extremely likely). The questions are in relation to the brand awareness of Airbnb between young adults who live in the UK and Indonesia.

To check whether there is a difference in the second part between young adults who live in the UK and Indonesia, the researcher conducted ANOVA test, the results of which disclosed significant differences between these two different groups of residence in relation to the brand awareness of the Airbnb platform: home away ($F = 4.319$; $p < 0.05$), flip key ($F = 3.219$; $p < 0.05$), public transportation ($F = 3.219$; $p < 0.05$), and I don't remember hearing about or seeing advertising for this brand in the last 3 months ($F = 5.376$; $p < 0.00$); therefore, the factors in the intersections were equally important as well as unimportant for both groups of residence, while in the non-intersecting area were more important for both groups. In a nutshell, the key findings are presented below.

4.1.3 Opinions Regarding Airbnb's Marketing Communication

The third part consists of two questions, people can select all answers using checkbox that apply to questions number 30 and 31 in relation to opinions regarding Airbnb's marketing communication between young adults who live in the UK and Indonesia. To check whether there is a difference in the third part between young adults who live in the UK and Indonesia, the researcher conducted ANOVA test, the results of which disclosed significant differences between these two different groups of residence in relation to opinions regarding Airbnb's marketing communication: mobile apps for iOS and Android ($F = 3.348$; $p < 0.05$), e-mail ($F = 3.426$; $p < 0.05$), Instagram ($F = 13.052$; $p < 0.00$), Line/WhatsApp/WeChat ($F = 4.247$; $p < 0.05$), and I don't share this type of information online ($F = 8.842$; $p < 0.00$); therefore, the factors in the intersections were equally important as well as unimportant for both groups of residence, while in the non-intersecting area were more important for both groups. In a nutshell, the key findings are presented below.

4.2 Interview Design and Findings (Qualitative Method)

Additionally, the researcher also conducted in-depth interviews with ten Airbnb users both in the UK and Indonesia to understand their experience of using Airbnb. The questions were designed to understand Airbnb customer experience based on different residence settings; hence, the researcher selected five respondents from UK and five others from Indonesia; both were in the range age of 18–35 years, each interview took around 30 min, and each participant was asked to sign the research consent form to confirm their agreement to voluntarily participate in the research project and their answers will be anonymous. The researcher used thematic analysis (Braun et al. 2014) with an exploratory coding to understand what is happening.

Below are the findings for each question (Note: UR—United Kingdom residence; IR—Indonesia residence).

1. The first question was about Airbnb brand awareness for both participants from the UK and Indonesia by asking them to explain what do they know about Airbnb in their own words. Both in the UK and Indonesia people are already familiar with the Airbnb concept. One UK respondent said, “Basically, Airbnb it’s just a platform that provide people to share their spare room or their house if they don’t need, with the people that need their help, basically it’s sort of like hotel, but you got a chance to actually use their house” (UR5, Male), and one of the Indonesian respondents said, “Airbnb is a place that you can rent, is not a hotel, but is more like a homestay or you know if you have a free place in your house you can also rent it out, I think Airbnb is perfect for someone for traveling but at the same time they want to save money” (IR4, Female).
2. The second was about Airbnb brand awareness by asking them how they had heard about Airbnb. In the UK, people had heard it mostly from Facebook and Snapchat, while in Indonesia people had heard it from Instagram before they made a decision to use and access the Airbnb website. A participant from the UK said: “I have seen it a lot from snapchat, on Facebook mainly those two” (UR2, Male), while an Indonesian participant said, “lot of advertising about Airbnb, Instagram mostly I see it there” (IR2, Female).
3. The third question was about their motivation or reason for using Airbnb. Price is the most important factors that guided people from the UK on choosing a holiday accommodation, while in Indonesia the facility is the most important; for instance, a respondent from the UK said, “First of all, its save money, and see if the experience is similar in terms of quality compare to a hotel, because if the experience is similar and you can pay less for Airbnb, then each time I was travelling with Airbnb you know”(UR1, Female), and participants from Indonesia said, “Airbnb is the best way, with a good facility” (IR1, Female) as well as “the facility is really good” (IR3, Female).
4. The fourth question was about their opinion of Airbnb (official website and App) content. The participants both based in the UK and Indonesia said that the content is good. A participant from the UK said, “The content is good they have a lot of information and I like to read the review as well because the review says a lot about the house, because is a house is not a hotel so you want to know what was people experienced about it” (UR4, Female), while an Indonesian participant said, “I think Airbnb has got user interface and user experiences that are easy to use and the information they have is transparent and everything you need to know is there, they state explicitly that if you need more information you can contact the owner of the properties itself, so I think it’s already really good” (IR2, Female).
5. The fifth question was how was their past experience of using Airbnb on a scale of 1–10 (lowest to highest) and why they gave that rating. People in the UK tend to care about a cheaper price of the accommodation, while for people in Indonesia the Airbnb facility is more important. One UK respondent said: “I would say

10, it's very simple very cheap" (UR2, Male), while an Indonesian respondent said: "8, it's already really good, for example, simple things, I can get washer, I don't need to bring lot of cloth, I get kitchen fully stock with ingredients (oil, and portable Wi-Fi), I don't need to buy internet or credits because I've got the portable Wi-Fi from the host" (IR2, Female).

6. The last question was how likely would they recommend Airbnb to their friends or colleagues on a scale of 1–10 (lowest to highest) and why they gave that rating. A respondent from the UK said, "I would say 10, because whoever is going anywhere travelling I always tell them use Airbnb because it's cheap and it's good" (UR2, Male), while the Indonesian respondent said, "I think 8.5 because from the facility, payment method until stay in the room it's easy and very worth it, it's also easy to learn" (IR1, Female).

The findings are expected to be valuable in academics by contributing in the sharing economy research by undertaking research based on different residence settings as well as giving insights for industries in improving their communication strategies based on a different residence setting.

5 Conclusions and Recommendations

5.1 Conclusion

Therefore, the aim of this research was to find out the reason behind the website traffic differences by collecting data from young adults who live in the UK and Indonesia and analyzing Airbnb customer experience to determine if there is a difference regarding the factors they prefer when choosing a holiday accommodation, brand awareness, and their opinions about Airbnb's marketing communication strategy. The method used in this research was a mixed method influenced by previous studies on the topic regarding people's motivation of using Airbnb, with an online questionnaire using snowball sampling to recruit young adult respondents from both countries and an in-depth interview with ten Airbnb users, of which five people were from the UK and five from Indonesia. The analyzing data used Excel and SPSS for the quantitative data and a thematic coding with NVivo for the qualitative data based on the interview results to understand Airbnb customer experience. Findings identified from the online survey and supported by the interview results are that the reputation, review, website quality, security, staff behavior, cleanliness, exterior appearance, location, and access to public transportation of the holiday accommodation are the most important factors that guided people to choose a holiday accommodation in both countries. People in the UK tend to care about the price of the accommodation, while in Indonesia the facility is more important. Both in the UK and Indonesia people are already familiar with the Airbnb concept; both of the UK and Indonesian residents have heard of Airbnb from TV advertisement. Furthermore, in the UK they have heard it mostly from Facebook and Snapchat,

while in Indonesia they have heard it from Instagram before they made a decision to use and access the Airbnb website.

5.2 *Limitations*

This research found some insights regarding the different motivations based on different residence settings; however, there are certain limitations: first, due to limited time the number of participants is too little to represent a population—future studies should endeavor to use samples that better represent the population, and second, for the interview participants, the researcher only had respondents from a homogeny background which was university students with Airbnb experiences—further studies should endeavor to use heterogeneity respondents with a different educational and economic background; hence, the answer can be more comprehensive in representing young adults sample.

5.3 *Recommendation*

Altogether, this research is expected to be of value in academics by contributing in the sharing economy research by undertaking research as well as giving insights for industries in improving their communication strategies based on a different residence setting. Furthermore, for further studies we can compare another different residence to see whether there will be a different motivation such as these research findings. Further research should also ensure that both the survey participants and interview respondents are more representative of the relevant populations.

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Associative Perception of Latvia as a Travel Destination in European Target Markets



Ilze Medne and Kristine Berzina

Abstract The image of the destination and its perception play an important role in distinguishing objectively comparable alternatives. The aim of the research was to find out the associative perceptions of Latvia as a tourism destination in Latvia's target markets in Europe, as well as to investigate whether the current and potential Latvian tourism brands correspond with the associations of the people of these markets about holiday travel. The study involved data of three face-to-face surveys conducted in several places in Germany, Switzerland, and Austria in the summer of 2015, 2016, and 2017. The questionnaire was made to determine the recognition and the image of Latvia as tourism destination as well as to determine the associations relating to Latvia expressed with keywords and colors. For data analyses following methods were used: descriptive statistics, cross tabulation, data correlation, network analyses, and visualizations. Main results and findings of the study are addressed to organizations that are responsible for tourism image development in Latvia, to evaluate destination branding and improve marketing communication. Research result analyses confirmed that the German, Swiss, and Austrian residents' associations with Latvia and associations with holiday travel expressed in colors correspond with each other and with color concept of former Latvian tourism logo 'Latvia. Best enjoyed slowly'.

Keywords Destination · Perception · Associations · Brand · Image

1 Introduction

Competition between tourist destinations has moved from international to global level in the twenty-first century; tourists have a possibility to choose their destinations out of hundreds of possible options. Therefore, perception of the destination image plays a crucial role in differentiating between similar travels alternatives. The

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destination image is a complex phenomenon that includes from one side tangible and verifiable destination attributes, as well as psychological nature and feelings related to the destination that are perceived by tourist's emotions. Although the importance of the usage of colors for brand identity development has been theoretically acknowledged from many marketing researchers, there is a lack of detailed empirical research using quantitative analyses methods.

Since the restoration of independence in 1991, Latvia as the destination has been promoted in the international tourism market using several brands: the first of brands used slogan "Latvia—the Land that sings" which was created in 2002 but was not successful and was replaced by "Latvia. Best enjoyed slowly" in 2010. The main idea of the Latvian tourism brand concept "Latvia. Best enjoyed slowly" is using current tourism trend inviting tourists to slow down their active pace of life, to stop for a while and enjoy a slow and peaceful recreation and think what is important in our lives. The core values of Latvian tourism brand as described by Investment and Development Agency of Latvia (LIAA 2016) are from on the one side lightness of pure nature and on the other side truthfulness, profoundness, self-respect of culture and people of Latvia. "Latvia. Best enjoyed slowly" encourages tourists staying longer and motivating them enjoying things that is possible only using longer time and being in peace. The examples on how to enjoy it uncover the feelings that can be captured by drinking a tea that can be enjoyed only slowly and feeling the nature via bird songs that can be heard only by paying attention and being in silence (LIAA 2016). The color concept of the Latvian tourism brand was based on the different shades of green, blue, and white color. The brand concept "Latvia. Best enjoyed slowly" was very successful as evidenced by prominent institutions—Latvia received the very high position as sixth in the top of the best destination slogans in the world ranking of destination slogans carried out in the year 2016 (Haines 2016). Another recognition has been made by Europe Travel Slogan Olympics which nominated nine slogans that were chosen as most successful in order to carry out voting for the best ones. Slogan of Latvia was among much known destinations in Belgium, Switzerland, Germany, Ireland, Italy, as well as Montenegro, Serbia and Slovakia (NOZARE.LV 2011). Just recently for the promotion of Latvia as a country and as a destination in foreign markets, it has used the slogan and graphic symbol "Magnetic Latvia," whose ideological and visual concept differs significantly from the previously used brand. The new brand is most often used in black (or gray) and white. "Magnetic Latvia" is the new communication platform for Investment and Development Agency of Latvia which is also used to promote Latvia as a tourist destination in international markets including German-speaking European target markets Germany, Switzerland, and Austria, that will be used for further analyses.

Germany has been in the top of the list of the most important tourism market already since the independence of Latvia. Indications for the importance of the German market by the share in the number of tourists can be stated by its second place in the flow of the overnight travelers (after Latvia's neighboring country Russia). Additionally to the large proportion, the tendency of a sharp increase of German travelers (+69.3%) during the last 5 years shows the growing significance for destination (see Table 1).

Table 1 Number of German, Swiss, and Austrian overnight travelers in Latvian tourist accommodations in 2013–2017

	2013	2014	2015	2016	2017	2017/2013 (%)
Germany	122,737	168,707	178,584	187,820	207,835	169.3
Switzerland	11,027	13,904	18,287	18,591	20,982	190.3
Austria	11,251	15,747	13,528	14,017	16,212	144.1

Source: Author’s calculations based on Database of Central Statistical Bureau of Latvia, 2013–2017

Germany as determined in the Latvian tourism marketing strategy is one of the high-priority tourism target markets of Latvia. Accordingly, the promotion package in the German market is wider, which means that Latvia’s visibility should be better and perception more objective. Switzerland and Austria are secondary target markets of Latvia as a tourism destination. Nevertheless, the number of overnight travelers from these European countries in the last 5 years has increased by 90.3% and 44.1%, respectively.

That way the aim of the chapter is to study the associative perceptions of Latvia as a tourism destination in German, Swiss, and Austrian target markets. The motivation of the chapter is to test whether the current and potential Latvian tourism brands correspond with the associations of the people of these markets about holiday travel. Findings of the chapter are addressed to Investment and Development Agency of Latvia to evaluate current destination branding and improve marketing communication. The main finding of the chapter confirms that the German, Swiss, and Austrian residents’ associations with Latvia and associations with holiday travel expressed in colors correspond with each other and with color logo concept of former Latvian tourism logo ‘Latvia.

In order to reach the aim of the chapter, following structure has been developed—theoretical background on destination image concept and use of colors as a part of marketing communications; substantiation of the research methodology; proceeded by research findings; summarized by conclusions; discussion, limitations and future lines of research.

2 Theoretical Background

Importance of destination image perception is gained due to global competition among tourist destinations when tourists are choosing their destinations out of huge variety of possible travel options. Tourism destination as a set of diverse natural and cultural resources comprises work of variety of different stakeholders who are involved in the cocreation of the final tourism products and coordinated by destination management organizations that need to be reflected in destination image (Séraphin et al. 2016; Michalkova and Furova 2017). Survival within a globally competitive marketplace where various destinations compete on so intensive basis

creation of a differentiated destination image has become more critical (Qu et al. 2011; Kim et al. 2017).

Destination consists from multiple parts in most cases including similar features such as attractive scenery, quality and accessibility of accommodations, friendly atmosphere, and attitude of local inhabitants; therefore, destinations need to concentrate on destination image and branding, its uniqueness and differentiation in order to be identified among rivals and differentiated from alternative destinations in the minds of the tourists of target markets (Qu et al. 2011).

The use of brand differentiators from the point of view of aspects that are important for consumers has been considered an appropriate strategy for companies operating in globally competitive markets (Tasci et al. 2017), especially in such industry as tourism. Destination image includes different attributes that can be classified as tangible and intangible attributes. Tangible destination attributes are verifiable destination attributes and especially interesting for analyses are those intangible aspects that can be characterized as perceptions of more psychological nature including emotions regarding that destination. Destination image comprises many elements, such as national symbols, colors, clothing, typical buildings, objects, tunes, pieces of literature, specialties of the political system, customs, historical heritage, and many more (Stepchenkova and Li 2014).

Destination images in the mind of tourists could be as important as its actual destination attributes in terms of market competitiveness, and several researches show image as critical factor in the destination choice process (Mayo 1973; Hunt 1975; Pike 2016); therefore, destination image and its perception play a significant role in differentiating between objectively alike alternatives. In the destination management process that can be seen as complex network management (Scott et al. 2008) all actors and stakeholder groups that sometimes comprise even conflicting interests should be simultaneously involved in the strategic process of destination development and promotion and that they must reach a consensus (Michalkova and Furova 2017), including in destination image development.

Little research has been conducted describing the process of brand concept development by Destination Management Organizations (DMOs); still destination branding tends to be a more complex process than conventional product branding because of its amorphousness, wide set of public and private stakeholders' involvement, as well as variety of consumer segments (Cai 2002; Tasci et al. 2017). A logo is an important part of brand identity and gives possibility to recognize a brand as logo visually represents the essence of a brand and what the brand stands for, having potential tool to connect with customers by communicating and reinforcing a brand's core values (Park et al. 2013; Séraphin et al. 2016). From a global perspective, logos can be seen as visual communication to customers that in global environment are transcending international boundaries and language barriers (Séraphin et al. 2016). Destination logos should match the destination features by representing their identity, uniqueness and value, as well as the essence and objective, as some researchers indicate certain influence of logos on tourists' destination choice (Gallarza et al. 2002; Séraphin et al. 2016).

Colors are an integral part of marketing communications, and marketing practitioners use color consultants to help them determine which colors most appeal to their customers (Amsteus et al. 2015).

Research concerning the effect of color on decision-making process has been done mainly in consumer behavior science, including research on how color affects price perceptions, on consumers' feelings, purchase intention judgments, brand personality, and advertising perceptions (Puccinelli et al. 2013; De Bock et al. 2013; Kim et al. 2018).

The effectiveness of a visual logo depends on multiple design properties of the logo including logo color (Park et al. 2013; Séraphin et al. 2016). Color as one of the logo's elements defines a brand's identity and personality (Tasci et al. 2017). Colors can establish emotional links that could lead to gained competitive advantage, product differentiation, increased loyalty, boosted sales, shorter time until perception, prolonged time spent in the store, positive emotions and customer relationship, impulsive buying temptation, and increased intentions of repeat visits (Sliburyte and Skeryte 2014).

Specifics of tourism destination image are related to fact that destination usually comprises a variety of natural and cultural resources upon which a myriad of stakeholders work together to cocreate the final tourism product and because of the involvement of multiple organizations in creating the tourism product, it is frequently discussed among stakeholders determining the appropriate colors that best represent the destination (Séraphin et al. 2016).

As scholars indicate especially in tourism marketing and destination image communication has not been the area with outstanding optimization strategies of color usage and the analyses of different DMO logos state this viewpoint (Séraphin et al. 2016). The DMOs face quite complicated aim to select the appropriate color for their brand that not only represents the destination itself, but also can create intense image in the mind of tourists; therefore, DMOs should be aware of the significant importance of colors and their potential interpretation when designing a destination logo (Séraphin et al. 2016).

Although the importance and influence of colors for destination brand identity development has been theoretically acknowledged from many scholars, there is a lack of empirical research in tourism sector (Tasci et al. 2017), especially evidence of quantitative research and logo color usage practical application results; still the performance of color in a logo, if applied appropriately, could have influence on the destination image, attractiveness, its perceived value and even tourist loyalty level, that can result in increased competitiveness of a destination (Séraphin et al. 2016).

Another aspect of the proper choice of color in developing destination logos is related to the fact that color is one of the main tools that communicate the image of the destination, as it can attract attention, and speed up its recognition and perception. These are the reasons why such researchers as Tasci, Khalilzadeh, Piza, and Wang outline the importance for tourism marketing managers to develop a better understanding of the effects of color when working on the development of strong destination logos (Tasci et al. 2017). Along with marketing brand elements,

destination attributes like context, identity, and history are the key criteria that firms should take into account when deciding the colors of an effective logo (S raphin et al. 2016).

Although the power of colors has been theoretically acknowledged for brand (Kotler 2002) and also destination brand identity development (Cai 2002), there is a lack of empirical research on defining the brand color for a destination (Tasci et al. 2017). Colors as elements of sensory marketing is still little studied (Sliburyte and Skeryte 2014); using uniform colors across different markets has been recommended for more strategic destination branding although little research has been devoted to defining appropriate brand colors (Tasci et al. 2017).

Scholars indicate certain philological effects of different colors on the minds that make people predisposed to certain attitudes and behaviors (Tasci et al. 2017). It has been noted that warm, cold, and neutral colors and their associations are likely to be learned at different stages of peoples' lives, whereas associations that are somewhat universal and affected by culture are essentially more changeable by marketing stimuli (Adams et al. 2008; Chebat and Morrin 2007; Tasci et al. 2017). Researchers of color psychological aspects suggest that effect of warm colors such as reds, oranges, and yellows may have opposite effect compared with cool colors, such as blues, greens, and whites (Chebat and Morrin 2007).

Color associations both universally or culturally influenced affect consumer behavior by stimulating certain emotional reactions; for example, warm colors draw attention and excitement, as well as induce impulse buying that is applied by many retail companies sales and pricing strategies, whereas cold colors create calm and comfortable environments, easing consumers' decision-making, that can be effectively applied for more expensive products (Tasci et al. 2017).

Research of psychologist Wright (2018) shows that red is associated with strength, warmth, energy, basic survival, stimulation, masculinity, excitement, as well as from negative side with defiance, aggression. From marketing point of view red can be associated with price discounts and savings (Puccinelli et al. 2013; Kim et al. 2018). Wright (2018) states that blue as intellectually perceived color can be used as part of communication showing trust, efficiency, serenity, duty, logic, coolness, reflection, and calmness. Yellow is very warm and a positively perceived color showing optimism, confidence, self-esteem, friendliness, and creativity. Green as the color of balance represents harmony, balance, refreshment, rest, restoration, reassurance, environmental awareness, equilibrium, and peace. Even though violet can be used to show luxury, authenticity and quality, in some cultures, it has negative associations. Orange as the color of comfort can be used for food, warmth, security, sensuality, passion, abundance, and fun. Gray is quite neutral color, but from negative side it can be characterized with lack of energy. Black as sometimes associated with sophistication, glamor, and security can bring heaviness or coldness in perception. And on other hand white represents sterility, clarity, purity, cleanliness, and simplicity.

Researchers also note that consumer's reactions to colors can also be context of specific products, brands, and their functions (Tasci et al. 2017). Appropriate choice of color can promote brand and logo recognition and it can maintain consumer's

attention, still on other hand, the wrong color choice may hamper any communication between an organization and its target market, thus hurting brand awareness and any attempt to build a sustainable brand image (Amsteus et al. 2015).

Marketers who exploit the power of color when developing identities for their products and brands affect consumers' learned color associations (Tasci et al. 2017). While some researchers state that consumers' associations with colors are unchanging and general, others argue that color associations differ across a number of variables, including gender, age, and culture (Amsteus et al. 2015). As stated by researchers (Tasci et al. 2017), similar to general color preferences, brand color perceptions are also somewhat dependent on culture.

3 Research Methodology

To reach the aim of the study related to associative perceptions of Latvia as a tourism destination, a survey of German, Swiss, and Austrian residents was carried out. The face-to-face survey was conducted among local population in 2015 in Germany, in 2016 in Switzerland, and in 2017 in Austria using random sampling for data collection resulting in the gathering of 1260 valid questionnaires.

The demographic characteristics of the carried out sample indicates representatives of the sample taking into account active consumer population of Germany, Switzerland, and Austria, as the respondents tend to be younger in age and better educated as well as with higher incomes than the respective overall population average indicators (see Table 2). The research sample comprises respondents who are likely to reflect the views of consumers' knowledgeable about tourism and with potential interest in travel.

This research contained open-ended questions with three slots for possible responses. The chosen analysis for these questions was network analysis. Network analysis allows to visualize and gives insight of data, which otherwise is hard to comprehend.

Initially, data preparation with several steps of data cleansing and formatting was carried out. During this process unique answers and number of their occurrences were captured and counted. This data was stored in two lists—one with all unique answers and their frequency, and second with unique pairs and their frequency. Statistical programming language R was used for data preprocessing. After that the data was ready for network visualizations (or in this context—graphs), for which the R package *igraph* (Csardi and Nepusz 2006) was used. Input for the graph was a list of nodes and a list of edges. Those pairs which appeared less than 3 times were excluded from visualizations to avoid clutter in the result. Then a simple graph was plotted, where the size of a node was determined by the number of appearances for that word and thickness of an edge—by the number of times when the pair was mentioned together. In the result a network visualized by graph was obtained.

Table 2 Sample characteristics (% , $n = 1260$)

		Germany $n = 358$	Switzerland $n = 461$	Austria $n = 441$
Gender	Male	46.9	44.0	42.6
	Female	53.1	56.0	57.4
Age	18–24	42.4	51.3	58.0
	25–44	37.6	42.4	33.9
	45–64	15.7	5.5	5.7
	65+	4.2	0.9	2.3
Marital status	Single	44.8	62.7	66.3
	In relationship with husband/wife/partner	36.1	27.7	25.8
	Family with children	19.2	9.6	7.9
Education	Professional	12.7	26.7	13.2
	High school	26.0	24.9	24.2
	University/high school degree	53.5	42.1	53.7
	Other	7.8	6.4	8.8
Income level compared to an average income in the country	Below average	18.3	30.5	34.6
	Average	51.6	48.5	48.3
	Above average	25.5	18.5	14.0
	High	4.7	2.5	3.1

Source: Author's calculations based on survey data

4 Findings

In order to investigate whether the German, Swiss, and Austrian residents' associations of Latvia with certain colors meet the former and current Latvian tourism logo coloration, the open-ended question was used: "When you think about Latvia as a travel destination, what three colors come to your mind?" Regarding the colors associated with Latvia 24 different colors emerged. The Top 3 answers for respondents from all three countries are "blue" and different shades of blue (blue/light blue/dark blue), "green/light green," and "white/silver" (see Table 3).

The network visualization of data confirmed the results of the frequency analysis and clearly showed that the more common pair of colors that characterizes associations relating to Latvia are: for all respondents "blue-green" (377 unique pairs), "red-white" (330), and "blue-white" (327); for German respondents "blue-green" (84), "blue-white" (81), "red-white" (69), and "green-white" (60); for Swiss respondents "blue-green" (157), "blue-white" (127) "red-white" (117), and "green-white" (113); for Austrian respondents "red-white" (144), "blue-green" (136), and "blue-white" (119) (see Fig. 1).

To find out what color the German, Swiss, and Austrian residents associate with vacation/holidays, the respondents were asked: "When you think about your next vacation, what three colors come to your mind?" Respondents' answers revealed

Table 3 The associations relating to Latvia expressed with colors (% from all the answers)

	Germany <i>n</i> = 669 (%)	Switzerland <i>n</i> = 1127 (%)	Austria <i>n</i> = 1116 (%)
Amber/beige/blond	0.3	0.4	0.4
Black	1.0	1.7	1.3
Blue/light-blue/dark-blue	23.9	22.4	21.2
Brown/brick-red	3.3	3.4	3.6
Colorful	0.0	0.1	0.3
Gray	1.8	3.0	2.7
Green/light-green	21.7	21.9	21.2
Orange	0.3	1.0	1.2
Pink/purple	0.0	0.6	0.4
Red/dark-red/wine-red	19.4	17.5	19.8
Turquoise	0.0	0.1	0.2
White/silver	20.5	20.4	20.3
Yellow/light-yellow	7.8	7.5	7.6

Source: Author’s calculations based on survey data

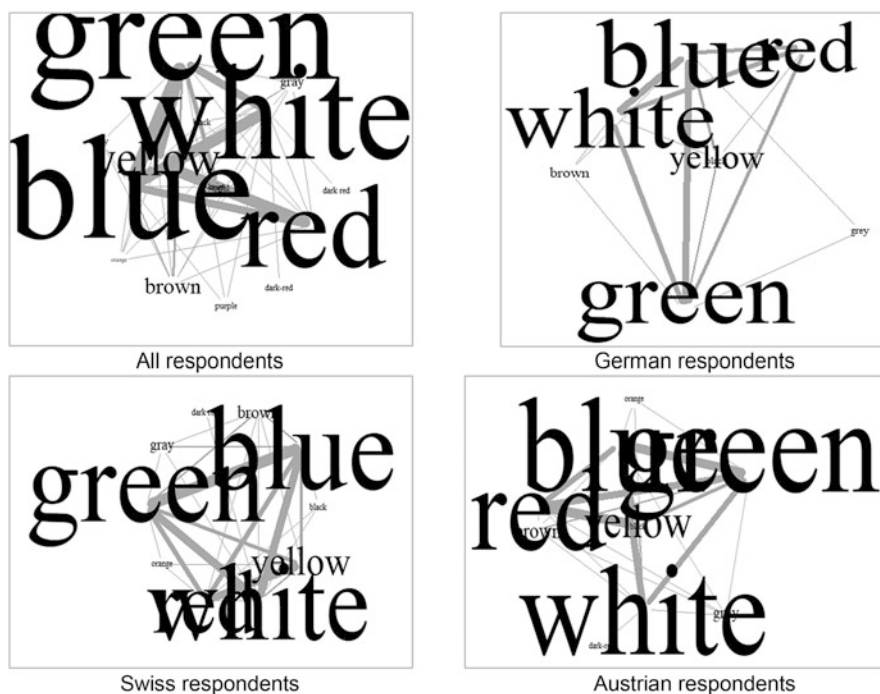


Fig. 1 Associations related to Latvia expressed with colors (Source: Author’s calculations and visualization based on survey data)

19 different colors. The Top 3 answers from all three countries were “Blue/dark-blue/light-blue,” “Green,” and “Yellow/gold,” and the next two most frequently named colors were “Red/dark-red” and “White” (see Table 4).

The network visualization of data showed that the more common pair of colors that characterizes associations relating to holiday travel are the same for all respondents: “blue-green” (507 unique pairs), “blue-yellow” (412), and “green-yellow” (296), and for all countries: for German respondents “blue-green” (112), “blue-yellow” (100), and “green-yellow” (69); for Swiss respondents “blue-green” (211), “blue-yellow” (159), “green-yellow” (117); for Austrian respondents “blue-green” (184), “blue-yellow” (153), “green-yellow” (110) (see Fig. 2).

Based on the outcomes of the survey, the following conclusion can be driven—the German, Swiss, and Austrian residents’ associations with Latvia compared with associations with holiday travel that were expressed in colors does correspond to each other as well as to color concept of former Latvian tourism logo “Latvia. Best enjoyed slowly” in which color concept was based on the different shades of green, blue, and white color. When checking the correlation between the intentions of respondents to travel to Latvia in the next 3 years and the match between color associations “associations relating to Latvia” and “associations relating to next vacation,” no linear relationship was found (correlation coefficients are in the range from 0.06 to 0.07).

The use of the open-ended question “When you think about Latvia as a travel destination, what three words come to your mind?” was applied to indicate what German, Swiss, and Austrian residents associate Latvia as the tourism destination with. The Top 3 answers for all three countries were the same; the only remark is that they were in a different order, outlining such geographical associations as “Riga,”

Table 4 The associations relating to holiday travel expressed with colors (% from all the answers)

	Germany <i>n</i> = 738 (%)	Switzerland <i>n</i> = 1223 (%)	Austria <i>n</i> = 1161 (%)
Beige	0.5	0.2	0.4
Black	1.6	1.5	1.1
Blue/dark-blue/light-blue	28.5	28.7	26.7
Brown/light-brown	1.4	2.3	2.5
Colorful	0.3	0.0	0.3
Gray	0.5	1.6	1.4
Green	21.8	21.3	20.5
Orange	1.9	3.0	3.4
Pink/purple	0.5	2.0	2.5
Red/dark-red	14.1	11.1	13.4
Turquoise	0.1	0.5	0.6
White	9.8	10.2	8.6
Yellow/gold	19.0	17.4	18.5

Source: Author’s calculations based on survey data

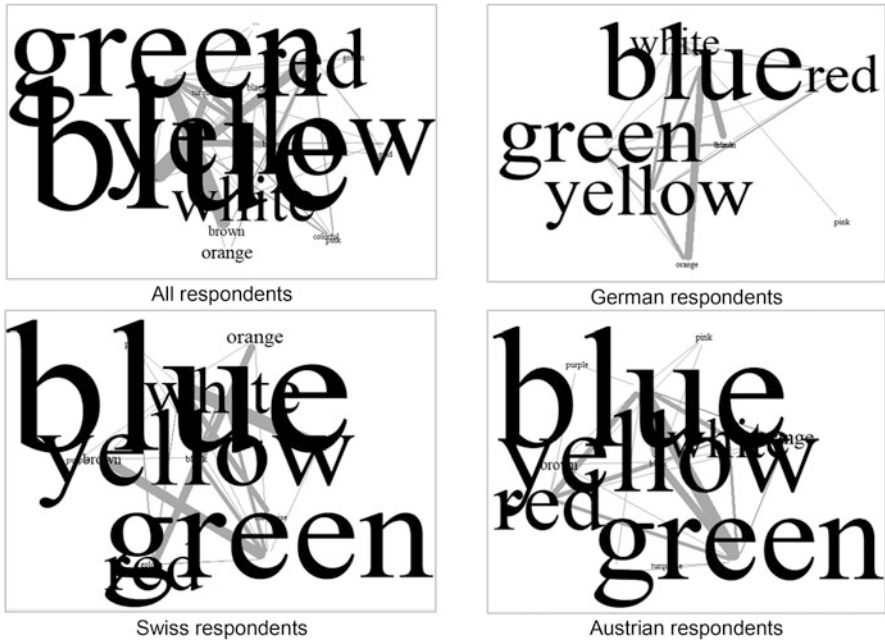


Fig. 2 Associations related to next vacation expressed with colors (Source: Author’s calculations and visualization based on survey data)

“Baltic/Baltic Sea/Baltic states,” as well as “Nature/landscape,” “Cold” (see Table 5).

The network visualization of data showed that the more common pair of keywords that characterizes associations relating to Latvia are: for all respondents “cold-north” (37 unique pairs), “cold-nature” (32), “Riga-sea” (25), “Estonia-Lithuania,” (24) and “Riga-Baltic” (22); for German respondents “Riga-Baltic” (14), “cold-nature” (9), “Lithuania-Estonia” (9); for Swiss respondents “cold-north” (20), “Riga-sea” (13), “cold-nature” (10); for Austrian respondents “cold-nature” (13), “cold-north” (12), “Riga-nature” (12) (see Fig. 3).

As can be seen from the results of the survey, most respondents associate Latvia with its location in the north-east of Europe, expressing it with the appropriate keywords “north” and “cold” as well as the Baltic/Baltic sea region and its closest neighbors Estonia and Lithuania.

To find out what German, Swiss, and Austrian residents associate their holiday travel with, the open-ended question “When you think about your next vacation, what three words come to your mind?” was asked. The Top 3 answers for all the respondent groups were “Sun,” “Beach,” and “Sea” (see Table 6). The next most frequently named keywords for all countries were “Relaxation/recreation/rest.”

The network visualization of data showed that the more common pairs of keywords that characterize associations relating to holiday travel are similar for all respondents: “beach-sun” (212 unique pairs), “sea-sun” (176), “beach-sea” (171)

Table 5 The associations relating to Latvia expressed with keywords (% from all the answers)

	Germany <i>n</i> = 630 (%)	Switzerland <i>n</i> = 1083 (%)	Austria <i>n</i> = 1002 (%)
Baltic/Baltic-Sea/Baltic-states	8.9	4.5	4.3
Cold	6.2	8.4	7.3
Culture	1.7	1.3	1.7
East/Eastern-Europe	1.0	2.1	0.6
Estonia/Lithuania	4.3	1.8	2.9
Far-away	1.1	0.9	0.8
Forest	3.7	2.5	1.2
Meadow	1.0	0.1	0.8
Nature/landscape	8.4	6.9	7.2
Nice-country/nice-people	1.6	2.1	1.6
North/Northern-Europe	2.2	4.6	3.8
Riga/old-Riga	9.0	6.6	8.6
Sea	4.4	5.8	3.9
Small	1.7	3.0	1.3

Source: Author’s calculations based on survey data

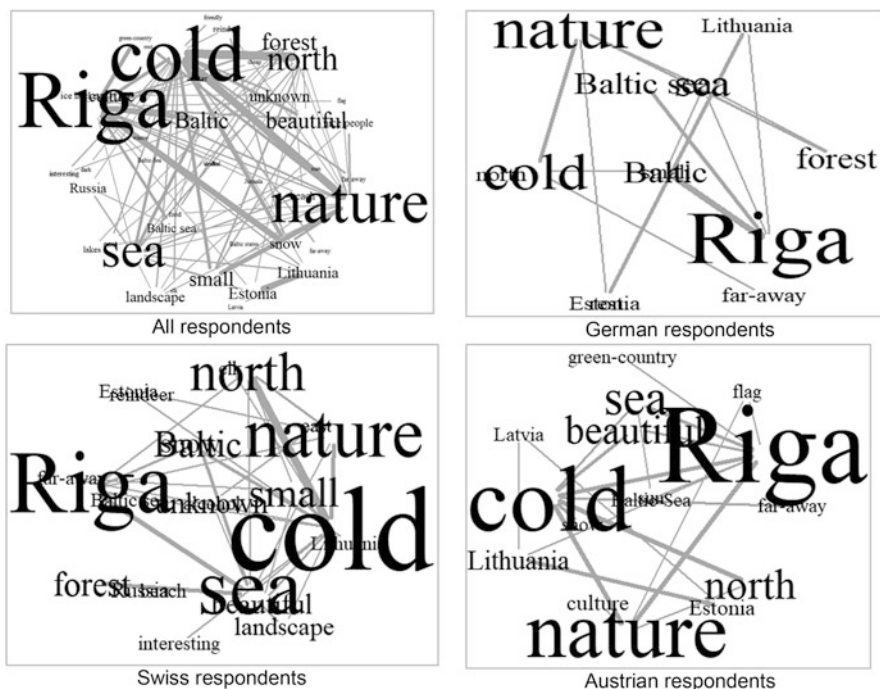


Fig. 3 Associations related to Latvia expressed with keywords (Source: Author’s calculations and visualization based on survey data)

Table 6 The associations relating to holiday travel expressed with keywords (% from all the answers)

	Germany <i>n</i> = 781 (%)	Switzerland <i>n</i> = 1270 (%)	Austria <i>n</i> = 1159 (%)
Adventure	1.2	1.3	1.4
Beach	15.2	10.7	11.6
Culture	3.5	2.3	2.4
Food/good food	1.9	2.8	2.7
Fun/joy	1.2	2.2	1.7
Mountains	1.4	1.7	1.6
Nature/landscape	3.1	4.4	4.0
Party/night-life	1.9	2.2	1.4
Relaxation/recreation/rest	9.0	6.9	7.2
Sea	12.3	9.2	10.9
Sun	16.4	9.8	13.5
Warmth	1.9	2.4	1.7

Source: Author’s calculations based on survey data



Fig. 4 Associations related to next vacation expressed with keywords (Source: Author’s calculations and visualization based on survey data)

and “sea-relaxation” (44), “beach-relaxation” (43), and all countries: for German respondents “beach-sun” (71), “sea-sun” (59), “beach-sea” (52); for Swiss respondents “beach-sun” (65), “sea-sun” (53), “beach-sea” (52); for Austrian respondents “beach-sun” (76), “beach-sea” (67) and “sea-sun” (64) (see Fig. 4).

According to the results of the survey, the largest proportion of respondents associate their next vacation with relaxation at the sea, on a sunny beach with a slight tendency to enjoy nature and culture. In order to make conclusions on connections between the color associations and intentions to travel to Latvia as tourism destination, bivariate analysis, respectively data correlation was applied. Pearson correlation as the most widely used correlation statistic was used to measure the degree of the relationship between linearly related variables—color associations with Latvia as tourism destination (“three colors come to your mind”) and intention to travel to Latvia in next 3 years. Result of Pearson correlation coefficient calculation r was lower than 0.1, that in terms of the strength of relationship, as the Pearson correlation coefficient value goes toward 0, the relationship between the two variables is weaker, so we can conclude that there is no correlation between color associations and intentions to travel to Latvia for all three German speaking countries and each market separately Germany, Switzerland, Austria.

5 Conclusions

Latvia, as a destination, 8 years ago began to introduce a new brand concept “Latvia. Best enjoyed slowly.” Recently Latvian Tourism and Investment Agency as the DMO of Latvia has begun to introduce a new logo and slogan “Magnetic Latvia.” This chapter does not analyze the question about the decision of introduction of a new logo, but instead focuses on the brand image and logo design emphasizing use and perception of colors as the research aim was to determine the right colors for the DMO logo.

Based on the results obtained from the survey, it can be concluded that the German, Swiss, and Austrian residents’ associations with Latvia and associations with holiday travel expressed in colors correspond with each other and with color concept of former Latvian tourism logo “Latvia. Best enjoyed slowly” in which color concept was based on the different shades of green, blue, and white colors. Therefore, it would be advisable to maintain the current Latvian tourism brand color concept for future marketing communication activities of DMO, regardless of whether a new brand will be introduced or the current one saved.

Latvia should be positioned as a destination near the sea, where both peaceful relaxation on the beach and/or activities in natural environment are possible, which are in line with the ideas of vacationers from Germany, Switzerland, and Austria.

6 Discussion, Limitations, and Future Lines of Research

Also, study comprised large number of interview respondents; this research has some limitations, in that some relevant factors are not included. Additional study is required where other methods could be applied for the analysis of associative

perceptions tourism destination and tourism brand correspondence with the color associations of potential customers. Future studies can take broader views for the analysis of associative perception of destination brand colors. As illustration method network visualizations were successfully used, still other relevant dimensions for study visualization typology criteria could be included in future studies.

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Part IV
Accounting and Finance

Value Relevance of the Information Reported by Romanian Quoted Companies with Connections to Tax Havens



Mihai-Bogdan Afrăsinei and Iuliana Eugenia Georgescu

Abstract Financial information reported by companies is an element that completes the set of data necessary to optimize the investment decisions. The extent to which they contribute to the formation of the share price (value relevance) reflects both the qualitative level of the accounting figures and the degree of efficiency and maturity of the capital markets. The existence of connections to offshore jurisdictions may influence investors' perception of the quality of reported information. This chapter aims to analyze the value relevance of the information reported by the listed companies on the main section of the BSE, focusing on the results obtained by the entities with connections to tax havens. To achieve the research objectives, we used financial information for a period of six fiscal years (2011–2016). The value relevance estimation was achieved through the two econometric models established in the literature, the Easton and Harris model and the Ohlson model. The findings of our research show a low value relevance for companies with connections to tax havens compared to those without such links. The relationship is also sustained by robustness tests carried out by introducing control variables to highlight the characteristics of companies with offshore connections: performance, indebtedness, asset structure, productivity, and taxation.

Keywords Value relevance · Tax havens · Offshore jurisdictions · Transfer pricing

1 Introduction

From the dawn of time, individuals have tried to find solutions to keep as much of their wealth as possible, in order to avoid taxation. The emergence of modern tax havens at the end of the nineteenth century (Palan 2009) turned this mission into a much easier one. Financial and economic globalization, correlated with low taxation

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M. H. Bilgin et al. (eds.), *Eurasian Business Perspectives*, Eurasian Studies in Business and Economics 12/2, https://doi.org/10.1007/978-3-030-35051-2_17

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and regulation in tax havens motivated the taxpayers with significant incomes from almost all over the world to take shelter in such jurisdictions. They adopted a vision similar to that of Smith (1976), who stated that each individual, as long as he/she does not break the law, is fully entitled to take care of his/her own profits in a personal manner that is suitable for him/her. Nowadays, taxpayers who use tax havens resort to this practice: They exploit the low regulations and the existing gaps in the national and international legislation in order to direct their taxable incomes to jurisdictions that are more favorable from this perspective. In the context of financial globalization, financial capital can be directed almost anywhere in the world in search of profitable trading conditions (Sikka 2008). Thus, investors are in a permanent search for countries or territories which can afford them various tax advantages.

In order to pay lower taxes, big companies and especially the multinational ones elaborate international complex tax optimization strategies. Basically, these strategies assume the exploitation of the existing opportunities in the legislation of the state from which the incomes come in order to reach an optimal tax result. Through the elaboration of tax optimization strategies, which are sometimes based on arbitrary prices or do not have an economic justification, the tax base can be shifted to offshore jurisdictions. Large companies, through the best accountants, lawyers, or bankers, are capable of developing highly complex tax optimization strategies which do not flout the law and cannot be challenged by tax authorities. Thus, companies succeed in gaining an additional profit by avoiding paying taxes, a profit which they can use to finance other activities and become more competitive on the market.

The tax avoidance opportunities have motivated many large companies throughout the world to register offshore companies. Some of them even own hundreds of such companies. As a result, financial transactions around the globe moves through or resides in tax havens and colossal volumes of exchanges are conducted outside the control of legitimate governments (Deneault 2011). In other words, if taxes and fees represent the price paid for a civilized society (Holmes 1904), tax havens could be considered the price paid for liberty.

Tax havens have also inevitably triggered various controversies, namely critics from the academic, political, or journalistic environments. Even though, in many cases, the transactions made through offshore companies are not illegal, there are concerns regarding morality, social responsibility, and even patriotism. Some studies (ActionAid 2013; Dan Watch 2011; Christian Aid 2008, 2009) reveal that, while some countries fight for the eradication of poverty, tax havens are thriving through them. To this extent, we consider as relevant a note made by Owens (2009), former director of the Center for Tax Policy and Administration within the Organization for Economic Cooperation and Development between 2001 and 2012, who argued that developing countries are losing to offshore jurisdictions almost three times what they get from developed countries in aid, but if taxes on income were collected billions of dollars would become available to finance development.

This study emphasizes the investors' perceptions on the activity of companies with links to tax havens, highlighting the need for an extensive financial reporting in order to eliminate the uncertainties thereof. This chapter is different in terms of the

mode of measurement for value relevance (via the proposed variables), being developed by focusing on companies with connections to tax havens. The originality of the work consists in analyzing the relationship between value relevance and the existence of the connections of companies in offshore jurisdictions. This relationship is not debated in the literature through empirical studies at the level of Romanian listed companies. This chapter contributes to the literature by using a regression for the purpose of increasing the thoroughness of the analyses that were conducted. We measure the extent to which the existence of connections with tax havens influences the value relevance of the financial information reported by the quoted companies on the Bucharest Stock Exchange.

The chapter is structured in several sections as follows. The next two sections describe the concept of tax havens and delimits offshore jurisdictions. Section 4 presents a brief review of the literature regarding the manipulation of transfer pricing and value relevance of accounting information. The research design of the chapter is described in Sect. 5 and the results are discussed in Sect. 6. Finally, Sect. 7 outlines the conclusions reached in this study.

2 What Are Tax Havens?

The complexity of the phenomenon, the continuous changes in the international business environment, the various connotations it gained over time, and the diversity of approaches to this issue have not allowed experts in the field to find an accurate definition for the “tax haven” concept, despite their numerous attempts (Shaxson 2012; Palan et al. 2010; Larudee 2009; Dharmapala and Hines 2009; Desai et al. 2006; OECD 1998; Goldstein 1995; ChampPELL 1985). After laborious research, Palan (2009) stated that the tax haven concept had started being widely used in the 1950s, and yet no consensus regarding its meaning had been reached to the present day. In his opinion, the issue is that many of the governments around the world use their sovereign right to enact law in order to develop new competitive sectors within their economies or to help successful sectors to compete in the world economy (Palan 2009).

In a broad sense, tax havens are jurisdictions whose taxation system allows nonresidents to avoid paying taxes for certain income categories in their countries of origin through offshore companies. Since many states provide tax incentives for foreign investments in certain fields, some authors (Thomas 1981; ChampPELL 1985; Keats 2012) are of the opinion that any country could become a tax haven for the taxpayers from other jurisdictions if the taxation level is more favorable compared to that of the country of origin. For example, the USA could be a tax haven for taxpayers from Canada (Keats 2012), while Canada could be a tax haven for taxpayers from the USA (Deneault 2015). We should add that since most tax havens are islands lacking the natural resources that would allow for the development of industrial fields, they focused on the financial sector (Hampton and Christensen 2002; Eden and Kudrle 2005).

Several other concepts have been also used in literature to address such jurisdictions, namely “tax shelters,” “fiscal oases,” “tax refugees,” “offshore financial centers,” “offshore jurisdictions,” or “financial secrecy jurisdictions.” Moreover, since the “offshore” concept has gained a negative meaning over time, many of the jurisdictions with low taxation levels call themselves “international financial centers” (Barber 2007) or simply “professional financial centers” (Norway Minister of the Environment and International Development 2009), instead of “tax havens” or “offshore financial centers.” It should also be noted that even for these concepts no accurate definition has been found. They are frequently encountered in legislation proposals and initiatives for the prevention and fight against cross-border tax evasion, but not in legal texts or in the international regulations in force (Norway Minister of the Environment and International Development 2009). According to Keats (2012), the word tax haven is “mysterious and sometimes tricky”, while other specialists (Norway Minister of the Environment and International Development 2009) emphasize the fact that this expression is known and rather used in mass media.

Tax havens are generally seen as having a negative impact on national economies of other countries (Sikka and Willmott 2010), even if there are also authors who consider that these jurisdictions could facilitate investments (Hong and Smart 2010). Although many countries have declared themselves against tax havens, measures taken to combat financial secrecy have not had any apparent effect. In this regard, Zucman (2015) demonstrated that offshore jurisdictions are now flourishing more than ever because the commitments that were made are too vague and the ways of control far too weak.

One of the key elements that testify to the impact that tax havens have on the current business environment is given by foreign direct investments. According to their analysis, two of the first three countries in terms of inflows and outflows of foreign direct investments are the Netherlands and Luxembourg (IMF 2018). Given the size of their domestic economy, these two would certainly not be among the first countries in the world if transactions were not made artificially for tax optimization.

3 Tax Havens and Offshore Financial Centers in the World

Identifying tax havens and offshore financial centers has proven to be as challenging as defining them and authors have been unable to reach a consensus regarding the selection criteria (Afrăsinei 2016). Throughout the time, national and international organisms and organizations, as well as scholars, have issued many lists of tax havens and offshore financial centers. The content varies from one list to another, since each research was based on its own criteria. Also, the moment when these delimitations were made is very important since the “offshore world” changes very fast. In a landmark book, called *Tax Havens: How Globalization Really Works*, Palan et al. (2010) made a compilation of tax havens and offshore financial centers based on 11 lists that had been issued by other researchers and organizations:

International Bureau of Fiscal Documentation (1977), Charles Irish (1982), Hines and Rice (1994), Financial Stability Forum (2000), International Monetary Fund (2000), OECD (2000), Financial Action Task Force (2000/2002), Hampton and Christensen for Tax Justice Network (2005), Zoromé for International Monetary Fund (2007), Senator Carl Levin for Stop Tax Haven Abuse Act in the United States of America (2007) and [LowTax.net](#) (2008).

This compilation could be completed with the list issued by the US Government Accountability Office (2008), which we consider to be representative since it was used in various studies (Gravelle 2015; ActionAid 2011). The lists, issued from 1977 to 2008, include 91 tax haven jurisdictions and offshore financial centers. However, not all jurisdictions have preserved the characteristics of such territories. Also, it is worth mentioning that only seven of these jurisdictions are to be found on all 12 lists. Thus, Bahamas, Guernsey, Bermuda, Cayman Islands, Jersey, Malta, and Panama could be considered to be the most significant tax havens or offshore financial centers in the world.

Using a different approach, in 2009 the experts at Tax Justice Network started to issue a ranking of the secrecy jurisdictions called “Financial Secrecy Index.” The ranking issued in 2009 was based on the 11 lists previously mentioned and comprised 60 jurisdictions. Basically, they took into account the jurisdictions that were present at least twice on those lists, with just a few exceptions. Thus, Niue, South Africa, and Tonga, though indexed on several lists, were removed as they had stopped providing financial services with a high level of secrecy. In turn, Austria and Belgium were included due to their refusal at the time to provide automatic exchange of information with regards to the interest they paid, in accordance with the Directive of the European Union concerning the taxation of savings incomes (Murphy 2009). Subsequently, Tax Justice Network issued rankings in 2011, 2013, 2015, and 2018 based on some financial secrecy indexes regarding those countries or territories, such as banking secrecy, transparency of registering trusts and foundations, registering and actualization of information regarding company owners, obligation to keep accounting records, information exchange regarding payments made to nonresidents, and the implementation of “country-by-country reporting” for the companies listed on the regulated market.

4 Tax Avoidance and Value Relevance

Although listed companies are characterized by a higher level of transparency than unlisted firms, a number of studies have shown that many of them, also, have connections to tax havens through subsidiaries, shareholders, or other affiliated companies. In the USA, 82% of the 100 largest publicly traded US companies had subsidiaries in tax havens (Smith 2013); in the UK, 98% of the largest 100 companies listed on the London Stock Exchange had affiliates in tax havens (ActionAid 2011); in France, all the companies listed at Euronext—CAC40 had subsidiaries in tax havens (Rinuy and Chavagneux 2009); in Spain, 95% of the Spanish IBEX-35 listed

firms used tax havens (Observatorio de RSC 2012); and in Romania, 36% of the companies listed on the Bucharest Stock Exchange had connections to tax havens (Afrăsinei et al. 2016a).

In order to achieve the objectives, set by the tax optimization strategies developed (maximization of global income), some companies resort to the manipulation of transfer prices (Swenson 2001; Rugman and Eden 2017). Although transfer prices should be in line with the market value principle (the arm's length principle), firms are able to under-invoice or over-invoice the transactions with affiliated entities (Sikka and Willmott 2010). For this reason, transfer pricing is seen by some authors (Vidal and Goetschalckx 2001; O'Connor 1997) as one of the most important and controversial topics for multinational or transnational companies. However, the incentives to manipulate transfer prices are based on the differences in corporate tax rates across countries. Among the most known and used techniques of international tax optimization through intrafirm trade, we can mention the intragroup acquisitions and sales, the intragroup transactions regarding the consultancy and management services, the intragroup lending and borrowing or the relocation of the intellectual propriety rights (patents, licenses, certificates) in tax havens.

Clausing (2003) investigated the impact of tax influences on firm trade prices by performing an empirical analysis based on monthly data on export and import prices of US companies and their foreign affiliates over the period of 1997–1999. The results of his research suggest that intrafirm trade prices are influenced by tax minimization strategies developed by these multinational companies. His findings are supported by the fact that there is a strong and statistically significant relationship between a country's tax rate and the prices of intrafirm imports and exports. Namely, firms are incentivized to underprice goods sold to low tax countries (in order to shift profits to low tax territories) and to overprice goods sold to high tax affiliates (in order to reduce the taxable profits in those jurisdictions). These findings are also supported by the results of a previous research performed by the same author (Clausing 2000).

Hanlon and Heitzman (2010) and Hill et al. (2013) define tax avoidance as a strategy that broadly encompasses any activity undertaken by companies to reduce their tax burden. Thus, by developing tax avoidance strategies, also referred to in literature as "tax minimization strategies" (Chi et al. 2017; Holtzblatt et al. 2015; Omer et al. 2006; Clausing 2000), companies save money by reducing the overall tax expenses and, thus, increase their financial resources which can be used for other purposes (Hill et al. 2013).

Usually, the accounting rules in common law countries are designed largely based on the disclosure needs of shareholders and prospective shareholders (Bartov et al. 2005). Value relevance is a subject extensively studied in the literature in recent years and its importance consists in the fact that the financial information provided by accounting influence investors' decisions (Carp 2014). In this respect, providing relevant information in view of estimating company value represents one of the main objectives in financial reporting (Beisland 2009). Taking into account the differences in objectives of reported financial information and opportunistic use of accruals by management, varying levels of value relevance of earnings could be established

(as reflected in the statistical association between earnings and stock returns) (Bartov et al. 2005).

Based on previous studies (Chang 1998; Francis and Schipper 1999), Hung (2000, p. 402) defines “the value relevance of financial statements as the ability of accounting data to summarize information impounded in market prices.” Similarly, Barth et al. (2001) define an accounting amount as being value relevant if it has a predicted association with equity market values. Barth et al. (2001) point out that the notion of “value relevance” was probably used for the first time in the paper of Amir et al. (1993), even though the subject had been investigated more than 50 years ago by Miller and Modigliani (1966).

In a study using data of manufacturing firms from 16 countries in 1986–1955, Ali and Hwang (2000) concluded that value relevance is lower when the tax rules significantly influence financial accounting measurements. The authors explain this finding by the fact that the tax laws are influenced by several main political, economic, and social objectives rather than the information needs of investors.

While referring to the famous cases of misrepresentations of profit reporting by Enron, Tyco, and Xerox corporations, the author argues that the increasing level of forecasting and reporting error in measuring corporate profits, as well as the systematic evidence on the value relevance of earnings, indicates that something more widespread is happening with respect to the reliability of corporate profits. According to Desai (2005), the evolution of the value relevance of earnings over many years suggests that investors find earnings decreasingly relevant for assessing value. While referring to the famous cases of misrepresentations of profit reporting by Enron, Tyco, and Xerox corporations, Desai (2005) argues that the increasing level of forecasting and reporting error in measuring corporate profits, as well as the systematic evidence on the value relevance of earnings, indicates that something more widespread is happening with respect to the reliability of the profits of companies.

Previous studies (e.g., Chebaane and Othman 2014) have shown that the mandatory adoption of IFRS in emerging economies increases the level of value relevance. Also, this increase in the level of value relevance of earnings per share and book value of equity per share is positively influenced by other factors, such as a common law legal system, a high level of external economic openness, a strong investor protection, a full protection of minority shareholders, and a sophisticated capital market. For example, a paper which analyzed the timeliness of the results reported by Romanian listed companies shows that the financial information provided by firms meets the qualitatively criterion assessed, respectively earnings timeliness (Carp and Toma 2018).

Financial information reported by companies must meet certain qualitative characteristics (basic qualitative characteristics and amplifying qualitative characteristics) to be useful to the users of financial information in their decisions (Toma 2018). Thus, there is a need to quantify the extent to which accounting information is relevant to decision-making, mainly by investors and potential investors.

Based on the theoretical aspects, we propose testing the following hypotheses:

H1 The existence of connections to tax havens reduces the value relevance of the reported financial information.

H2 In the context of Romanian listed companies being present in tax havens, a series of indicators on indebtedness, labor productivity, and level of taxation influence the decisions of investors and, consequently, the value relevance of the reported financial information.

5 Research Design

The objective of this study is to measure the extent to which the existence of connections with tax havens influences the value relevance of the financial information reported by the companies listed on the Bucharest Stock Exchange. In order to meet the research objective, we will analyze the results obtained by firms with connections in tax havens compared to those without such connections.

In order to determine which of the firms have connections (links) to tax havens, we have analyzed their annual financial statements published on the Bucharest Stock Exchange website. We have considered that a company is present in tax havens (has connections to tax havens) if (1) it has shareholders from tax havens which own more than 50% of the shares; (2) it has subsidiaries registered in tax havens in which holds more than 50% of the shares; and (3) it has made transactions with affiliated companies which are located in tax havens (In this regard, we have analyzed the transfer prices from annual financial statements). In our research we have used the same list of tax havens as in the study performed by ActionAid (2011).

5.1 Data and Sample

The target population which we have considered within this analysis includes the companies listed on the regulated market of the Bucharest Stock Exchange. The sample was reached by eliminating the companies whose activity was financial banking, as they own a different reporting basis. Therefore, the final sample consists of 68 companies. The analyzed period is 2011–2016 (six fiscal years), and the source of data is represented by the annual financial statements of companies.

5.2 Methods of Data Analysis

The testing of the working hypotheses has been mostly achieved by use of multiple correlation and regression analysis, with quantitative and qualitative variables,

which underpin a series of econometric models acknowledged for value relevance analysis.

In this respect, the deterministic relations between the accounting perspective, represented by the financial information reported by companies and the behavior of the investors on the stock market are captured by the price model (Ohlson 1995), and the model based on share returns (Easton and Harris 1991).

In order to achieve the study's objective, we completed the Ohlson model (1995) with a series of variables, whose computation relations will be presented in Eqs. (1) and (2).

$$P_t = \alpha_0 + \alpha_1 BVPS_t + \alpha_2 EPS_t + \alpha_3 Conn_t + \varepsilon_t \quad (1)$$

where,

P_t stock price at mid-year $t + 1$;

$BVPS_t$ book value per share, at the end of the year t ;

EPS_t earnings per share, at the end of the year t ;

α_0 a constant expressing P 's average, when variables $X_1 \dots X_n = 0$

$\alpha_1; 2; 3$ regression coefficients;

ε_t residual variable.

Share price (P_t), as dependent variable, collects the influences of book value per share (BVPS) on earnings per share (EPS). The qualitative variable, dummy, "*Conn*" takes the value "1" when the firms have connections to tax havens and "0" otherwise, while the residual variable ε_t reflects the unexplained part of the two independent variables (BVPS and EPS) in the share price variation.

By involving a set of variables capable of reflecting the characteristics of companies with connections to tax havens, the model can be written as follows:

$$P_t = \alpha_0 + \alpha_1 BVPS_t + \alpha_2 EPS_t + \alpha_3 Conn_t + \alpha_4 TTR_t + \alpha_5 ETR_t + \alpha_6 FL_t + \alpha_7 W_t + \varepsilon_t \quad (2)$$

where,

TTR turnover tax rate;

ETR effective tax rate;

FL financial leverage;

W revenue per employee.

The Easton and Harris model (1991) strengthens the models used in the analysis, their equations being presented in relations (3) and (4):

$$K_t = \beta_0 + \beta_1 EPS_t/P_{t-1} + \beta_2 \Delta EPS_t/P_{t-1} + \beta_3 Conn_t + \varepsilon_t \quad (3)$$

where,

$K_t = \frac{P_t - P_{t-1} + D_t}{P_{t-1}}$	return on investment at the end of year t ;
EPS_t	earnings per share in year t ;
ΔEPS_t	earnings per share variation;
D_t	dividend per share for year t ;
P_t and P_{t-1}	stock price at mid-year $t + 1$ and t ;
α_0	a constant expressing K 's average, when variables $X_1 \dots X_n = 0$
$\alpha_{1, 2}$	regression coefficients;
ε_t	residual variable.

$$K_t = \beta_0 + \beta_1 EPS_t / P_{t-1} + \beta_2 \Delta EPS_t / P_{t-1} + \beta_3 Conn_t + \beta_4 TTR_t + \beta_5 ETR_t + \beta_6 FL_t + \beta_7 W_t + \varepsilon_t \quad (4)$$

For the purposes of this analysis, the share price was used at the middle of the next financial year in order to allow for the effect of information in the reported financial statements to be included.

6 Results

Table 1 presents the descriptive statistics of the variables included in this study in order to characterize the economic environment of the analyzed phenomenon, as well as to highlight the distribution of the data series. According to the comparative analysis performed at the level of the total sample and of the clusters that were determined by the presence of the entities in tax havens, companies with connections to tax havens have turned out to have a lower average share price than companies without such links ($P_{\text{conn}} = 0.775 < P_{\text{without conn}} = 1.322$). If the share price can be controlled by its initial value or by post-issuance procedures (splits or issue of free securities), thus reducing its comparative relevance, the return on share reflects cumulatively the investors' perceptions (through the price offered for the purchased securities) and the efficiency of the entity's activity (through the level of profits distributed to shareholders). From this perspective, the listing on BVB of companies with connections to tax havens generates a lower return on share (on average, at the sample level the k value is negative) compared to that obtained by entities without such links ($K_{\text{conn}} = -0.004 < K_{\text{without conn}} = 0.091$). This situation can be generated by a prudent investor behavior, as well as by potential uses of financial techniques to reduce profits through strategies specific to companies with links to tax havens (associated with tax optimization). The value of equity per share confirms the same differentiation between the two subsamples ($BVPS_{\text{conn}} = 0.401 < BVPS_{\text{without conn}} = 1.738$), which shows the consistency of the phenomenon of profitability minimization which affects entities with offshore connections.

The control variables validate, from a descriptive point of view, the disjunctive relationship between the values of the characteristics at the level of the two clusters.

Table 1 Descriptive statistics

Elements	No. obs	Total sample			With connections			Without connections		
		Mean	Std dev	Median	Mean	Std dev	Median	Mean	Std dev	Median
<i>P</i>	406	1.115	1.639	0.234	0.725	1.319	0.119	1.322	1.754	0.301
<i>K</i>	406	0.579	0.374	0.000	-0.004	0.391	0.000	0.091	0.361	0.000
BVPS	406	1.274	2.331	0.339	0.401	2.113	0.076	1.738	2.312	0.519
EPS	406	0.029	0.142	0.015	-0.007	0.156	0.000	0.049	0.131	0.045
TTR	406	0.011	0.014	0.008	0.008	0.013	0.000	0.013	0.014	0.008
ETR	406	0.130	0.142	0.143	0.084	0.133	0.000	0.154	0.141	0.158
FL	406	0.510	1.147	0.365	0.557	1.458	0.586	0.485	0.943	0.314
W	406	643 ^a	215 ^a	216 ^a	1231 ^a	3542 ^a	329 ^a	330 ^a	427 ^a	193 ^a

Source: Own processing

P stock price, *K* return on investment, *BVPS* book value per share, *EPS* earning per share, *TTR* turnover tax rate, *ETR* effective tax rate, *FL* financial leverage,

W revenue per employee

^aThousand ROL per employee

In this respect, the turnover tax rate reflects tax optimization strategies adopted by companies with connections to tax havens, with TTR registering significantly diminished values ($TTR_{\text{conn}} = 0.008 < TTR_{\text{without conn}} = 0.013$) compared to those without such links. This situation is also confirmed by the size of the effective tax rate ($ETR_{\text{conn}} = 0.084 < ETR_{\text{without conn}} = 0.154$). Also, the level of indebtedness and turnover per employee register higher values for entities with offshore links ($FL_{\text{conn}} = 0.557 > FL_{\text{without conn}} = 0.485$; $W_{\text{conn}} = 1.231 > W_{\text{without conn}} = 330$), thus reflecting the existence of possible financing and intragroup transactions, both meant to reduce the tax burden.

The results of the correlation analysis are presented in Table 2. Correlation coefficients reflect the significant relationship between independent and dependent variables, validating the econometric models that we have used. Also, there are no high-intensity links between the independent variables, which shows the lack of collinearity between them. We may notice the inverse link (negative correlation coefficients) established between the “Conn” variable and the dependent variables (K and P). Thus, the negative influence that the presence of entities in tax havens has on the value of the market indicators is highlighted.

The results of the testing of the two landmark models for assessing the relevance of financial information, Ohlson (1995) and Easton and Harris (1991), completed with the variables specific to the analyzed phenomenon, are presented in Table 3. From a qualitative point of view, the financial information published by the companies listed on BVB has significant value relevance for both models ($0.567 < R^2_p < 0.669$; $0.113 < R^2_k < 0.139$). In terms of the contribution of the dummy variable “Conn,” the positive regression coefficient for the Ohlson model ($\alpha_3 = 0.118$; $\alpha_3 = 0.196$) reflects the opportunistic behavior of investors who are willing to pay extra for placements in companies with offshore connections, in the hope of future gains from their business specificity.

The share returns model, Easton and Harris (1991), highlights the negative influence of the companies’ presence in tax havens on the return on share ($\beta_3 = -0.047$; $\beta_3 = -0.030$). The relationship may be the consequence of using tax minimization strategies, which ultimately results in a reduction of dividends paid to shareholders and a minimal gain from the evolution of stock prices.

The control variables introduced in the model influence the extent to which the average variation of the dependent variable is explained by the factors specific to the entity’s activity, the determination ratio being superior to the situation where their effect is not estimated ($R^2_p = 0.669$; $R^2_k = 0.139$). In this regard, the increase in level of taxation of turnover and labor productivity positively influences stock market indicators as a result of the investors’ perception of an efficient operational activity and an increase in compliance with the national tax system. Indebtedness and effective tax rate act as factors for share price and return on share price reduction, due to the effect of diminishing the profit, including the possible benefits (dividends) expected by shareholders.

In order to assess the robustness of the analysis performed, the proposed models were tested using two subsamples obtained by segmenting the total population according to the existence of connections to tax havens (see Table 4). Also, from

Table 2 Matrix of Pearson correlation coefficients

	<i>K</i>	<i>P</i>	BVPS	EPS	EPSP	ΔEPS	Conn	TTR	ETR	FL	W
<i>K</i>	1	0.239**	0.173**	0.423**	0.290**	0.233**	-0.122*	0.208**	0.094	0.013	0.051
<i>P</i>		1	0.753**	0.223**	0.649**	0.010	-0.173**	0.248**	0.183**	0.056	0.231**
BVPS			1	0.307**	0.727**	0.040	-0.273**	0.166**	0.278**	0.238**	0.168**
EPS				1	0.616**	0.423**	-0.189**	0.367**	0.326**	0.076	0.099*
EPSP					1	0.228**	-0.226**	0.353**	0.287**	0.132**	0.208**
ΔEPS						1	-0.054	0.097	0.009	0.078	0.053
Conn							1	-0.167**	-0.235**	0.030	0.181**
TTR								1	0.458**	-0.081	0.093
ETR									1	0.040	0.027
FL										1	0.149**
W											1

Source: Own processing

**Correlation is significant at the 0.01 level (two-tailed)

*Correlation is significant at the 0.05 level (two-tailed)

Table 3 Estimates of regression coefficients

Explanatory variable	Ohlson model			Easton and Harris model			Explanatory variable
	(1)	(2)	(3)	(1)	(2)	(3)	
Intercept	0.441	0.391	-1.332	0.012	0.030	0.021	Intercept
$\alpha_1 BVPS_t$	0.532	0.537	0.563	0.730	0.691	0.631	$\beta_1 EPS_t/P_{t-1}$
$\alpha_2 EPS_t$	-0.107	-0.061	-0.578	0.518	0.518	0.506	$\beta_2 \Delta EPS_t/P_{t-1}$
$\alpha_3 Conn_t$		0.118	0.196		-0.047	-0.030	$\beta_3 Conn_t$
$\alpha_4 TTR$			1.977			3.421	$\beta_4 TTR$
$\alpha_5 ETR$			-0.725			-0.066	$\beta_5 ETR$
$\alpha_6 FL$			-0.166			-0.003	$\beta_6 FL$
$\alpha_7 W$			0.128			-0.002	$\beta_7 W$
R^2	0.567	0.568	0.669	0.113	0.117	0.139	R^2
Sig.	0.000	0.000	0.000	0.000	0.000	0.000	Sig.

Source: Own processing

Dependent variables: share price (P) for Ohlson model and return on investment (K) for Easton and Harris model; $N = 406$ in all specifications

this perspective, the results are validated by the existence of a significant differentiation between the levels of relevance of the financial information reported by the companies quoted on BSE. Level R^2 identifies a higher degree of explanation of the variation of share price and return on share for entities without offshore connections, the existence of links to tax havens affecting the attractiveness of securities for investors. Also, control variables retain their sense and intensity of influence on dependent variables. The models used adjust the actual data. These were characterized by a high degree of significance, in all the cases tested the Sig coefficient registering minimum values.

7 Conclusions

Offshore financial centers and tax havens play a fundamental role in the current world economy. Moreover, the issue of offshore finance is brought to public attention every time a new financial scandal arises (e.g., Panama Papers, Paradise Papers, Bahamas Papers, and Wiki Leaks). Inexistent or low taxes, combined with a high level of confidentiality have motivated many of the largest companies in the world to open offshore subsidiaries in such jurisdictions, even though, in most cases, they are not physically present and have nothing more than a mailbox there. This way, hundreds, thousands, or even tens of thousands of companies could be registered at a single address. Moreover, due to taxation reasons, to the need for confidentiality or assets protection purposes, some companies have tens of offshore companies registered in the same jurisdiction.

Given the difficulty of obtaining data, few empirical studies have been conducted in Romania at company level in order to analyze the tax havens influence on

Table 4 Parameters of regression equations in confirmatory analysis at cluster level

Explanatory variable	Ohlson model				Easton and Harris model				Explanatory variable
	Without connections		With connections		Without connections		With connections		
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	
Constant	0.301	-1.051	0.544	0.122	0.029	0.411	-0.015	-0.342	Constant
$\alpha_1 BVPS_t$	0.577	0.583	0.443	0.504	0.635	0.630	0.794	0.607	$\beta_1 EPS_t/P_{t-1}$
$\alpha_2 EPS_t$	0.361	-0.963	-0.473	-0.181	0.685	0.658	0.314	0.320	$\beta_2 \Delta EPS_t/P_{t-1}$
$\alpha_3 TTR$		3.029		-4.429		3.458		3.074	$\beta_3 TTR$
$\alpha_4 ETR$		-0.687		-0.180		-0.206		0.213	$\beta_4 ETR$
$\alpha_5 FL$		-0.021		-0.220		0.009		-0.023	$\beta_5 FL$
$\alpha_6 W$		0.330		0.045		-0.033		0.023	$\beta_6 W$
R^2	0.590	0.756	0.482	0.526	0.124	0.162	0.081	0.117	R^2
SIGmodel	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	SIGmodel

Source: Own processing
 Dependent variables: share price (P) for Ohlson model and return on investment (K) for Easton and Harris model; $N = 406$ in all specifications

financial indicators. Usually, this issue is addressed mainly from a macroeconomic perspective.

The fact that companies create connections to tax havens in order to implement tax optimization strategies (for tax minimization purposes) leads us to examine what is the actual value relevance of the information reported in the financial statements of such firms. Based on the theoretical aspects discussed in the literature, we started from the premise that the existence of companies' connections to offshore jurisdictions may influence the investors' perception of the quality of the reported financial information. We investigate the validity of our assumption through the present study, in which we analyzed the value relevance of the information reported by the Romanian quoted companies on Bucharest Stock Exchange with offshore links for a period of six fiscal years (2011–2016). To achieve the objectives of this study, we compared the results obtained by firms with links to tax havens with the results obtained by firms without such connections. Basically, we divided the sample into two categories (based on a dummy variable): firms with connections to tax havens and companies without connections to tax havens. This chapter contributes to the literature by adding the role of tax optimization through offshore jurisdictions in measuring the value relevance (of Romanian listed companies).

The deterministic relations between the accounting perspective and the investors' behavior on the stock market have been achieved through the two econometric models established in literature: the price model (Ohlson 1995) and the model based on share returns (Easton and Harris 1991). Data processing was performed through multiple regression and correlation analysis.

The findings of this study emphasize a low-value relevance for firms with offshore links by comparison with those without connections in such jurisdictions. This correlation is also supported by robustness tests which introduced control variables to highlight the characteristics of companies with offshore connections: financial performance, indebtedness, asset structure, productivity, and taxation. Thus, we identified that companies with connections to tax havens have a lower average share price and generate a lower return on share than companies without such links. Moreover, firms with offshore connections have a significantly diminished turnover tax rate, as well as a reduced effective tax rate. For example, the effective tax rate of firms with connections to tax havens it is almost two times smaller compared to the firms without such connections ($ETR_{\text{conn}} = 0.084 < ETR_{\text{without conn}} = 0.154$). This discrepancy may be a reflection of the tax optimization strategies applied by companies with connections to tax havens in order to minimize taxes. These evidences in terms of taxation are in line with the results obtained in a study (Afrăsinei et al. 2016b) conducted on Romanian non-listed companies. The level of indebtedness and turnover per employee register higher values for entities with connections to tax havens, which may suggest the existence of possible financing and intragroup transactions, both meant to reduce the tax burden. Also, the increase in the level of taxation of turnover and in labor productivity positively influences stock market indicators. From a qualitative point of view, the financial information published by the firms that we have analyzed has

significant value relevance for both models used in our study (Ohlson 1995; Easton and Harris 1991).

The study has a series of limits in terms of the relatively small size of the sample and the lack of some variables regarding the corporate governance. In this regard, we intend to remove these limits and to extend our study to the level of the European developing countries, as future directions of research.

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Usage of Performance Indicators in Croatian Public Hospitals



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Abstract The primary objective of this chapter is to determine the level of usage of performance indicators in the management decision-making process of Croatian hospitals. The objective is to examine how they define business goals and present results within and outside the institution, how they measure performance, define performance indicators and use them in business processes. The aim was also to explore the managers' opinion on the importance of tracking performance through indicators in business processes such as planning, decision-making, information, and control. A questionnaire was prepared for the survey and sent to all public hospitals in Croatia. According to the Croatian Ministry of Health (*Health institutions in the Republic of Croatia*, 2018), there are 59 public hospitals in Croatia. The questionnaire answered 21% or 36% of the hospitals, which is a representative sample. Research results show that just some of the hospitals define financial and nonfinancial strategic goals and follow their realization. The results also show that information presented in basic financial reports to hospital managers is mostly sufficient for the management of the institution's business. Performance indicators are not developed to a significant extent at Croatian hospitals, as a tool for measuring and tracking performance.

Keywords Public hospitals · Performance indicators · Management · Decision-making

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1 Introduction

Although public hospitals represent only a part of the healthcare system of the country, because of the importance of services provided to users and a significant share in the allocation of budgetary resources, we often look at them as a symbol of the healthcare system. The variety of services provided by emergency services, daycare, pediatrics, surgery and other services, a large number of employees, constant technological changes to adapt, diverse and complex needs of patients, affect the complex structure of the hospital system. Successful management of such complex systems requires a good information background. The need for proper public hospitals management is becoming more and more important in raising awareness of the importance of rational and efficient use of limited budget resources and increasing the satisfaction of the customer with care provided to them (the value for money). The information needs of public hospital managers are also affected by various stakeholders in the healthcare system such as regulatory bodies, the relevant budget, employees, patients, the media, and the public. To meet their diverse needs, hospitals' managers need to have entrepreneurial management skills. Cost tracking, quality of service, user satisfaction, efficiency and other aspects of business, management based on results achieved and reporting on them become essential challenges for new public managers. Measuring performance through monitoring financial and nonfinancial performance indicators are embedded as a logical solution to the information needs of managers for successful public hospitals management.

The aim of this chapter was, therefore, to investigate the extent to which the Croatian public hospitals developed a performance monitoring system for business management purposes. The chapter explores the development of strategic planning, information needs of hospital managers, measurement, and reporting on performance. It also examines managers' views on the ability to use performance indicators in different business processes such as planning, decision-making, informing and control of public hospitals. This chapter contributes with the evidence of the conducted analysis and points out to several weaknesses in the management system of Croatian public hospitals and the authors propose further training of managers to enhance decision-making and strategic business management. Based on the analysis of the results, we conclude that Croatian hospitals, to a certain extent, apply the results of performance measurements for decision-making purposes. The level of usage differs depending on business processes within the institution. Their use is most prominent in financial planning procedures. Performance indicators are partially used in internal and external control processes and quality assurance. A bit less, they are used for tracking process efficiency, improvement and development, benchmarking with other hospitals, informing the public, increased transparency, and self-evaluation. They have little importance for the reward and motivation of employees, punishment, and internationalization. Managers' awareness of the need and the ability to use performance indicators in all segments of hospital business management has been developed to a significant extent. Performance measurement results are not of great importance to making day-to-day decisions, but as the

decision-making period extends, the importance of performance measurement is growing. Contribution of this chapter to general literature is in its original research about performance measurement and performance indicators in Croatian public hospitals, which expands international research.

2 Literature Review

Performance measurement in healthcare seems like a new concept but it was firstly used 250 years ago in the USA (McIntyre et al. 2001). However, in the 1980s of the last century when cost control and quality of the healthcare system became the focus, healthcare performance measurement significantly developed and experienced its full implementation (Budimir et al. 2017). In the hospital system today, performance measurement is a vital management tool in the quality assurance and responsibilities processes, and for effective and strategic business management (Budimir et al. 2017).

According to Fryer et al. (2009), the literature identifies the key features of a successful performance management system as being in alignment with the performance management system and the existing systems and strategies of the organization. But also it has become a leadership commitment, as business culture in which it is seen as a way of improving and identifying excellent performance. Not as a burden anymore that is used to chastise poor performers, stakeholder involvement and continuous monitoring, feedback, dissemination and learning from results. However, some authors also feel it is crucial that the performance management system is not static, but it matures as the management style and organizational culture of public hospitals evolves. The use and quality of performance indicators have been evolving in recent 30 years as organizations and stakeholders have become more used to the concepts of performance management. First indicators were primarily financial because they were easy to calculate, but gradually, other measures as nonfinancial indicators have been introduced. This has led to a broader range of indicators (Modell 2004).

Success is a term that is often mentioned in the healthcare system in recent years even though in Croatia hospitals are publicly financed and nonprofit organizations. Since the mission of hospitals is related to the provision of specific healthcare services that can solve health problems of patients (effectiveness) in the best possible way (quality) and at the lowest cost (efficiency), the success is measured through performance indicators (Barliba 2012). However, success is not a unique concept, and it is not easily measured especially in public hospitals. According to Donabedian (1988), quality of the healthcare system can be obtained through characteristics associated with the setting in which the healthcare system operates, such as material (e.g., building, equipment, finance) and human resources (e.g., by qualified personnel) and organizational structure (e.g., the organization of medical staff), through highlight actions taken in providing (by patients who receive services) and receiving (by trained personnel, which makes a diagnosis and determines therapy) health services but also through the result which indicates the effects that the service

provided has on the health of the patient and the general public (e.g., patient satisfaction, increase in public knowledge) (Budimir et al. 2016).

Given the importance and complexity of the healthcare system, the interests of stakeholders are strongly influenced by the system of performance measurement and by definition of indicators. Individuals and organizations to which the healthcare system affects or interests them there are providers and financiers of health services, public and individual patients, interest associations, regulators, policy-makers, employees, media (Donabedian 1988, p. 1744; Budimir et al. 2016). Their interests about public healthcare system are different and often conflicting. Solberg (1997) point out that it is necessary to distinguish between performance measurement to improve healthcare services, research and accountability to users (Budimir et al. 2016). To successfully establish a system of performance measurement is therefore essential to distinguish: who and what activities we want to evaluate and what we want to achieve with those activities (strategies), which quality standards want to be achieved and which data are available for those activities (Budimir et al. 2016).

Constant and rapid changes in the environment, followed by the processes of globalization and the growth of competition and limited resources enormously complicate decision-making processes in the public healthcare sector. Research shows that currently the most significant problems create financial challenges to the health managers (efficient allocation of resources, a revenue cycle, finding new sources of financing, etc.), or the need for balance between health and financial goals and to improve financial performance without compromising on quality of service (Gabenski and Pink 2007). In order to successfully respond to the challenges, healthcare institutions are introducing strategic planning and business management. For making quality strategic decisions, managers of health facilities require sound financial and nonfinancial information which could be obtained through performance indicators. Once defined, performance indicators can be applied in several areas that contribute to the quality of the healthcare system at the institutional and at sectoral level. The use of indicators is particularly useful in the accreditation and evaluation of the quality, comparing (benchmarking) the quality of institutions, ranking, financing, business decision-making, and reporting. The significance, the use, and interpretation of performance indicators in these processes vary, depending on the objectives and tasks of the procedure itself as well as national goals and values of healthcare system (Budimir et al. 2016).

3 Objectives and Research Process

The work of public hospitals is fund mainly from budget funds, which requires public management responsibility and rationality when using public funds, and thus measuring and tracking business performance. The primary objective of the research was to determine the level of use of performance indicators when making managerial decisions for hospital managers in Croatia. In order to achieve this goal, the objective was to examine the way of defining business goals and presenting results within and outside the institution, the way of measuring success, defining performance indicators and using it in business processes. The aim was also to explore the managers'

Table 1 Hospitals by size

Small	Share (%)	Average	Share (%)	Large	Share (%)
Up to 100 employees	4.76	From 101 to 200 employees	42.86	More than 200 employees	52.38
Up to 20 million kuna revenues	9.52	From 20 to 50 million kuna revenues	28.57	More than 50 million kuna revenues	61.90

Source: Table compiled by the authors

opinion on the importance of tracking performance through indicators in business processes such as planning, decision-making, information and control.

Based on the research objectives set out above, the following research questions have been defined:

- Did the hospitals define strategic goals and follow their realization?
- Have the information needs of hospitals' public managers been developed and diversified?
- Have the performance indicators been developed within Croatian hospitals?
- Do the hospitals perform a comparison of performance measurement results?
- To what extent do the Croatian hospitals apply the results of performance measurements for decision-making purposes?

For the survey, a survey questionnaire was prepared and sent to all public hospitals in Croatia. According to the Ministry of Health (2018), there are 59 public hospitals in Croatia. The hospitals operate as clinical hospital centers (5), clinical hospitals (3), clinics (4), general hospitals (20), specialized hospitals (24), and spas (3). The questionnaire answered 21% or 36% of the hospitals, which is a representative sample. The size of the institution can be observed through several parameters: the number of employees and the height of the annual income. For work purposes, given the above parameters, the institutions are divided into small, medium, and large, and the results are visible in Table 1.

Since there are no legal definitions of the size of a hospital, we can conclude that the survey questionnaire covers institutions of all sizes, regardless of the observed parameter.

4 Results of Empirical Research

Although there is no legal obligation to define the strategic goals of hospital operations, one of the prerequisites for successful management of all public institutions is strategic planning. In the first part of the questionnaire, therefore, we investigated the existence of strategic goals and reporting about the realization of the strategy related to the activities of employees in the function of strategy implementation. Figure 1 shows that only 52% of hospitals have defined financial and nonfinancial strategic goals. Some of the hospitals monitor strategic operations only

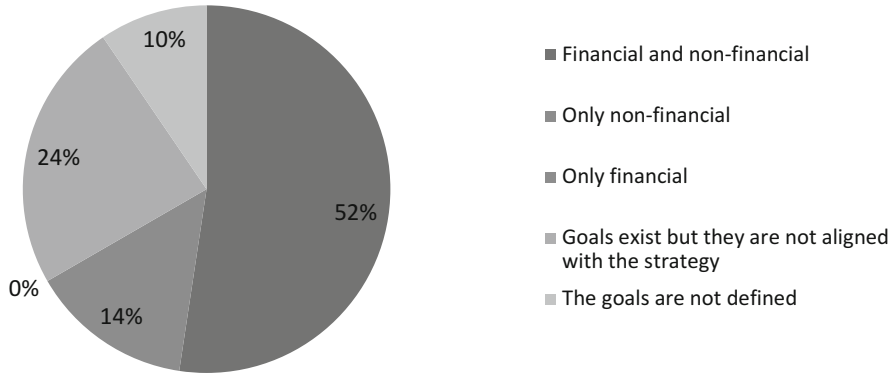


Fig. 1 Existence of strategic goals in public hospitals. Source: Table compiled by the authors

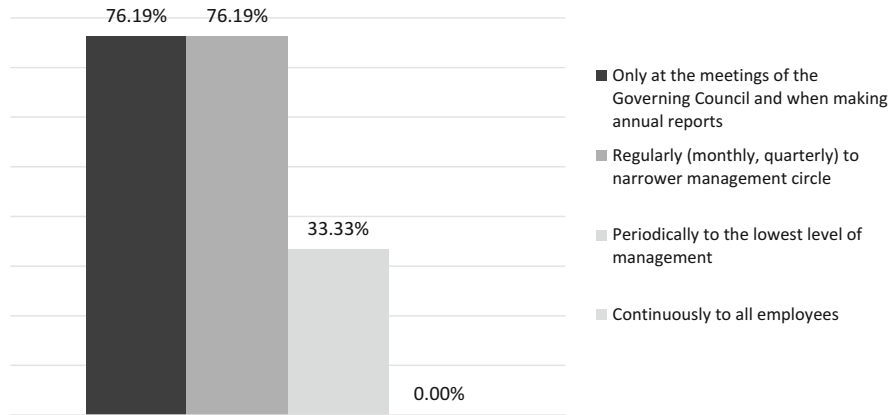


Fig. 2 Presentation of results within the institution. Source: Table compiled by the authors

through nonfinancial indicators (14%). Twenty-four percent of the institutions did not align their goals with the strategy, and 10% did not define goals at all.

Reporting about the realization of the strategy exists (14.3% of respondents) or mostly exists (38.1% of respondents) in half of the hospitals. 28.6% of the hospitals do not report, and 19% mostly do not report about the implementation of the strategy. In order to determine the distribution of information within an institution, we asked hospitals how they present their business results. 95.2% of the institution responded that they present the business results within the institution. The level at which the results are presented is shown in Fig. 2. The highest number of respondents (76%) present the results annually through meetings of management and regularly (monthly, quarterly) to narrower management circle. A significantly smaller share of respondents (33.3%) reports periodically to the lowest level of management. None of the institution continuously reports to all employees. We can

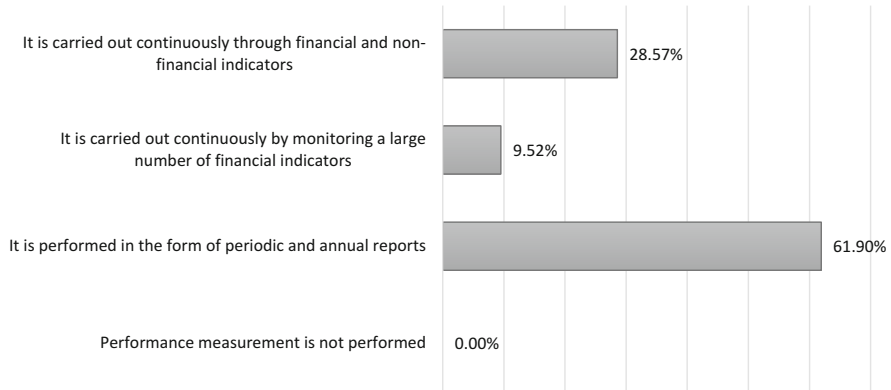


Fig. 3 Performance measurement modes. Source: Table compiled by the authors

conclude that reporting about business results exists, both on a yearly and at a periodic level, but is mainly related to the highest levels of management.

These results are in correlation with answers to the question about the information needs of hospital managers. Namely, managers have been asked whether the information presented in the basic financial statements is sufficient for successful business management of the institution. 57.1% of respondents answered that this information is mostly (47.6%) or entirely (9.5%) sufficient. 28.6% of the respondents believe that this information is not enough at all, and 14.3% of them think they are mostly insufficient. Since rational and cost-effective budget management requires comprehensive and relevant information from internal and external reports, it is evident that only part of public hospital managers has developed an awareness of the need for a broader range of information for successful business management.

In order to determine the level of performance indicators use for decision-making of Croatian hospitals managers, we asked how they measure performance. The results, shown in Fig. 3, show that as the most commonly occurring forms appear periodic and annual reports (61.9% of respondents). The responses mentioned above are again in correlation with the beliefs of public managers that annual reports are sufficient for management purposes. Only one-third of hospitals continually measure and monitor performance based on indicators.

Most of the respondents (85.7%) define performance indicators based on the need to inform the budget in charge. Own indicators, defined for internal needs, have 57.4% of surveyed institutions. The results indicate a strong correlation between information requirements of the budget authority with hospitals' performance measurement.

Figure 4 indicates the aspects that are base for performance measurement. The highest share of respondents (61.9%) track performance indicators related to quality. The next aspect that they monitor is patients (at 52.4%) of the hospital. Less than half of the hospitals keep track of other aspects such as the healthcare process, the growth and development of the organization, and human and material resources. These

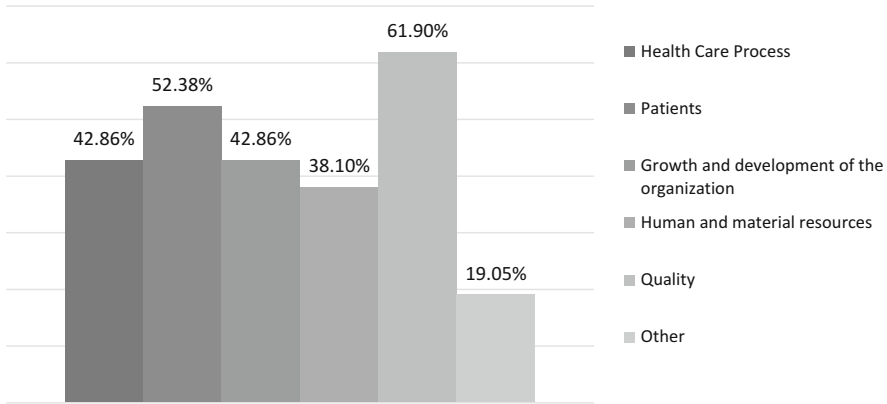


Fig. 4 Performance measurement aspects. Source: Table compiled by the authors

aspects represent the essential elements and processes of healthcare. From other aspects, financial performance is emphasized.

The most significant number of surveyed hospitals has defined 1–10 performance indicators (57.1%). 14.3% of respondents have defined 11–20 indicators, and 19.05% of the 21–50 indicators. One respondent has more than 50 indicators, and one respondent has no indicator. For successful management, it is essential to focus attention on key business aspects and to choose the optimal number of indicators. Recommendations are that the key indicator number is ≤ 20 . The too small number of indicators leads to the lack of balance between the desired results and the triggers of their achievement. While, a too large number of indicators, due to the extensive coverage, creates the wrong picture of hospital operations because of broad information spectrum.

Comparison of performance indicators are doing 19 of 21 institutions. The results of the performance measurement they monitor through time (76.2% of respondents) or compare it with default size (plan) (52.4% of respondents). Only a small part of the institutions (33.3%) compares the results with other similar institutions. The comparison of the achieved results with the set goals, previous results and the results of similar institutions is vital for assessing the success of achieving strategic goals and program results. It is also essential for the economy, efficiency and effectiveness of budget users' performance.

The extent to which hospitals apply the results of performance measurement in the decision-making process is visible in Fig. 5. Respondents rated the importance from 1 (least importance) to 5 (most important). Short-term (daily and weekly) decisions are partially based on the results of performance measurement and the majority of the respondents rated it by 3. Medium-term (monthly) decisions and long-term (strategic) decisions are a bit more based on performance measurement results, which can be seen through a more significant number of four and five grades. We can conclude that performance measurement is partially important for making day-to-day decisions (average rating 3.38). As the decision-making period is

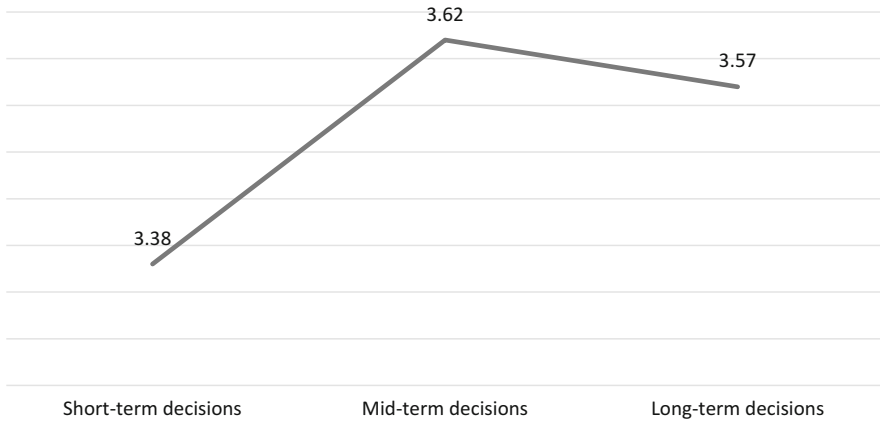


Fig. 5 Performance measurement results as a basis for decision-making. Source: Table compiled by the authors

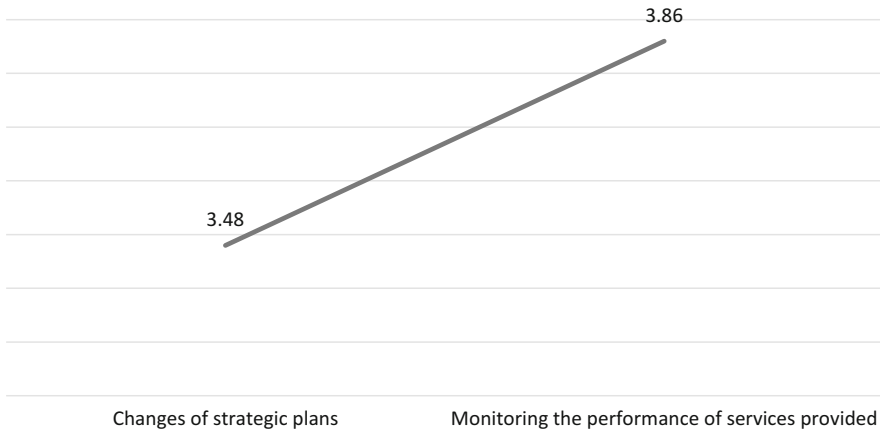


Fig. 6 Performance measurement results as a basis for planning and control. Source: Table compiled by the authors

prolonged, the importance of performance measurement is growing gradually (for medium-term decisions, the average rating is 3.62 and for long-term 3.57).

Figure 6 indicates that the surveyed hospitals partly use the results of performance measurement for changes in strategic plans (average score of 3.48) and monitoring the performance of the services provided (average rating 3.86).

In order to determine the level of use of the performance measurement results in business decision-making, we asked about the importance of performance indicators in business processes such as planning, information, control, improvement, quality assurance, and transparency. We asked respondents about the current state of the use of indicators in business processes and their opinion on the need for their usage.

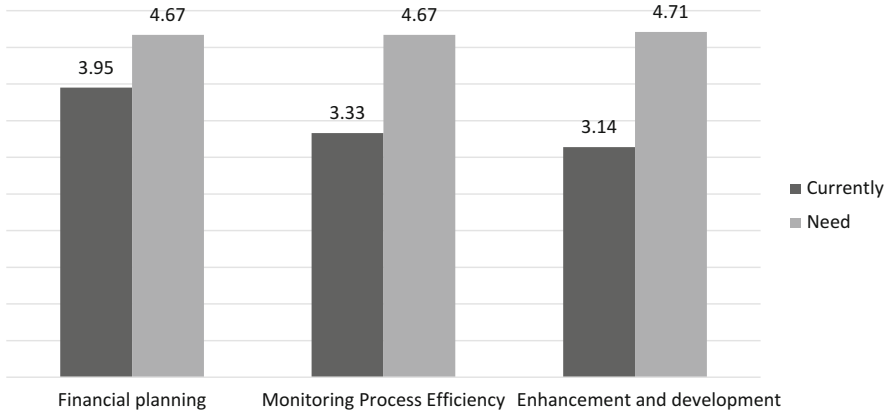


Fig. 7 Importance of performance indicators for planning, tracking, and enhancement. Source: Table compiled by the authors

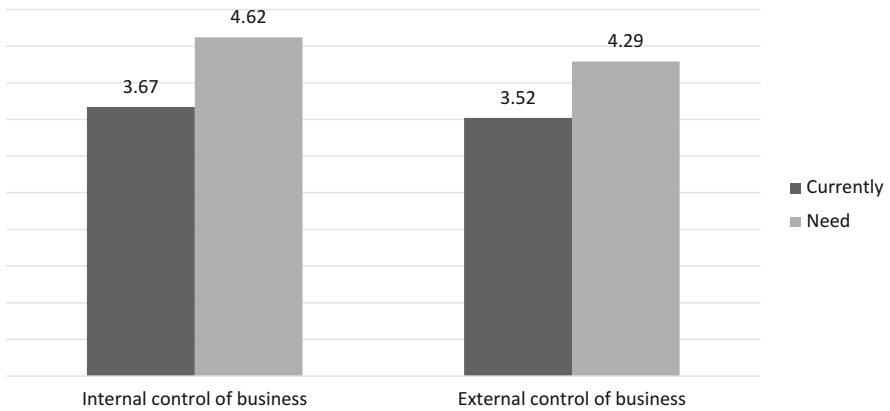


Fig. 8 Importance of performance indicators for internal and external control. Source: Table compiled by the authors

Respondents evaluated the importance from 1 (minimum importance) to 5 (highest importance).

From Fig. 7, it is visible that the observed hospitals use performance measurement results partially in the planning and allocation of resources (average grade 3.95). The use of indicators is considerably lower in the process of monitoring efficiency (average rating 3.33) and the process of improvement and development (average rating 3.14). However, public managers believe that their use in these processes should be significantly more substantial and more significant. For all processes, they rated it with a high 4.7 average grade.

Public hospitals also partially use performance measurement results for the needs of internal and external business control. As can be seen in Fig. 8, public managers

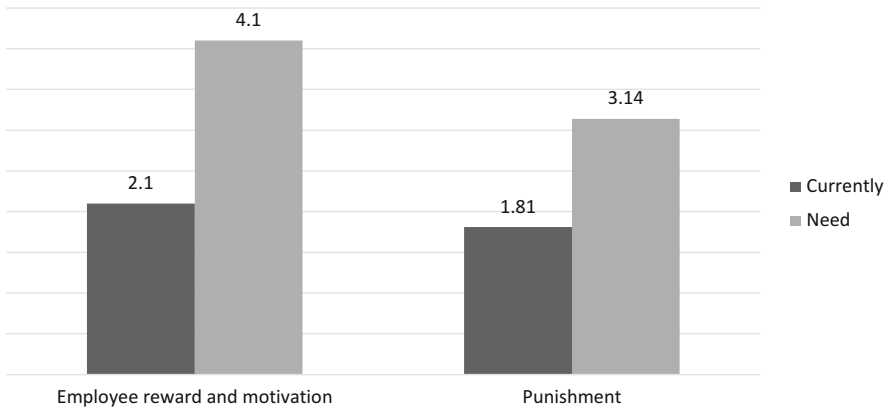


Fig. 9 The importance of performance indicators for reward and punishment. Source: Table compiled by the authors

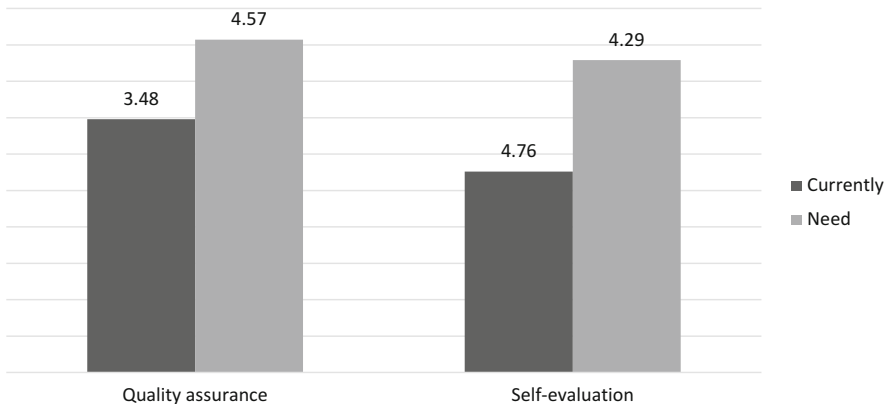


Fig. 10 Importance of performance indicators for quality assurance and self-evaluation. Source: Table compiled by the authors

are aware of their even greater significance and potential for use, especially in internal control processes. Given the developed awareness of the importance of using performance indicators in internal business control procedures, the question arises as to the discrepancy in their application.

Performance indicators are rarely used for employee rewarding and motivation purposes (average grade 2.1), but public managers are aware of their more excellent usability (average rating 4.1). Figure 9 shows that performance indicators are not used for punishment purposes (average grade 1.81), but managers believe that they need to be used to some extent (average rating 3.14).

Performance indicators have moderate importance in quality assurance procedures, as shown in Fig. 10. The current use is the rate at 3.48, and the possible use is rate with 4.6 average grade. In self-evaluation processes, their use is even

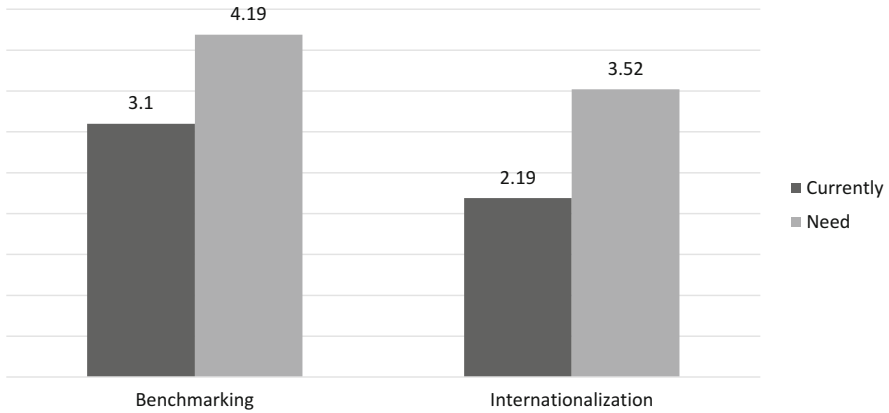


Fig. 11 The importance of performance indicators for benchmarking and internationalization. Source: Table compiled by the authors

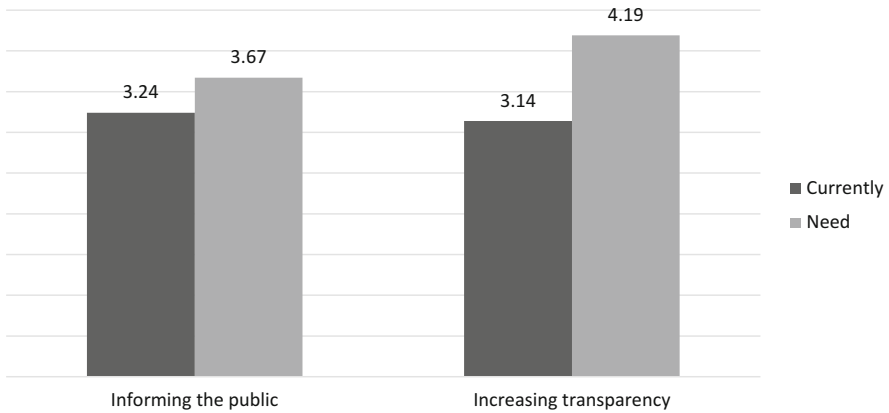


Fig. 12 Importance of performance indicators for transparency and informing the public. Source: Table compiled by the authors

lower (average score of 2.8), but there is a higher possibility of their usage (average grade 4.3).

While performance indicators are a powerful tool for comparison with other similar institutions, their use is not very common in Croatian public hospitals (average grade 3.1). The managers of these institutions are aware of the higher usage possibilities (average rating of 4.2). As can be seen in Fig. 11, the use of performance indicators in internationalization processes is deficient (average grade 2.2), while awareness of the possibilities of usage is more developed (average grade 3.5).

As can be seen in Fig. 12, performance indicators are partially used for informing the public (average grade 3.2) although awareness of their relevance to public

managers is a bit more developed (average grade 3.7). Their use in increasing transparency is also quite low (average rating 3.1), and more significant future use opportunities (average grade 4.2) are visible.

Based on the analyzed results, we can conclude that the Croatian public hospitals, to a certain extent, apply the results of performance measurement for decision-making purposes. The level of usage differs depending on business processes within the institution. Their use is most prominent in financial planning procedures. Performance indicators hospital partially use in the internal and external control process and quality assurance. They are less used for tracking process efficiency, improvement and development, comparison with other hospitals, informing the public, increasing transparency, and self-evaluation. They have little importance for the reward and motivation of employees, punishment, and internationalization. The awareness of managers about the need and the ability to use performance indicators in all segments of hospital business management has been developed to a significant extent.

All public hospital managers consider it necessary to define sectoral performance indicators at the state level, while 66.7% consider it necessary to define these indicators also at the global (European) level. Defining sectoral indicators and target values, measuring and publishing information about achieved results, would facilitate comparison between hospitals, increase in business transparency, and responsibility for budget management.

The most significant indicators that hospitals measure include: customer service satisfaction, mortality rate, number of patients, duration of treatment, number of cases, number of repeated admissions, patient turnover per bed, capacity utilization, number of employees, employee satisfaction, unwanted events analysis, activity indicators, financial results, cost-effectiveness analysis, cost-per-business analysis, etc. Selected indicators include the most important aspects of hospital business (patients, healthcare process, material and financial resources). The nonfinancial and financial performance indicators are also visible.

Figure 13 shows that the most important sources of information needed for performance measurement are the accounting service and the integrated hospital information system. These responses are in line with the significant number of financial indicators that the hospitals measure. A significant part of hospitals (76.2%) has defined internal reports that allow them to measure and track their performance. Information provided by the personnel department is also a significant source of information for performance measurement. We can conclude that hospitals do not have a single database in their information systems required for the calculation of performance indicators. They need to be collected from different sources.

Performance indicators by the opinion of hospital managers are of most importance for hospital managers, which is evident through an exceptionally high average rating of 4.9 shown in Fig. 14. Great importance, according to managers' ratings, also has a relevant budget (4.57) and regulatory bodies (4.43). A bit lower ratings for importance of performance indicators by the opinion hospital managers are assigned to service users (4.14), employees (4.1), public (3.9) and media (3.71). These responses point to the conclusion that hospital managers consider performance indicators necessary for internal needs and oversight by regulatory bodies. On the other hand, informing the

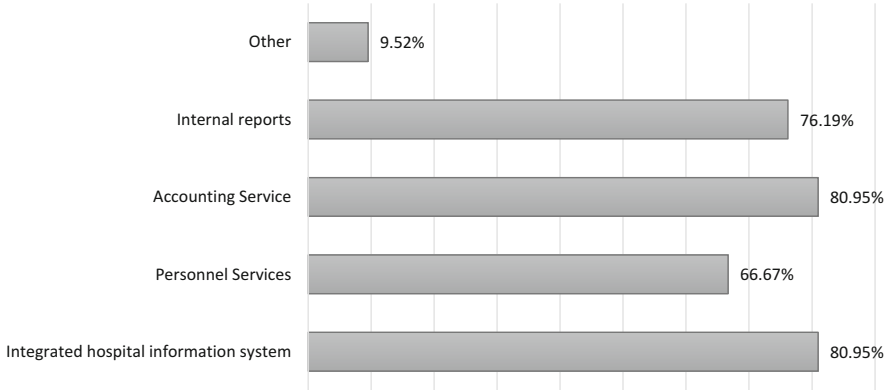


Fig. 13 Sources of information for performance measurement. Source: Table compiled by the authors

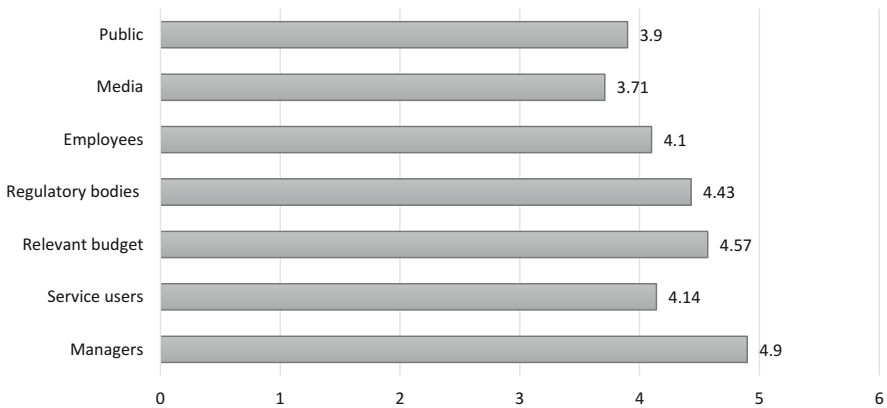


Fig. 14 Importance of performance indicators for stakeholders. Source: Table compiled by the authors

public, and thus increasing the transparency of business through the presentation of performance, is considered to be a less critical aspect of the business.

Most public hospital managers consider that mainly (61.9%) or entirely (14.29%) they have the knowledge and skills necessary to define performance indicators.

5 Conclusion

The analysis of the results of the research has shown poor development of strategic planning and reporting of achieved results within and outside the institution. Reporting on results is limited to a narrower management circle. The information

needs of the managers are not developed and are reduced to annual financial statements. Measurement of performance is thus primarily based on monitoring of periodic and annual financial statements. Defined performance indicators are mostly concerning the needs of the relevant budget, and the most critical aspects are quality and patients. The results of performance measurement are monitored over time or concerning the plan.

Croatian hospitals performance indicators partially use for planning, monitoring and quality assurance of services through the adoption of long-term (strategic) decisions. Performance indicators are rarely used for punishment or reward, internationalization, self-evaluation, and benchmarking. However, public hospitals managers are aware of considerably larger opportunities for applying indicators, especially in planning, decision-making, and control processes. Informing about indicators for hospital managers is neither essential nor developed.

Based on the research conducted, it is evident that performance measurement through financial and nonfinancial indicators has not been developed at Croatian public hospitals, which is in line with insufficiently developed information needs of managers. Since performance indicators are an essential aspect of tracking and improving business, it is concluded that for efficient hospital management it is essential to educate managers of the ability to use performance measurement results in all business processes and develop their awareness of the importance of using them.

Acknowledgment This work has been supported in part by Croatian Science Foundation's funding of the project 8509 Accounting and financial reporting reform as a means for strengthening the development of efficient public sector financial management in Croatia. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the Croatian Science Foundation.

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Bank Reliability Assessment Model: Case of Latvia



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Abstract Reliable and stable banks are an important precondition for the sustainable development of national economy. The objective of the chapter is to design a model allowing assessment of bank reliability in the context of bank financial strength. The model is designed using publicly available financial statement data of Latvian commercial banks, in the period of 2003–2016, macroeconomic data as well as aggregate statistical data of Latvian banking sector. The model allows calculation of ratings reflecting reliability level of banks. The model is designed based on the multiple choice model *ordered logit*. The chapter identifies the most important factors reflecting reliability level of banks, including shareholder equity ratio, profitability, assets structure, loan portfolio structure, and others. The assessment of bank reliability shows that the global financial crisis had a negative impact on Latvian commercial banks, revealing imbalances in bank operations and performance, causing decrease of profitability and deterioration of bank loan portfolios.

Keywords Bank · Financial strength · Rating · Reliability

1 Introduction

Commercial banks are often seen as a key driver of the financial system and the economy of a country. Besides, stability and reliability of banks is an important precondition for the sustainable development and competitiveness of the national economy. After the recent global financial crisis the issue of bank reliability and stability became especially topical as in a number of cases state-financed bank recovery was necessary to maintain stability of the banking system of the country. Moreover, assessment of bank reliability and stability is important not only for the bank and for the responsible financial market authority, but also for a wide range of stakeholders, including existing and potential customers, investors, corresponding

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banks, and partner institutions. One of the most commonly used tools used in the financial market for the assessment of bank reliability is rating. Ratings assigned by the international rating agencies as Standard and Poor's, Moody's, and Fitch are widely recognized in the world. The ratings measure future relative bank financial strength (Moody's), thus showing also the level of reliability. Nevertheless, due to a number of reasons, including relatively high costs of these ratings assignment, many banks across Europe do not have a rating assigned by an international rating agency. This makes it difficult for non-banking community to assess the bank and its reliability.

There are a number of studies related to assessment of reliability of banks in different countries. However, the research on the Latvian commercial banks is scarce. The case of Latvian banking system is unique due to its structure: There are banks entirely concentrating on international (non-resident) clients and banks oriented exclusively on local (resident) customers. The global financial crisis had a divergent impact on bank performance; therefore, the objective of the chapter is to design the model to assess bank reliability in the context of its financial strength. Analysis of reliability level of banks is done using the case of Latvian commercial banks in the period of 2003–2016. The ratings are calculated using the methodology of the commercial bank reliability rating that has been developed based on the multiple choice model *ordered logit*. The analysis is based on the publicly available data: macroeconomic data, aggregate statistical data of the banking sector, and the financial statements of Latvian commercial banks. The chapter reveals the trends in the reliability level of Latvian commercial banks in the precrisis and the after-crisis periods. The chapter contributes to the literature by creating a framework that is unique in the context of European banks; it identifies the most important factors influencing reliability of Latvian banks, including loan portfolio quality, capital adequacy, return on assets, and liquidity ratios.

The chapter is organized in four sections: the first section proves the topicality of the topic; the second section provides the review of theoretical background of the chapter; the third section provides a summarized analysis of the main stages of Latvian banking sector development substantiating topicality of the bank reliability issue. The fourth section provides description of the methodology and the model design, explaining the main steps in model design. The fifth section presents the results of Latvian bank reliability analysis using the designed model. Conclusions provide the main findings of the chapter.

2 Literature Review

The issue of bank reliability and trust of existing and potential clients is very important nowadays for different stakeholders, including financial regulators, clients, and partner institutions. Besides, loss of reliability of one bank may threaten the reliability and stability of the whole banking sector. It is difficult to formalize the concept of reliability due to the absence of a unified definition.

Many academic studies are devoted to the analysis of various aspects of banking: bank performance, reliability, financial condition, financial strength, viability, risk exposure, soundness, sustainability and others, but less to reliability. In majority of cases, the idea is to provide information on the bank stability to the public. We believe that in this context especially important becomes the issue of bank reliability especially in the context of bank financial strength. Strong bank financial strength positively affects bank operations and performance (Hammer et al. 2012) and can be calculated by external users of information, including public. Bank reliability can be assessed from different aspects as time in the market, the bank business history, image of the bank, and the most popular assessment tools are ratings. Bank ratings, in general, are seen as an overall indication of the bank condition (Stuhr and Van Wicklen 1974). Nowadays ratings can be used for different purposes, including supervisory (Van den Bergh 2000).

Approaches used to design bank ratings differ to a large extent. Rather popular approach used for rating assignment is based on the CAMELS categories: capital, assets, management, earnings, liquidity, and sensitivity to market risk (Lopez 1999). Usefulness of this approach with some minor drawbacks was proven in a number of studies (Barker and Holdsworth 1993; Cole and Gunther 1998; Hirtle and Lopez 1999).

Another approach used is based on the application of multicriteria techniques (Mareschal and Brans 1991; Raveh 2000; Doumpos and Zopounidis 2010). According to Green (2002) the multiple choice model is appropriate for rating design as it provides the possibility to select variables from a wide set of variables. This approach is applied in this chapter. Banks operate in the particular economic environment. Therefore, economic development of the country may have not only positive, but also a negative impact on the financial condition of banks. It is shown in a number of empirical studies indicating that a certain macroeconomic situation in the country can lead to a banking crisis (Demirgüç-Kunt and Detragiache 1997; Sachs et al. 1996). On the other hand, macroeconomic situation and economic cycle have an influence on the assessment of risks and assignment of ratings. The same criteria can be assessed in a different way depending on the economic downturn or upturn (Amato and Furfine 2004; Segoviano and Lowe 2002). Besides, several studies show that inclusion of macroeconomic variables improves the explanatory power of the models (Karminsky and Khromova 2016). Thus, the economic situation in the country should be taken into account designing the rating model. An important indicator in this context is also a sovereign rating of the country (Lazarides and Drimpetas 2016), but we ignore it as the study is based on one country without an international comparison. Therefore, design of the model presented in this chapter implies use of macroeconomic indicators.

3 Case of Latvian Commercial Banks

Establishment of Latvian commercial banks goes back to 1991, the year Latvia has retained independence. The first years of independence were marked with the relatively rapid establishment of commercial banks as stockholding companies: 51 banks already operated in Latvia by the end of 1992. It can be explained with the rather low minimum capital requirements and relatively high inflation reducing effective value of the minimum capital requirements. Already in 1994 Latvian banking sector experienced a number of problems due to high inflation, substantial drop of production volume, and decrease of real GDP that consequently decreased bank investment opportunities. Difficulties were also related to incomplete legislation and supervision. The developments led to the first banking crisis in 1995. Particular reasons of the crisis were identified as weak management of bank liquidity and bank asset-liability term mismatch, bad loan quality, insufficient loan collateral, deficient control of bank open foreign exchange position, lack of experience, and insufficient regulation of the banking sector (Körnert and Romānova 2014). This crisis of 1995 resulted in substantial decrease of the number of banks due to insolvency. Due to the absence of bank deposit guarantees system the bankruptcy of four leading banks (Latvijas Depozītu banka, Centra Banka, Olimpija as well as Bank Baltija) was a serious examiner for the whole Latvian economy, including not only private individuals, companies, but also local authorities and state companies. The total costs were estimated at the level of ca. 75 million euros (Hansson and Tombak 1999). It has substantially shattered trust to the banking sector. Later, the crisis has caused serious review of legislation and more strict regulation of the banking sector. But the issue of bank reliability became topical.

After the crisis, the Latvian banking system has stabilized relatively quickly and successful development continued till the Russian financial crisis as some banks had a considerable share of assets invested in the CIS countries, including Russia. Four banks went liquidated. It was stimulated by extremely large withdrawal of deposits, supported by rumours. This crisis has shown how sensitive is the issue of trust in reliability of banks for the general public. In general, the stability of the banking sector was not troubled as in general the total exposure to Russian sovereign and corporate debt instruments of Latvian banks in 1998 was less than 10% (IMF 2004).

Accession to the European Union in 2004 gave a strong positive impulse to the development of Latvian economy. Over the period of 2004–2007 the average annual GDP growth rate has been 10.38% (compared to 2.7% in EU–27). Successful economic development and favourable economic conditions in its turn stimulated quick development of Latvian commercial banks. Growing demand, increase of consumption, and rise in investments have promoted bank loans. Lending operation became a core business of Latvian commercial banks (loans constituted more than 60% of total assets) bringing more than 70% of aggregate income. The period of

2004–2007 can be defined as excessive lending or lending boom¹ stimulated by the increase of creditworthiness of potential and current borrowers as well as their willingness to borrow. It was a result of positive economic outlook, availability of relatively cheap resources, rising asset prices (including the real estate market) and other factors. Important is to stress that banks were seen as very reliable and have enjoyed the full trust of all stakeholders.

The global economic crisis of 2008 had a significantly negative influence on the development of Latvian economy. The double-digit GDP contraction of GDP by 18% has changed the economic conditions performing negative impact on the Latvian banking sector. The banks have experienced substantial deterioration in assets quality and sharp increase of non-performing loans resulting from the economic downturn and collapse in real estate prices. The financial distress of 2008 did not shatter the stability of the banking sector as a whole, but the second largest bank (JSC Parex banka) was taken over by the government to help the bank to overcome liquidity problems. This also helped to avoid loss of trust in Latvian banking sector and keep it reliable. Following the crisis, banks have reviewed their lending policy and operations, improving lending standards, avoiding further underestimation of credit risk and overestimation of collateral. These measures have contributed to the quick recovery of the sector.

Nowadays the Latvian banking sector is represented by two groups of banks with completely different target customer groups and revenue sources (Bojāre and Romānova 2017): banks with a business model oriented on local customers and banks targeting mainly non-residents. This separation of the market was effective till the recent trends towards stricter regulation of the banking sector, including anti-money laundering, know your customer procedures, etc. It makes formerly non-resident oriented banks to change their business model targeting more local customers. The developments in the Latvian banking sector regularly raise the issue of bank reliability.

4 Methodology and Rating Model Design

The methodological basis of the chapter is special economic literature, research and working papers, financial statement data, statistical information, and results of research made by the authors. The chapter aims to design a model to assess bank reliability in the context of its financial strength. The model design is based on the initial selection of indicators to be included in the model, subsequent choice of indicators included in the model, and setting up a rating scale. The choice of indicators and assignation of coefficients is done applying the multiple choice

¹According to the IMF methodology, lending can be defined as excessive lending (or lending boom) if it exceeds the standard deviation of that country's credit fluctuations around trend by a factor of 1.75 (IMF 2004).

As mentioned above, the first step of rating design implies the initial selection of indicators that will be used in the model as explanatory variables. Based on Moody's Investors Service methodology, we have selected the following indicators that describe:

Size of the commercial bank

TA total assets
EQ the size of the paid equity capital

Return on the bank operations

YAEA yield on average employed assets
CAIL return on employed liabilities
NIM net interest margin
REP return on average assets (before taxes)
ROAA return on average assets
ROAE return on average equity
IE_II proportion between the interest expenses and income
DIV dividends/net profit

Effectiveness of bank operations

CIR cost – income ratio
PE_OI payments to employees/total operational expenses

Quality of commercial bank assets

PL_GL share of non-performing loans in the total loan portfolio
LLR_GL loan portfolio quality ratio
PL_EQLLR non-performing loans to shareholder equity and special provisions

Adequacy of bank equity

TIR Tier 1 capital ratio
EQ_TA paid equity to total assets
CAR capital adequacy ratio

Liquidity of bank

ANL_AD average net loans to average deposits
D_EQ deposits to equity paid
LIQ_B claims to credit institutions to liabilities to credit institutions.

Additionally we have included the indicators and ratios calculated and controlled by the FCMC (FCMC): bank profit before taxes, bank equity capital to total assets, efficiency of bank financial performance, costs to income, risk-weighted assets to total assets, liquidity ratio, long-term loans issued to non-banks to total loan

portfolio, loans issued to non-banks to total assets, loans issued to non-banks to total deposits, demand deposits to total deposits.

Moreover, to take into account changes in the external environment of the banks, we have included the following macro indicators: annual growth of GDP, inflation (consumer price index), total investments to GDP, and unemployment rate (the number of unemployed people as a percentage of the labour force).

The second step implies selection of indicators to be included in the model. The selection is done applying the multiple choice model (*ordered logit*) with the use of eViews 7.0. We assume the Long Term Bank Deposit Ratings awarded by the Moody's rating agency to the Latvian commercial banks to be the dependable variable (denoted as *MR*). The sample includes data of financial statements of Latvian commercial banks with a rating awarded by the Moody's in the period from 2003 to 2016. The total sample after adjustments (only financial statement data of banks with the assigned Moody's rating selected) constituted 112 observations.

5 Model Results and Discussion

Based on the econometric analysis done we have chosen a model which includes five indicators characterizing bank-specific risk and one macroeconomic indicator characterizing the general risk (Table 1).

Based on the analysis of Pseudo R^2 , LR statistic indicator, Akaike info criterion and Log likelihood (see Table 2) we have selected the model with the best fit to criteria. The Pseudo R^2 is 35 that conforms the generally accepted practice in social sciences.

The selected bank reliability assessment model includes six variables: EQ_TA—paid equity to total assets, ROAA—return on average assets, K4—loans issued to non-banks to total assets, K6—long-term loans issued to non-banks to total loan portfolio, PR—bank profit before taxes, and INV—total investments to GDP.

All these indicators characterize different aspects of bank performance and allow assessing different aspects of bank financial strength.

The bank equity (EQ_TA) is one of the main determinants of bank reliability and stability. The particular volume of equity is compulsory for the bank. The paid equity to total assets ratio shows how much can be received by the shareholders in

Table 1 Banks reliability assessment model

Variable	Coefficient	Std. error	z-Statistic	Prob.
EQ_TA	0.176544	0.037232	4.741757	0.0000
ROAA	0.417323	0.134086	3.112353	0.0019
K4	0.109173	0.015059	7.249664	0.0000
K6	-0.036524	0.008350	-4.374049	0.0000
PR	0.190229	0.061674	3.084444	0.0020
INV	0.063850	0.028261	2.259296	0.0239

Source: Designed by the authors based on eViews 7.0

Table 2 Assessment criteria

Criteria	Value
Pseudo R^2	0.350355
Schwarz criterion	2.564314
Hannan–Quinn criter.	2.405647
LR statistic	126.8976
Prob(LR statistic)	0.000000
Akaike info criterion	2.297319
Log likelihood	–117.6499
Restr. log likelihood	–181.0987
Avg. log likelihood	–1.050445

Source: Designed by the authors based on eViews 7.0

case of bank liquidation. Besides, equity capital is kind of buffer to absorb external shocks. There should be a balance in the share of equity in the total assets as in case of a relatively low share of equity capital bank is more exposed to default risk given the deterioration of economic conditions. In the case of very high share of equity capital in the total assets, bank is less competitive.

The indicators “return on average assets” is used to assess profitability of bank’s assets. The interpretation of the indicator is slightly controversial. On the one hand, high level of assets’ return indicates the ability of the bank to manage effectively the bank resources and control the level of operational expenditures. On the other hand, high level of return implies higher level of risk the bank is exposed to. Besides, the level of this indicator depends on the current economic conditions in the country and the structure of bank liabilities (e.g., share of deposits in attracted resources). A balance is necessary for this criterion as well.

The indicator K4 (loans issued to non-banks to total assets) describes the lending policy of the bank. In practice, if the indicator exceeds 65%, the bank loan portfolio is “overloaded” and a reallocation of resources would be necessary. Further increase of this ratio means a higher level of credit risk. It can be vitally dangerous for the bank if due to the deterioration of economic situation the borrowers do not pay or delay the loan repayment. This is evident from the situation on the US commercial banks market (so-called “mortgage crisis”). Thus, the insufficient level of diversification of commercial banks’ assets increases the exposure of the commercial bank to credit risk and reduces the reliability of the bank.

The indicator K6 (long-term loans issued to non-banks to total loan portfolio) characterizes the share of long-term loans in the loan portfolio of a bank. Undoubtedly, the term structure of the loan portfolio must be in line with the current situation on the market and demand for credit resources. The high proportion of long-term loans in the bank loan portfolio indicates both an increasing level of credit risk and a potentially negative impact on the quality of the loan portfolio.

Profit characterizes the financial strength of a bank. The decrease in profit may indicate the ineffective functioning of bank management and problems in risk management and control.

In terms of attracting investment, position of Latvia is quite strong, as its overall business environment is favourable and investment friendly. According to Eurostat data, Latvia enjoys the instant increase in investment. The banking system is one of the main objects attracting investments. Therefore, higher share of investment in GDP suggests higher bank reliability.

Based on the analysis made we have selected a model with the following limit points:

LIMIT_5:C(7)	7.183603
LIMIT_6:C(8)	8.348403
LIMIT_7:C(9)	10.10332
LIMIT_8:C(10)	10.95519
LIMIT_9:C(11)	14.67386

Therefore, the rating scale can be set up as in Table 3.

Analysing the results of the bank reliability assessment using the designed model, we conclude that the overall assessment of the Latvian banking sector is positive (see Table 4). None of the banks is classified to the low reliability category. In 2016 a bit less than one-third of banks had high reliability level (corresponding to the ratings 7, 8, and 9): ca. 28%. We clearly see a substantial deterioration of reliability rating in 2008 and 2009 following the global financial crisis.

The designed rating model allows to fill the existing gap and to assess the reliability of Latvian commercial banks in the context of bank financial strength. This suggests the practical applicability potential of the designed methodology.

6 Conclusions

The bank reliability issue is extremely important for all stakeholders to maintain trust in the financial sector. Trust is the basis of bank–client relationship. Traditionally popular indicator of bank reliability is a rating assigned by one of the international rating agencies. But after the global crisis of 2008 many banks have stopped cooperation with the international rating agencies due to relatively high costs of ratings and lack of necessity to attract resources on the international financial market. This makes it difficult for non-banking community to assess the bank and its reliability. The chapter fills this gap and designs the model that can be used to assess bank reliability in the context of its financial strength. According to the model, the most important factors influencing reliability of Latvian banks are loan portfolio quality, capital adequacy, return on assets, liquidity ratios as well as attraction of investment to the country.

The assessment of bank financial strength shows that before the global financial crisis of 2008 majority of Latvian commercial banks (ca. 91%) belonged to the high and medium reliability categories. After the crisis, starting with 2008 the level of reliability of banks has started to decrease substantially. The number of banks with

Table 3 Bank reliability rating model scale

Reliability category	Rating category	Rating group	Rating	Limit points	Rating description
High	Aaa	Aaa	9	≥ 14.67386	The highest degree of reliability. Bank has superior financial strength. The operations of the bank are not influenced by internal and external disturbances. The bank meets fully its obligations
	Aa	Aa1, Aa2, Aa3	8	10.95519–14.67386	Very high degree of reliability. Bank has very good financial strength. The commercial bank is slightly sensitive to the internal and external disturbances. The bank obligations are of high quality and a subject of very low risk
	A	A1, A2, A3	7	10.10332–10.95519	High degree of reliability. Bank has good financial strength. The commercial bank is slightly sensitive to the internal and external disturbances that can have negative impact on bank performance. The bank obligations are upper-medium grade and a subject to low credit risk
Medium	Baa	Baa1, Baa2, Baa3	6	8.348403–10.10332	Adequate degree of reliability. The bank has strong intrinsic financial strength. Bank operations are affected by the internal and external disturbances. The bank obligations are medium grade and subject to moderate credit risk
	Ba	Ba1, Ba2, Ba3	5	7.183603–8.348403	Upper-medium degree of reliability. The bank has strong intrinsic financial strength. The bank operations are much affected by the internal and external disturbances. The bank obligations are considered to have speculative elements and are subject to high credit risk
	B	B1, B2, B3	4	< 7.183603	Medium degree of reliability. The bank has intrinsic financial strength. Relatively high exposure to the internal and external disturbances. The bank obligations are considered to be speculative and are subject to high credit risk

(continued)

Table 3 (continued)

Reliability category	Rating category	Rating group	Rating	Limit points	Rating description
Low	Caa	Caa1, Caa2, Caa3	3	n.a. ^a	Low and very low degree of reliability. The bank has adequate and low intrinsic financial strength. Very strong exposure to external disturbances. The bank obligations are considered to be of poor standing and are subject to very high credit risk

Source: Designed by the authors based on the Moody's rating scale

^aThere are certain limitations in the design of the reliability rating model. Due to the use of the econometric analysis of the reliability ratings assigned by the international rating agency *Moody's Investors Service*, the model designed is not able to determine the marginal value limits for the category of low reliability ratings (Caa) as none of the banks in Latvia is assigned a rating in this category

Table 4 Number of ratings assigned to Latvian banks

	Rating 9	Rating 8	Rating 7	Rating 6	Rating 5	Rating 4	Total
2003	1	6	1	2	3	9	22
2004	1	4	3	3	2	8	21
2005	3	3	2	4	4	4	20
2006	2	5	2	6	2	4	21
2007	1	5	4	6	2	3	21
2008	0	1	2	3	4	7	17
2009	1	0	2	3	3	8	17
2010	1	2	0	4	3	9	19
2011	0	3	1	1	3	10	18
2012	1	3	0	2	1	10	17
2013	1	3	0	2	1	11	18
2014	0	1	1	1	4	10	17
2015	0	1	2	1	2	10	16
2016	0	1	2	3	5	5	16
Total	12	38	22	41	39	108	260

Source: Table compiled by the authors

the lowest sub-category of medium reliability level has increased for eight subsequent years, thus showing rather high exposure to the internal and external disturbances. Besides, the obligations of these banks are considered to be speculative and are subject to high credit risk. Slight recovery can be seen only in 2016. Thus, the crisis has revealed imbalances in bank operations and performance, resulting in decrease of profitability, deterioration of bank loan portfolios, and slow increase of the loan portfolio.

Thus, the results of the designed rating model are in line with the general development of the banking sector and can be used to assess the reliability of Latvian

commercial banks in the context of bank financial strength. This suggests the practical applicability potential of the designed model.

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Adoption of Banking Products and Services by Young People: Motives, Terms, and Preferences



Michał Buszko, Leszek Dziawgo, Dorota Krupa, and Malwina Chojnacka

Abstract The paper refers to the phenomenon of adoption of bank products and services by young people (up to 26 years old) in Poland with taking into account children, youths, and young adults as clients of banks. The purpose of the paper is to identify and characterize the motives, terms, and preferences of using banking products and services by the mentioned groups. The research was conducted by studying literature, analyzing bank offers, as well as investigating the group of 209 young people (up to the age of 26) with CAWI technique in the period of January–February 2017. The study confirmed that adoption of banking products and services is primarily dependent on level of education and place of residence. Young people start adopting banking products and services before they become adults and they use them in an active and frequent manner in contrary to other financial services. People under 26 usually use many but simple products. The choice of banking offers is primarily determined by shopping and payments, and the use of credit is very limited.

Keywords Banks · Young people · Financial products and services · Preferences

1 Introduction

Contemporary banking is undergoing the process of transition from traditional servicing based on branches and subsidiaries toward remote contact via internet or mobile applications. Such trend is associated with the need of bank customers to be served in a fast, effective, and totally user-friendly way. The digital evolution of banks is consistent with very fast development of internet and mobile technologies, social media, artificial intelligence, blockchain, and virtual reality. Such factors have

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been influencing and even dominating the style of life of many parts of the society. Banks as traditional financial intermediaries selling relatively homogenous products are, in particular, under pressure to change their way of doing business in terms of fast technologic, information, social, and cultural changes. To face the competition of start-ups, FinTechs and nonbanking financial institutions they not only tend to increase accessibility, reliability, and personalization of products and services but also try to find new groups of customers, which were overlooked in the past. A good example of such customers are young people, including children, youths, and young adults up to 24–25 years. Those customers are as a rule characterized by free use of electronic and mobile devices, common participation in social media and good skills in adopting innovative solutions. Nonetheless, their features are also low incomes, low level of economic or financial knowledge, as well as lack of creditworthiness. Young people are then naturally considered as the first group for financial inclusion.

The process of servicing young people is specific as psychological, cognitive, economic, or legal barriers do not allow banks to offer them full range of products and services. Due to such deficiencies, young people are considered rather as perspective but not target clients of banks. The cost reduction in banking operations due to implementation of online and mobile solutions that require economies of scale makes the process of servicing young people economically justified. Moreover, children, youths, and young adults, including college students, are also natural recipients of the latest digital solutions and innovations in mobile, social media, and information technologies. This way banks may find them as the most-matched and naturally-adapted to the digital changes in banking business. The adoption of bank products and services by young people may support financial institutions in setting directions for future development and allow them to grow and effectively change together with their customers. On the other hand, children and youths mature today faster and they are much more engaged in finance than the previous generations due to their strong day-by-day online and mobile activity as well as using digital solutions based on cashless payments. Thanks to this, they become particularly prone to bank servicing. By adopting the bank products and services children, youths, and young adults may become financially, economically, and socially included, they may increase their financial knowledge as well as gain competences and skills not obtainable elsewhere.

The aim of this paper is to characterize the adoption of bank products and services by young people, i.e., children, youth, and young adults. The paper will examine the general attitude of young people toward using bank offers, the most commonly used products and services as well as frequency, age of adoption, and access channels to banking products and services. The paper will be divided into two parts. In the first part, there will be investigated general characteristics of the adoption, and in the second part, the adoption will be analyzed assuming division of the group of young people into two subgroups, i.e., under the age of 18 years (children and youths) and above 18 years (young adults). Such division is motivated by legal regulations in Poland, which limit possibilities of children and youths under 18 to conclude the contracts.

For the research purpose of the chapter, there were conducted studies of literature, analyzed offers of banks in Poland and prepared survey research with CAWI technique in the period January–February 2017. The survey results were analyzed with chi-square test, individual logistic regression models, as well as multiple logistic regressions. The major contribution of the chapter is increasing of knowledge considering adoption of bank products and services by children, youth, and young adults, starting from the age of 6–7 years old and ending at the age of 25 inclusive. As the mentioned group is still not the target part of bank clients, the scope and number of investigations on it is limited and usually contains analysis of whole population of retail clients of banks. The research in banking usually take into account the adoption of offers starting from the people at the age of 18, i.e., the period of obtaining full legal capacity.

2 Literature Review

The servicing of young people by banks is a multi-aspect issue which can be analyzed from different perspectives. In general, affection of financial institutions on children and youths is often long-lasting and determining life perspectives as well as life's quality. Childhood is a special life period characterized by fast physical, psychological, emotional, and social development during which children and youth's attitudes, capabilities, and personal features are shaped. The influence of banks on young people can be then critical in positive as well as negative sense. The pressure on developing online and mobile access channels to banking products and services has become fully compatible with the style of life of young people based on the common use of internet and especially smartphones (hence called iGeneration). In general, young people (e.g., Millennials) are much more likely to be internet and smartphone users compared with older generations. Young people also tend to access the internet at least daily and participate in social networking at higher rates than their older counterparts (Poushter 2016). According to Centre for Public Opinion Research in Poland (CBOS) approximately 100% of people aged 18–24 use internet and 99% connect internet wirelessly (CBOS 2016). Moreover, currently, 85% of teenagers aged 13–18 make online purchases (Inwestycje.pl 2017). A phenomenon that justifies offering banking products and services to young people is also the highest use of mobile devices such as laptops and smartphones by young people in online shopping (Gemius 2017) that makes the group particularly prone to access to financial products anytime and anywhere.

The conceptual framework of offering friendly and easy to understand products and services for children can be found in the UNICEF's the Children's Right and Business Principles (UNICEF 2013). The document was based on the rights outlined inter alia in the Convention on the Rights of the Child (UN General Assembly 1989) and presents the guideline for actions that should be taken by any business to avoid the risks to child rights and support positive impact of the business onto children. The work generally assumes two types of corporate responsibility toward children,

i.e., responsibility to respect and responsibility to support children's rights. The characteristics of the needs of young people, motives of banking children, youths, and young adults, as well as desirable features of products and services offered to such groups with empirical examples are presented by Child and Youth Finance International and Mastercard Incorporated International (CYFI and MasterCard 2014). Child and Youth Finance International with NAFI Research Centre characterized in their document the risks, safety rules, and protection solutions of young people when using bank products and services as well as proposed international guidelines and recommendations. The work indicates that there is still no universally accepted financial consumer protection framework that would be dedicated specifically for children and youths (NAFI and CYFI 2017).

The servicing of young people by banks by offering safe, understandable, reliable, customized, and friendly products can be considered as a form of implementing their corporate social responsibility policy as children and youths require specific business approach and they directly do not bring current profits for banks. Offering bank products and services to the mentioned groups should be based on the strong involvement of banks in ethical aspects. Ethics is fundamentally related to financial and banking operations and is a base for enhancing trust (Boatright 2011). Due to the specific role of banks in the economy, one can expect even higher commitment in scope of social responsibility of banks compared to other types of business (Solarz 2010; Korenik 2009). Taking into consideration time value of money one may find that profits from servicing young customers over their lifetime are usually lower than sales of products directly to middle-aged customers (Haenlein et al. 2007). The current contribution of children and youths in banking performance is also negative (Garland 2002). The offering of products and services to the mentioned groups is based then not exactly on expectation of quick profits but rather on the long-term inclusion of young people in social, economic, and financial sphere.

Servicing of young people may generate positive as well as negative consequences for banks and their young customers. The major type of risk affecting customers is their victimization resulting from improper relations bank-customer (Solarz 2018). Bad relations and finally victimization are fundamentally dependent on process of selling instruments that do not meet the needs of consumers, called the misselling (Cichorska 2017). The issue of misselling of products and services emerges from sales policy of banks as well as a general low level of financial knowledge among young people. According to the National Bank of Poland, young people have the lowest financial knowledge in all age groups in Poland and the lowest level of financial inclusion (NBP 2015). The consequences of the negative impact of banks on young customers may be very harmful from a social, economic, and financial perspective. The crucial point is then to offer bank products and services to young customers in a way adjusted to their capabilities, level of knowledge, and ability to understand the terms and needs. Proper servicing of children youths and young adults may bring substantial benefits. A use of savings bank account may positively affect future incomes, assets, savings, and financial education of young people (Friedline and Elliott 2013). Children who use bank products and keep a small amount of savings designated for school are more likely to increase

their level of education than children without bank account (Elliott 2013). The ultimate goal of offering bank products to children and youths should be aimed at increasing level of education and competences given to young people, instead of bringing direct financial benefits to banks. This way financial institutions may create social capital, i.e., social potential of the economy to generate future economic development. The increasing of social capital allows for taking more conscious and rational financial decisions, better management of personal finance, and finally overcoming poverty (Young 2005). Financial education through using bank products and services allows increasing financial knowledge. Such feature increases ultimately prosperity of the society (Farsagli et al. 2016).

Adoption of bank products and services by young people can be evaluated from their social and financial perspective. The access to banking offers helps young people to become active members of society as well as participants of market of nonfinancial goods and services. Using prepaid cards, money transfers, and mobile payments allow them to buy products online, without the necessity of going to a physical store with cash in hand. As young people more often than other age groups indicate payment in cash as a motivation to shop online (Gemius 2018), the access to banking products and services may expand their scope of buying products and services when cash payment is not possible (e.g., streaming services, downloading games, music, video, etc.). This option allows young people to match their peers and to confirm their maturity.

From the broader perspective, the adoption of safe and user-friendly bank products by children, youths, and young adults should be considered as their basic way for their financial inclusion. The research indicate that level of financial inclusion positively influences the prosperity of the country (Allen et al. 2016) and increases financial stability during the period of financial crisis (Han and Melecky 2013). Also, the research on financial inclusion indicates that the higher number of people using financial products and services is positively correlated with converting savings into investments (Cihak et al. 2012). Young people, including young adults, are more likely to be financially excluded in comparison with older generations. Also, to some extent, they exhibit behavior which may lead to their future exclusion by excessive crediting (Atkinson and Messy 2012). The problem of financial inclusion is even greater when parents of young people are uneducated in field of finance. Young people especially approaching adulthood are therefore an important group for financial education supporting their inclusion (Atkinson and Messy 2013). The role of banks in the financial inclusion of children, youth, and young adults is then fundamental.

3 Data and Methods

To investigate the phenomenon of adoption of banking products by young people, we conducted the survey research using CAWI technique in period January–February 2017. The survey included an online questionnaire designated to the

respondents of up to 25 years of age. We assumed the upper age limit is 25 years but not applied lower limit. The upper limit was referring to the age of finishing the education (higher level) and starting work after studies. The age of 25 is also the threshold to which banks are offering promotional conditions of opening and keeping bank accounts for free or at the very low fees. The lower limit was not applied, so the answers could be given by children having ability to understand some basic terms in scope of economics and finance. The invitation to participate in the research was posted on the social media portal and was promoted in the internet blog website. Children, youths, and young adults participating in the survey were also asked to invite their relatives, friends, colleagues, and acquaintances under the age of 25. The questionnaire consisted of totally 25 questions. We structured the questions in three sections. The first one was filled by all respondents independently on the fact of using or non-using of bank products and services. The second was filled only by young people experienced in banking, and the third by was filled by people not using banking offers. For three weeks, there were collected 224 filled questionnaires. Fifteen of them contained incomplete data; hence we decided to reject them. Finally, there were 209 questionnaires taken for analysis and evaluation as a research sample. Among the respondents there were 45 children and youths under 18 (3 under 13 years, 42 in the age 13–17) and 164 young adults (60 in the age 18–21, 104 in the age 22–25). In the group of children and youths, we found just 14 people (about 31.1%) which were users of banking products and services. In the older group, there were 140 users (85.4%) of banking offers. The survey was structured to investigate the subjective level and the sources of financial knowledge of young people, to find a share of users and not users of bank products and services, to know the brand of bank which products and services are used most often, to check the frequency of using of bank products and services, as well as the main channels of using banking products and services. The survey also had the purpose to find types of banking products and services adopted by young people, the age of starting using banking, the products and services used most often. We also wanted to get information on the influence of servicing on the level of financial knowledge, the assessment of safety of banking and the level of satisfaction from using banking products and services. The respondents were also asked about participation in the school's savings union, using other than banking financial products and services, using credit cards, and reasons for non-using bank products and services. The non-users of banking products and services were asked about incentives that would encourage them to start using banking as well as time perspective of doing that. The results of the research presented in this paper contain exclusively data related strictly to adoption of banking products and services.

The results of the survey presented in the paper were analyzed in two parts. The first contains general evaluation of the process of adoption of bank products and services in the total sample. The evaluation was conducted with chi-square test, logistic regression models, and multiple logistic regression models.

The second part contains division of the group of the respondents into two subgroups, i.e., children and youths under 18 years old and young adults from 18 to 25 years. Such division was motivated by a willingness of investigation of

adoption of banking products by younger and older participants classified to the group of young people. The division was justified by the fact that the group under 18 years is characterized by lower level of education and low financial knowledge as well as does not have full legal capacity, i.e., cannot freely use all bank products and services including credit cards and loans. The dependences between age groups and given categories were evaluated with chi-square test.

4 Research Results

4.1 Research Sample

The participants of the survey were firstly generally classified according to their age, gender, education level, place of residence, subjective level of financial knowledge, as well as source of obtaining financial knowledge. The detailed characteristic of the sample is presented in Table 1. The abovementioned characteristic allowed to evaluate the general process of adoption of banking products and services as well as to find differences between distinguished categories. According to the general analysis of answers of the survey participants, the profile of user of banking products and services in Poland is a female over the age of 18, with higher education or higher economic education, living in the city of more than 100,000 inhabitants with good or very good perception of own knowledge and gaining knowledge from school/university as well as internet, media, and books.

4.2 Adoption of Products by Young People

The simple analysis of structure of the sample was extended by the estimation of chi-square statistics to find associations between adoption (ADP) of banking products and variables such as: age (AGE), gender (GEN), place of residence (RES), education (EDU), subjective perception of own financial knowledge (PER), and main source of financial knowledge (SCE) (Table 2).

According to the analysis, statistically significant at $\alpha = 0.05$ were adoption of banking products and age, place of residence, education level, and own perception of financial knowledge. Gender and source financial knowledge turned out to be not associated with adoption of banking products and services.

Apart from chi-square analysis, we calculated parameters of six individual logistic regression models at significance level $\alpha = 0.05$. Calculations presenting variables independently associated with adoption of bank products by young people are presented in Table 3.

The logistic regression models confirmed individual dependence between using of banking products and age, place of residence, level of education, and perception of own financial knowledge. In particular, the strongest influence was noted for

Table 1 Characteristics of the respondents of the survey

Variables	Number of respondents	Share in the sample (%)	Bank products users/non-users	Share of bank product users (%)
Age				
<18 years	45	21.5	14/31	31.1
18–25 years	164	78.5	140/24	85.4
Gender				
Male	33	15.8	23/10	69.7
Female	176	84.2	131/45	74.4
Education level				
Lower ^a	54	25.8	17/37	31.5
Medium ^b	73	34.9	58/15	79.5
Higher ^c	82	39.2	79/3	96.3
Bank products and services users				
Non-users	55	26.3	0/55	0.0
Users	154	73.7	154/0	100.0
Place of residence				
Countryside	86	41.1	61/25	70.9
Town 10 K–100 K	54	25.9	31/23	57.4
City>100 K	69	33.0	62/7	89.9
Perception of own financial knowledge				
Poor/general	78	37.3	46/32	59.0
Average	63	30.1	48/15	76.2
Good/very good	68	32.5	60/8	88.2
Main source of financial knowledge				
Parents/friends	49	23.4	31/18	63.3
Internet/Media/Books	85	40.7	63/22	74.1
School/University	75	35.9	60/15	80.0

Source: Own survey research, *N* = 209

^aIncluding primary, gymnasium, vocational

^bIncluding secondary

^cIncluding high and high economic

Table 2 Categories of adoption of banking products and services by young people

Categories	Chi-square test
ADP_AGE	$p < 0.0001$
ADP_GEN	$p = 0.571 (\alpha = 0.05)$
ADP_RES	$p < 0.0001$
ADP_EDU	$p < 0.0001$
ADP_PER	$p < 0.0001$
ADP_SCE	$p = 0.117 (\alpha = 0.05)$

Source: Own calculations based on survey research

Table 3 Logistic regression models

ADP: Yes = 1, No = 0	B	Exp (B) ^a	95% CI
AGE (18–25 vs. <18)	2.559*** (0.391)	12.917	6.008–27.768
Intercept	–0.795* (0.322)	0.452	
Cox and Snell's $R^2 = 0.207$ Nagelkerke $R^2 = 0.303$ $N = 209$			
GEN (Women vs. Men)	0.236 (0.416)	1.266	0.560–2.862
Intercept	0.833 (0.379)	2.300	
Cox and Snell's $R^2 = 0.001$ Nagelkerke $R^2 = 0.002$ $N = 209$			
RES (Town 10 K–100 K vs. Countryside)	–0.594 (0.363)	0.552	0.271–1.126
RES (City > 100 K vs. Countryside)	1.289** (0.464)	3.630	1.462–9.014
Intercept	0.892*** (0.237)	2.440	
Cox and Snell's $R^2 = 0.084$ Nagelkerke $R^2 = 0.122$ $N = 209$			
EDU (Medium vs. Lower)	2.130*** (0.412)	8.416	3.753–18.871
EDU (Higher vs. Lower)	4.049*** (0.657)	57.314	15.81–207.79
Intercept	–0.778** (0.293)	0.459	
Cox and Snell's $R^2 = 0.297$ Nagelkerke $R^2 = 0.435$ $N = 209$			
PER (Average vs. Poor/Gen.)	0.800* (0.375)	2.226	1.068–4.641
PER (Good/VG. vs. Poor/Gen.)	1.652*** (0.441)	5.217	2.197–12.388
Intercept	0.363 (0.230)	1.438	
Cox and Snell's $R^2 = 0.078$ Nagelkerke $R^2 = 0.113$ $N = 209$			
SCE (Internet/Media/Books vs. Par/friends)	0.508 (0.386)	1.663	0.780–3.544
SCE (School/University vs. Par/friends)	0.843* (0.414)	2.323	1.032–5.225
Intercept	0.544 (0.296)	1.722	

(continued)

Table 3 (continued)

ADP: Yes = 1, No = 0	B	Exp (B) ^a	95% CI
Cox and Snell's $R^2 = 0.020$			
Nagelkerke $R^2 = 0.029$			
$N = 209$			

Source: Own calculations based on survey research

*, **, *** are statistical significance levels of 0.05, 0.01, and 0.001, respectively. The standard error is presented in parentheses

^aOdds rate (OR)

Table 4 Multiple logistic regression model

ADP: Yes = 1, No = 0	B	Exp (B) ^a	95% CI
AGE (18–25 vs. <18)	0.769 (0.672)	2.158	0.579–8.049
GEN (Women vs. Men)	–0.352 (0.551)	0.703	0.239–2.069
RES (Town 10 K–100 K vs. Countryside)	–0.138 (0.491)	0.871	0.333–2.282
RES (City >100 K vs. Countryside)	1.168* (0.595)	3.216	1.002–10.322
EDU (Medium vs. Lower)	1.641* (0.646)	5.159	1.453–18.312
EDU (Higher vs. Lower)	3.289*** (0.856)	26.824	5.010–143.63
PER (Average vs. Poor/Gen.)	0.683 (0.511)	1.981	0.728–5.392
PER (Good/VG. vs. Poor/Gen.)	0.831 (0.575)	2.295	0.743–7.085
SCE (Internet/Media/Books vs. Par/friends)	–0.090 (0.504)	0.914	0.340–2.457
SCE (School/University vs. Par/friends)	–0.379 (0.584)	0.684	0.218–2.149
Intercept	–1.157* (0.695)	0.315	
Cox and Snell's $R^2 = 0.339$			
Nagelkerke $R^2 = 0.495$			
$N = 209$			

Source: Own calculations based on survey research

*, **, *** are statistical significance levels of 0.01, 0.01, and 0.001, respectively. The standard error is presented in parentheses

^aOdds rate (OR)

changing the education level (getting higher education) as well as changing the age group (being 18 years and older).

Analysis of the logistic regression models for each individual variable was extended by multiple logistic regression model. We included in the model all the variables that were used earlier in the individual logistic models. Table 4 presents the all effect model results at significance level $\alpha = 0.1$.

The model indicated statistically significant dependence between adoption of banking products and education level as well as place of residence. Nonetheless, statistically insignificant turned out to be the difference in adoption between young people living in towns (10–100 K) and countryside. The multiple logistic regression model confirmed the strongest dependence between adoption of bank products and a change of the education level from lower to higher. In contrary to individual variables' analysis, statistically insignificant were age and subjective perception of financial knowledge.

4.3 Products and Services Used by Young People

Apart from general analysis of the process of adoption of bank products and services by young people, we also analyze the structures of using banking products and services by two age subgroups of young people, i.e., under the age of 18 and 18–25 (Fig. 1). Such analysis had to find the differences in characteristics of children/youths and young adults adoption of banking products, especially in terms of lack of full legal credibility of the first mentioned group (children/youth). The characteristic feature of adoption of products by children/youths is their use for payments (payment cards and ATMs) and keeping savings (savings accounts and term deposits). In comparison, young adults also use products related to payments (payment cards and ATMs) but the dominant share noted internet banking (checking account balance, wire transfers, and managing personal finance). The group of young adults relatively rarely uses bank products and services related to savings. Mobile banking is used by

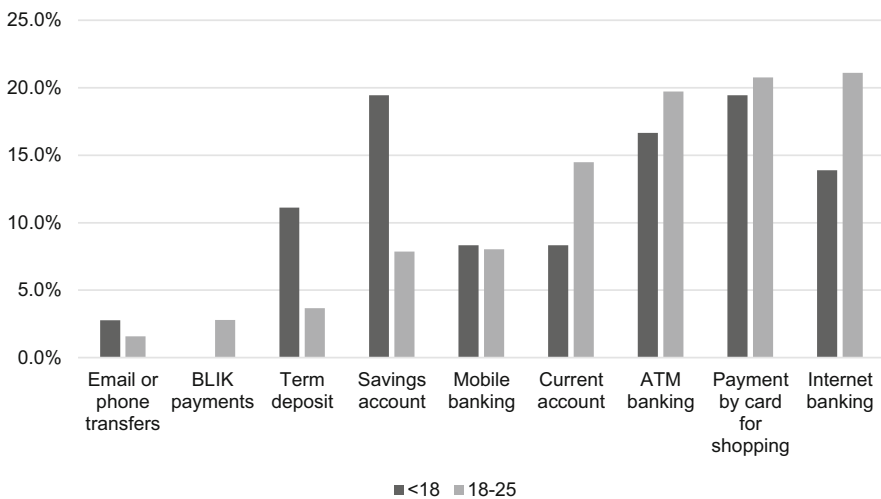


Fig. 1 Banking products and services used in general by young people. Source: Own work, $N = 154$, multiple choice

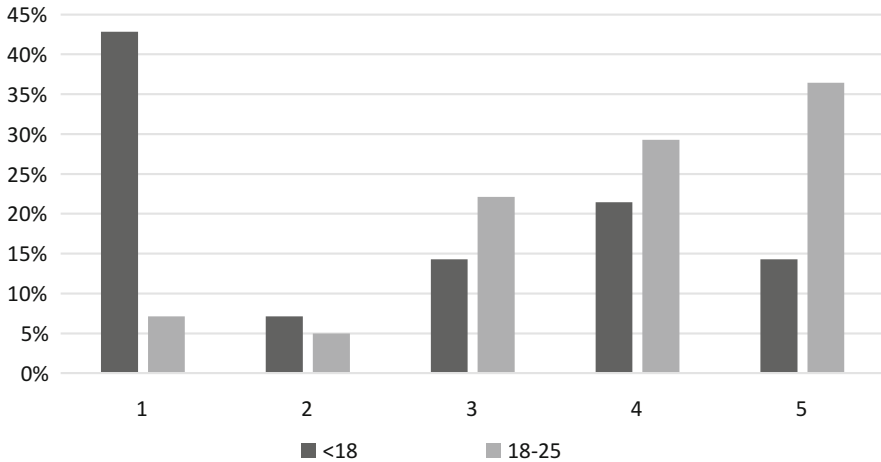


Fig. 2 Number of banking products and services used by young people. Source: Own work, $N = 154$, single choice

both groups in a similar way. The products used by young people are, in general, simple and limiting the risk. None of the respondents (only over 18 years old) indicated using student loan.¹ The statistically significant dependence indicated by chi-square test was noted between age and internet banking ($p < 0.0001$), payment by card ($p = 0.01065$), ATM banking ($p = 0.00673$), and current account ($p = 0.01059$).

We asked also the respondents about using credit cards. Just 24 people of 154 bank customers declared using of credit card.² Three declarations were made by people under 18 years, which may confirm the problem of distinguishing the debit and credit card among young customers.

Taking into account the number of products and services used, one can find its dependence on the age group. Children/youths mostly declare using solely one product. The dominant indication for young adults was five (Fig. 2). The dependence of the age group and a number of used banking products were confirmed by chi-square test ($p = 0.00112$).

The analysis of most frequently used banking products and services indicates that young people prefer vitally using payment cards for traditional or online shopping. This product got the highest share of indications in both age groups, however in case of children/youths, the products related to savings were also of significant importance (Fig. 3). Such indications may confirm the dual character of children and youth's banking, i.e., payments and savings. Due to the lack of regular incomes of

¹People between 13 and 18 years of age have limited legal capacity. They may use most of the simple banking products designed for children or traditional banking offers excluding loans and other types of contracts that create liabilities.

²This option was excluded from the list of products presented in Fig. 1.

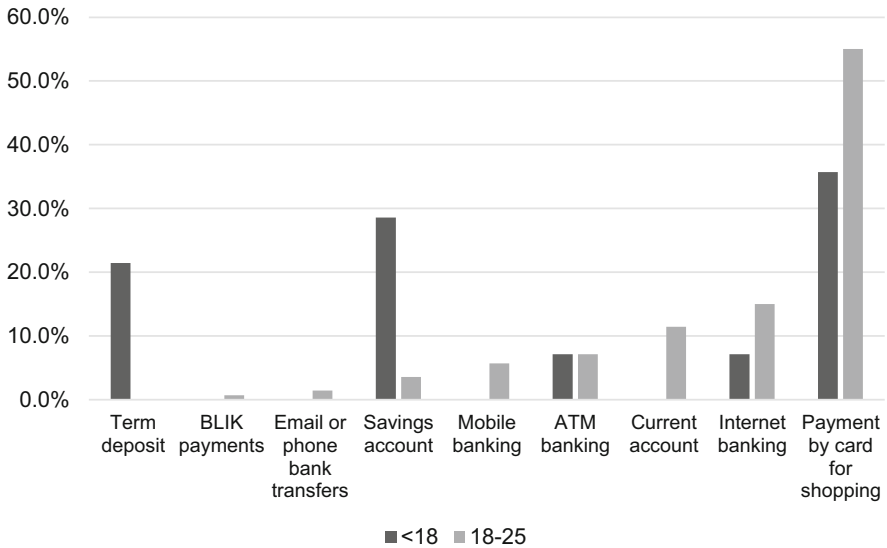


Fig. 3 Products and services most frequently used by young people. Source: Own work, $N = 154$, single choice

children and youths from employment, the importance of savings should be linked with money given to children and youths primarily by parents or relatives. The dependence of the age group and products and services most frequently used by young people was confirmed by chi-square test ($p < 0.0001$).

The authors also investigated the frequency of using bank products and services within the two age groups taken for consideration. The structure of indications presents the increasing frequency of using bank products and services according to the change of the age group. The most common use of banking products is among young adults and usually takes place every day or almost every day (Fig. 4). The dependence of the age group and frequency of use was confirmed by chi-square test ($p < 0.0001$).

An interesting phenomenon can be also identified based on analysis of the age of adopting the banking products for the first time (Fig. 5). The indications of respondents confirm lowering the age of starting adoption of products, where substantial share of offers is adopted by children/youths under the age of 13. In contrary, the respondents in the group 18–25 in majority started using the bank offers after reaching the legal capacity (at the age of 18). The results may indicate the trend of attracting by banks increasingly younger customers in recent years. The dependence of the age group and the age of first adoption of products and services were confirmed by chi-square test ($p = 0.0001$).

Looking at the main access channels for banking products and services one can find that children/youths and young adults use internet as the prime channel (Fig. 6). The interesting fact is using traditional branches as the second choice after the internet by children and youths, which is opposite to the group of young adults.

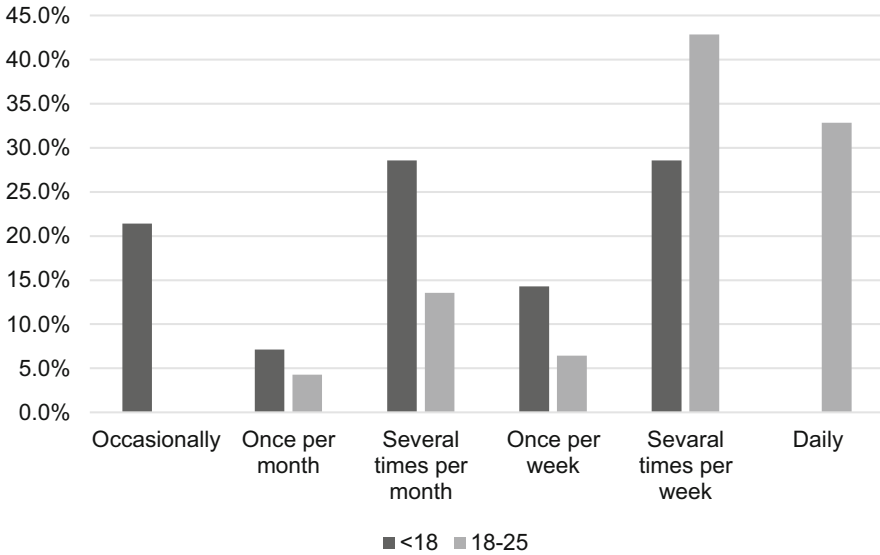


Fig. 4 Frequency of use of banking products and services. Source: Own work, *N* = 154, single choice

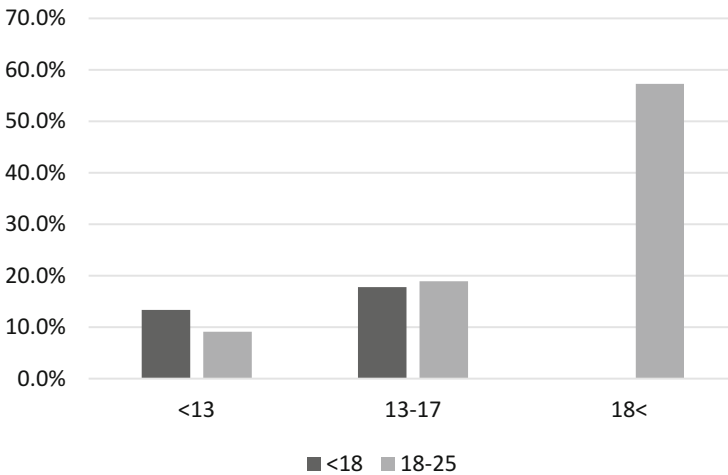


Fig. 5 The age of first adoption of banking products and services. Source: Own work based, *N* = 154, single choice

The explanation of more common use of branches by the youngest group can be linked with a popularity of savings and term deposits, which can be opened or closed by parents in the physical offices of banks. Also, the explanation can be obtaining a feedback and using direct communication, what was also noted in investigation conducted for young people in Bulgaria (Parusheva 2018). The use of mobile phone

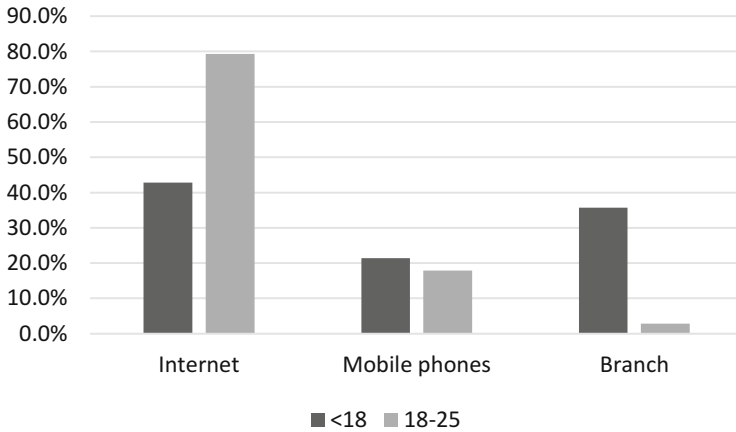


Fig. 6 Main access channels to banking products and services. Source: Own work based, $N = 154$, single choice

access is similar among both groups. None of the respondents indicated the phone service of accessing bank as the main channel. The dependence of the age group and main access channels to banking products were confirmed by chi-square test ($p < 0.0001$).

We investigated also the level and scope of adoption of other than banking financial products and services by users of bank offers. Among 154 young bank customers, there were 27 users of other financial products (mainly insurance—26 people and investment fund units 1 person). Three people used at the same time insurance and investment funds. All of the users of nonbanking financial products and services had at least 22 years. The lack of young users (under 18 years) of nonbanking financial products can be explained by a low range of offers for young customers and impossibility to conclude the contracts due to lack of full legal capacity. In the research sample, there were no people using nonbank financial products and services that would not be clients of banks.

The other aspect of research was the scope of relation between participation in the school's savings union, which is a banking initiative developed mostly in primary schools, and adoption of banking products and services. The investigation showed that all young people who were participating in the past in the school's savings union used bank products and services during time of the research. On contrary, among young people using bank products and services just 40 of 154 were school's savings union participants. Such results may indicate that former participation in the school's savings union supports using bank products and services, however the using of bank offers is not determined by participation in the union. The statement presented above may be confirmed by the value of chi-square test pointing the lack of statistically significant dependence ($p = 0.69601$).

5 Conclusion

The banking products and services are becoming commonly adopted by young people. Such tendency results from higher interest of banks in servicing young people as well as foster social growth of children and youths due to use of new technologies and social medias. Banks are willing to serve young people due to several reasons including the need to gain new customers from their early years and create loyalty. Because major products designated for young people are complimentary or low cost, hence young customers are not considered as generating current profit but rather as bringing return in the long term. Majority of young people up to 25 years of age are bank customers (approximately 74% of the sample). Banking products are dominant type of financial products used by young people, and in the group of 13–17 there was no declaration of using other than banking financial offers. The adoption of banking products starts in substantial part before reaching full legal capacity at the age of 18 with a tendency of starting using products by younger generations even before the age of 13. The dominance of adoption falls after reaching the age of 18 years.

According to statistical analysis, the level of education turned out to be a major variable determining adoption of banking products. Highly educated young people are about 27 times more likely to be bank products users than those poorly educated. Place of residence has lower influence on adoption, where people living in the big cities are three times more likely to use bank products than those living in the countryside. Other categories such as age and subjective perception of level of financial knowledge were statistically significant in individual logistic regression models but not in all effect evaluation.

Young people usually use several simple products with the trend of increasing the number of products along with changing the age group. One also can find that young adults reduce the savings purpose of using banking products and services in exchange for making payments. The most frequently used product is a debit card to pay for traditional shopping and on internet. Banking products are used usually daily or several times per week with a trend of increased use along with changing the age group. The major access channel to banking products and services is internet.

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The Bankruptcy Risk of Equity Crowdfunded Companies in Germany



Oliver W. Wojahn and Jan F. Wilms

Abstract The market for equity crowdfunding has grown significantly in Germany. However, several prominent bankruptcies have raised suspicions regarding the quality of companies seeking funding. Inexperienced investors, small funding sizes and a lack of third-party certification can lead to adverse selection processes whereby companies that fail to secure traditional early stage funding turn to equity crowdfunding. A lower quality supply of companies in equity crowdfunding markets would imply higher risk, which in equilibrium should be compensated by higher investment returns. We investigate the adverse selection hypothesis by measuring the bankruptcy risk inherent in German equity crowdfunding transactions and comparing it to concurrent venture capital transactions. While the bankruptcy probability for equity crowdfunded companies is more than six times as high as for venture capital funded companies in the sample, there is no significant difference once we control for further characteristics of the offering. Any regulatory reaction attempting tighter investor protection should consider the cost of shutting out startups from seed or early stage capital, which are especially high in Germany as alternative sources of funding are not as well developed as for example in the USA or UK.

Keywords Equity crowdfunding · Small business finance · Adverse selection · Bankruptcy · Venture capital

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M. H. Bilgin et al. (eds.), *Eurasian Business Perspectives*, Eurasian Studies in Business and Economics 12/2, https://doi.org/10.1007/978-3-030-35051-2_21

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1 Introduction

Crowdfunding describes the process of raising money from the general public in exchange for a monetary or nonmonetary return via a typically web-based intermediary platform (Tomczak and Brem 2013). Equity crowdfunding (ECF) denotes crowdfunding transactions where investors receive a stake in the business or a share of the revenue or profit of the company in which they invested (Harrison 2013). Contrary to other types of crowdfunding, the motivation of investors in ECF transactions is primarily, but not exclusively, extrinsic, as they are looking for a high rate of return (Cholakova and Clarysse 2015). The actual reward on offer, however, remains elusive as quantitative studies in this domain are sparse (Bouncken et al. 2015).

Several well-publicized failures have tarnished the reputation of ECF in Germany. Der Spiegel (2016) highlighted the high risks and limited investor protection in the German ECF market, citing an investor who claimed that only second-rate companies would raise money from the crowd. For example, in September 2014, Munich start-up Vibewrite successfully completed an ECF campaign and raised 560,000 € on Germany's largest crowdfunding platform, Seedmatch. Vibewrite was planning to commercialize a digital pen with motion sensors able to detect the handwriting of the user. According to the company, the product was undergoing beta testing and was in preparation for mass production with a planned volume of 10,000,000 pens in 2018. In February 2015, less than 5 months after obtaining financing, the company had to file for bankruptcy protection and Munich's public prosecutor's office initiated investigations against the CEO for bankruptcy fraud (Kyriasoglou 2015). Goodz, an online shopping platform for socially responsible consumers, was even faster in burning the cash of investors and had to file for bankruptcy protection 77 days after completing a ECF campaign on Seedmatch (crowdinvest.de 2014).

Various a priori arguments can be made to form the hypothesis that the quality of companies seeking equity crowdfunding could be inferior compared to companies seeking alternative forms of early stage financing from angel investors or venture capital (VC) firms. Funding via web-based platforms leaves little room for careful due diligence in the form of face-to-face interactions, as is customary in funding decisions of professional investors (Agrawal et al. 2014; Mollick 2014). Individual investors are often less experienced than professionals in assessing the viability of a business model (Ahlers et al. 2015), and small funding sizes provide little incentives to investigate and evaluate a company carefully, potentially defeating the "wisdom of the crowd" premise (Conrad et al. 2016). Furthermore, ECF transactions typically lack the covenants and staged finance provisions often required by VC investors (Hornuf and Schmitt 2016). Combined with a lack of third-party certification mechanisms like independent analyst reports, this could lead to adverse selection problems: companies that fail to secure traditional early stage funding turn to ECF. A lower quality supply of companies in ECF markets would imply higher risk, which

in equilibrium should be compensated by higher investment returns (Signori and Vismara 2016).

Measuring these returns currently is still difficult, as the main channel for investors to cash out—an exit in an M&A transaction—has only been realized by very few crowdfunded companies. In a population of 212 ECF projects in the UK market, Signori and Vismara (2016) observe 3 exits and 69 secondary offerings. Using the valuation at the exit and for secondary offerings as the basis of calculation, they determine an “expected” annualized return of 8.8%. The return is “expected” because there is no opportunity for investors to cash out at the implied valuation of a secondary offering. Hornuf and Schmitt (2016) find a negative return of 23.3% for an investor devoting the same amount of money to all German ECF transactions between 2011 and 2015.

Both Signori and Vismara (2016) and Hornuf and Schmitt (2017) suggest that future research might compare crowdfunded firms with firms that have tapped other sources of financing. Following this lead, the purpose of this chapter is to investigate the adverse selection hypothesis by measuring the bankruptcy risk inherent in German ECF transactions and comparing it to concurrent VC transactions. The main contribution of this chapter thus is to complement the empirical evidence for the adverse selection hypothesis with a novel data set and methodology for the German market. The results are important especially as a guideline for future regulatory action.

The remainder of this chapter is organized as follows: in Sect. 2, we describe the data and methodology underlying this study. In Sect. 3, we present the results, followed by a discussion in Sect. 4. We conclude with Sect. 5.

2 Data and Method

Our survey comprises ECF and VC transactions in Germany from January 2013 to December 2015. The data for ECF transactions was hand collected on 27 crowdfunding platforms, of which 13 platforms (Aescuvest, bankless24, Companisto, CONDA Germany, Econeers, Fundedby.me, FundrNation, Fundsters, Geldwerk1, Innvestment, Seedmatch, Venturate, and Welcome Invest) reported completed transactions within the time window. For VC transactions, data was compiled from the “EY Start-up Barometer” data bank, which is maintained by Ernst & Young GmbH and includes information provided by Thomson One and additional transactions gathered from press releases and reports. We excluded all real estate projects and those ECF projects that did not reach the funding goal. For all remaining transactions, we examined Germany’s business register (unternehmensregister.de) to determine whether the companies that had obtained financing between 2013 and 2015 had survived by June 2016 or had ceased to exist due to bankruptcy.

The sample consists of 443 companies, which completed transactions between 2013 and 2015. Some companies completed multiple financing rounds. In these

Table 1 Descriptive statistics

	ECF	VC
Total number of companies funded	108	335
Average funding size (000 €)	363	15,096
Median funding size (000 €)	209	3000
Number of bankrupt companies	21	10
Failure rate	19.4%	3.0%
Average time from last funding to bankruptcy	506 days	533 days

Source: Authors' own study and calculations

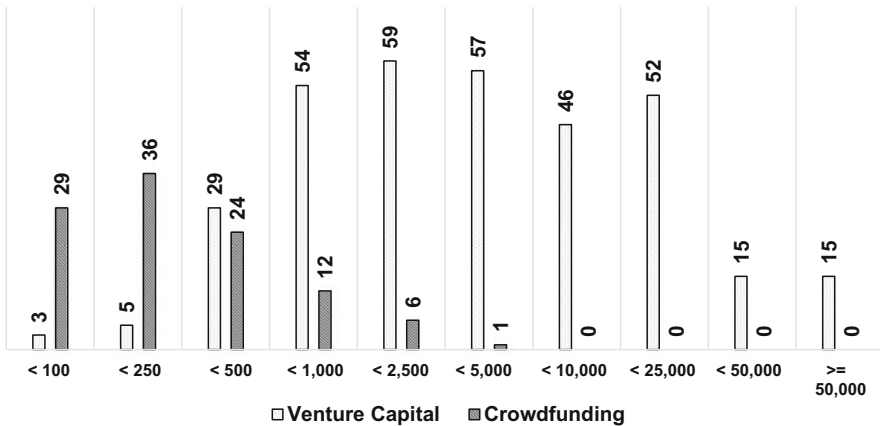


Fig. 1 Distribution of transaction sizes (000 €). Source: Authors' own study

cases, we consolidated them into a single transaction. The funding volume of the consolidated transaction was computed as the sum of the volumes of all financing rounds of this company and the date for the consolidated transaction was set as the date of the last transaction. Thus, we avoided double counting. This procedure resulted in 108 ECF deals and 335 VC deals in the time window (Table 1).

The average and median funding sizes are much smaller for ECF transactions compared to venture capital transactions, confirming that crowdfunding often takes place at the seed or start-up stage (Robb and Robinson 2014). However, there is a significant overlap in ECF and VC investing in the domain of transaction sizes between 250,000 € and 1,000,000 € (Fig. 1).

The failure rate of companies funded by ECF is more than six times as high as for companies funded by VC (Table 1). The difference in failure rates is not only statistically highly significant¹ but also economically. Assuming that an investor holds an equal-weighted portfolio of all companies for 3 years (the time window of

¹Considering the group of crowdfunded companies and the group of venture capital funded companies as two independent samples, the difference in the failure rate is significant at the 1% level with a *t*-value of 6.1.

our analysis) and targets an annual return of 8%, the surviving crowdfunded companies would have to outperform the VC funded companies by more than 700 bp annually (16.1 vs. 9.1%) to compensate for the higher rate of bankruptcies.

The failure rate of crowdfunded companies in Germany at 19.4% is almost twice as high as in the UK at 10.4% (Signori and Vismara 2016), even though the UK study covers a wider time window (5 vs. 3 years). This could be the result of a regulatory laissez-faire approach toward ECF in Germany before the stricter “Small Investor Protection Act” (Kleinanlegerschutzgesetz) was enacted in July 2015. The old regulatory regime made it easy to bypass securities law and offered hardly any investor protection in Germany (Hornuf and Schwienbacher 2017). In contrast, the regulatory environment in the UK is considered to strike a better balance between industry needs and investor protection, especially under new rules published by the Financial Conduct Authority in March 2014 (Steinhoff 2015).

To test the hypothesis that companies funded by ECF are of a lower quality and thus have a higher risk of bankruptcy, we introduce the following variables:

Dependent variable

Bankrupt: A dummy capturing the status of the company in June 2016 (bankrupt = 1, going concern = 0).

Independent variables

Crowdfunding: A dummy set to 1 if funding was obtained from the crowd, 0 if it was from venture capital.

Transaction size: Investments in small (seed or early stage) companies are riskier than investments in larger, more mature companies (Ahlers et al. 2015; Vismara 2016). We use transaction size as a proxy to capture the impact of the maturity of the funded company on the bankruptcy risk. A priori, it is not obvious whether absolute changes in transaction size or relative changes in transaction size should have a similar impact on the probability of bankruptcy, so we test the model both with the untransformed value of transaction size and the binary logarithm of transaction size.

Time since transaction: The probability of bankruptcy increases as the time between obtaining fresh funds and the observation whether a company is bankrupt grows. For the sample, the time between the transaction and the observation is between 6 months and 42 months (transactions between January 2013 and December 2015, observation in June 2016).

Industry: ECF and VC are characterized by a different mix of industries. Companies that target the consumer are more likely to choose ECF over VC as a form of financing, as the associated benefits of increasing public awareness is especially valuable for these companies (Collins and Pierrakis 2012). If failure rates are not homogeneous across industries, they could be instrumental in explaining differences in bankruptcy risk. We assigned every company to one of nine different industries and used them as a categorical predictor.

Table 2 Binary logistic regression results

Odds ratio (significance)	Model	
	1	2
Crowdfunding (dummy)	1.192 (77.3%)	0.484 (33.5%)
Transaction size	0.605** (2.8%)	
Transaction size (binary log)		0.559*** (0.0%)
Time since transaction (months)	1.121*** (0.0%)	1.120*** (0.0%)
<i>N</i>	443	443
Chi square	71.0***	72.4***
significance	0.0%	0.0%
<i>R</i> ² (Nagelkerke)	37.2%	37.9%

Source: Table compiled by the authors

*, **, *** denotes significance at the 10%, 5%, and 1% levels

Constant not reported for sake of brevity. *p*-values in parenthesis

3 Results

A binary logistic regression model is used to determine which variables significantly predict the probability of bankruptcy. Model 1 incorporates the untransformed transaction size as a predictor of bankruptcy; model 2 incorporates the binary logarithm of the transaction size as a predictor of bankruptcy. Using the untransformed transaction size implies a linear relationship, such that moving from a transaction size of 1 million euros to 2 million euros has the same impact on the odds of bankruptcy as moving from 100 million euros to 101 million euros. Testing the assumption of linearity with the Box-Tidwell procedure results in a significant interaction effect, signaling a nonlinear relationship. Using the binary logarithm implies that similar relative moves in transaction size result in a similar impact on the bankruptcy odds. For example, doubling the transaction size from 1 million to 2 million euros should have the same effect on the bankruptcy odds as a doubling from 100 million to 200 million euros. Results are reported in Table 2.

The choice of the funding source—crowdfunding or VC—is not significantly associated with the probability of bankruptcy. Also, the industry as a categorical predictor is not significant in explaining bankruptcy. Only transaction size and time elapsed since the transactions are significantly associated with the probability of bankruptcy.

Each month that passes increases the odds of bankruptcy by 12%, a highly significant result in both models. Companies obtaining larger funding volumes are less risky, as the odds ratio is significant and smaller than unity in both models. The

goodness of fit is slightly better in model 2, and the odds ratio of 0.559 implies that a doubling of transaction size reduces the odds of going bankrupt by 44.1%.

For future research, it seems promising to include further controls, which are beyond the scope of our data. Hornuf and Schmitt (2017) investigate the ability of crowdfunded firms to survive and find that the number of VC investors, successful follow-up crowdfunding campaigns and exits of the crowd all lower the risk of firm failure, while most other characteristics of the firm and the management are no significant predictors. Ahlers et al. (2015) find that the equity share retained by the entrepreneurs after the offering, human capital as measured by the share of board members holding an MBA degree and whether financial projections are provided with the offering all impacted the funding success.

4 Discussion

The higher failure rate of crowdfunded companies in our sample is the result of an indirect effect: companies on average seek this funding channel at an earlier stage than for a typical VC transaction, thus the smaller transaction sizes on average. The funding size also has a direct effect on the bankruptcy risk, as the risk of running out of liquidity decreases with increasing funding volume. Once we control for this, we find no more support for the hypothesis that adverse selection processes lead to a lower quality supply of companies in the ECF market.

Regardless of the reason for the higher failure rates, in equilibrium the higher risks in the German ECF market need to be compensated by higher investment returns. These will be difficult to achieve due to the prevailing contract design. ECF in Germany predominantly is structured as a “subordinated profit participating loan” (“Partiarisches Nachrangdarlehen”), a form of mezzanine capital. The features of a typical loan are as follows: the loan is open ended, and comes with no voting and very limited control rights. It pays fixed interest of 1% annually, accruing until termination, plus a share of the profit of the start-up proportional to the investment quota. The loan can be terminated unilaterally after 5–8 years by either the investor or the company. In the case of termination, the investor receives a payment according to the investment quota, valuing the company at a predefined EBIT or sales multiple. In the case of a sale of more than 50% of the start-up before termination of the loan (an “exit”), the investor receives the investment quota times the exit valuation. Both in the case of termination or exit, the investor receives at least the principal.

The option of the start-up company to terminate the loan unilaterally limits the upside to investors: effectively, the investor is long the equity and short a call option on the equity with a strike price predetermined by the fixed multiple. For randomly sampled companies that were campaigning on German ECF platforms in 2017, the EBIT multiple was mostly set at 6–6.5 and sporadically up to 8, which looks ungenerous even for modestly successful companies. For highly successful start-ups—the potential unicorns—the fixed valuation multiple will undervalue the equity

and the company should rationally exercise the call, i.e., terminate the loan, thus eliminating the return potential of a higher priced exit for investors. In this way, German investors are disadvantaged compared to UK or USA investors, who can enjoy the full reward of equity.²

5 Conclusion

We do not find any evidence that the choice of the funding source, crowd or VC, is directly associated with bankruptcy risk. Rather the choice of the funding source is associated with funding volume, and companies with smaller offerings are more likely to fail. This results in a comparably high bankruptcy risk of equity crowdfunded companies.

ECF in Germany has grown significantly since 2011, but most of the growth was driven by later stage growth financing, whereas financing for start-ups has stagnated around 15 million euros per year between 2013 and 2017 (Harms 2018). The future development of the start-up segment could be endangered if investors come to the conclusion that high risks are not compensated by adequate returns. In the worst case, an additional channel of financing for start-ups would dry up, endangering a process leading to innovative entrepreneurial business models (Lehner et al. 2015). Any regulatory reaction should consider the trade-off between the benefits of tighter investor protection and the costs of shutting out smaller firms from seed or early stage capital. These costs could be especially high in Germany, as alternative sources of capital are not as well developed as in the USA or the UK (Hornuf and Schwienbacher 2017).

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²In August 2016, Companisto introduced “lifetime participation” for some campaigns. This is a form of profit participating loan that continues to pay a share of the profit and of the exit proceeds, even if the loan is terminated by the company. This preserves the upside for the investor.

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Intermediate Body as an Entity Supervising Public Procurement Market in the Context of EU Funds



Jarosław Odachowski

Abstract When projects co-financed from the EU funds are implemented by their beneficiaries, the task of the bodies involved in management and supervision over the funds is to ensure an adequate project implementation—that is compliance with UE and domestic laws, relevant guidelines, programme documents, and applicable project financing agreement (or decision on project financing, or any other applicable document). In this context, public procurement procedures need to be considered. Since an adequate project implementation by beneficiaries generally involves a stricter financial regime applicable to spending funds, the supervision over contract awarding procedures becomes critical in importance. This task has been assigned to various bodies involved in the management and supervision over the EU funds and playing various roles within this system. One of them may be an intermediate body of an operational programme. The purpose of the present chapter is to examine the legal status of an intermediate body as an entity supervising public procurement market in the context of EU funds—taking into account the specific nature of the system of EU projects implementation. The following aspects will be discussed: general overview of the intermediate body, nature of intermediate body from the perspective of applicable provisions of EU and domestic legal regulations, supervisory tasks of intermediate body in the public procurement sector, and supervision over performance of the tasks assigned to intermediate bodies.

Keywords EU funds · EU projects · Public procurement · Supervision over public procurement market · Intermediate body

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1 Introduction

When projects co-financed from the EU funds are implemented by their beneficiaries (Błasiak-Nowak and Rajczewska 2013; Brackzowska-Boroch 2015; Miemiec 2012a; Poździk 2014; Tkaczyński et al. 2008; Wieczorek 2014), the task of the bodies involved in management and supervision over the funds is to ensure adequate project implementation—that is compliance with UE and domestic laws, relevant guidelines, programme documents and applicable project financing agreement (or decision on project financing, or any other applicable document).

In this context public procurement procedures need to be considered (Araujo 2016; Arrowsmith 2005; Bovis 1997; Drijber and Stergiou 2009; European Commission 1996; Fernández Martín 1996; Grandia 2018; Schmauch 2016; Trepte 2007; Weiss 1987, 1988, 1992, 1993). It is observed that ‘the operations financed [from EU funds] should respect the requirements of EU treaties as well as other acts issued to enable implementation thereof, such as community policies—in particular, concerning the criteria for awarding contracts under public procurement procedures. The area of public procurement requires thorough knowledge on the part of the legislator’ (Açores 2020, p. 5).

Since adequate project implementation by beneficiaries generally involves a tighter financial regime applicable to spending funds, the supervision over contract awarding procedures becomes an important issue. This task has been assigned to various bodies involved in the management and supervision over EU funds and playing various roles within this system. On the one hand, the powers in this respect are vested in the President of the Public Procurement Office (hereinafter: President of the PPO). It should be strongly emphasised that the above-mentioned entity does not have supervisory powers, but only auditing ones. However, since the audit findings can trigger off application of supervisory measures by other entities, the President of PPO can justifiably be considered as a part of the system of supervision over the public procurement market. An important role is also played by the authority managing a given operating programme—the managing authority—hereinafter: MA (see: e.g. Odachowski and Karwatowicz 2011)—having a wide range of supervisory powers.

On the other hand, the execution of the above-mentioned tasks may be vested in entities whose involvement in the process of implementing EU funds is not obligatory, or whose scope of activities exceeds considerably the sphere of supervision discussed here (or not encompass it at all). An example here is an intermediate body (hereinafter: IB) engaged in a given operational programme. Jaśkiewicz (2014) points out that there is a legal possibility to delegate some of tasks to other institutions by MA which is connected with the principles of partnership and co-management characteristic of EU cohesion policy. This is indicative of decentralisation of the implementation of operational programmes (Poździk 2016).

The purpose of the present paper is to examine the legal status of an intermediate body as an entity supervising public procurement market in the context of EU funds—taking into account the specific nature of the system of EU projects

implementation. The following aspects will be discussed: a general overview of the IB, nature of IB from the perspective of applicable provisions of EU and domestic legal regulations, supervisory tasks of IB in public procurement sector, and supervision over performance of the tasks assigned to IBs. Worth highlighting is the fact that these issues have not been thoroughly examined in legal literature and have been the subject matter of but a few academic papers.

2 Intermediate Body: Overview

When characterizing the legal status of an intermediate body, note first that its existence within operational programmes is optional. This means that there is a *quasi*-open catalogue of bodies/authorities involved in management and audit of EU fund spending. However, it is not left to the full discretion by the legislator which specifies the types of bodies/authorities permitted within the above-mentioned system. And it is not only their names, which are specified, but also the scope of powers (Yet, the catalogue cannot be perceived as exhaustive, since the legislator does not decide which specific institutions will be involved in a given operational programme—leaving this issue to be decided by individual MAs).

The above-mentioned observations lead to the conclusion that, in terms of supervision over public procurement, the catalogue of bodies/authorities permitted to operate within the system is *quasi*-open. It should be added that the scope of powers granted to these bodies/authorities also depends on the legislator's will. Hence, the law in force envisages the existence of various entities involved in supervision over public procurement procedures in the context of implementing projects co-financed from EU funds. The entities concerned may be classified according to various criteria. On the one hand—from the perspective of compulsoriness—there are entities which are necessary in the discussed system. For example, this can be authorities managing individual operational programmes (playing the key role in these programmes) or the President of PPO (playing the key role in public procurement sector). There are also optional entities, such as IBs, and implementing authority (hereinafter: IA).

From a different perspective, the entities may be divided into the ones whose *ratio legis* is to perform various tasks concerning public procurement (President of PPO), and those whose scope of powers exceeds the above-mentioned issues (It can be said that the above-mentioned category of tasks is to some extent auxiliary, supplementary) or may not include these tasks at all. The other group includes IBs and IAs.

The above observations highlight the fact that the legislator permits expansion of the list of entities involved in the supervision over public procurement procedures. Although the very possibility and the conditions for such expansion are defined, the remaining aspects are left to the discretion of bodies/authorities empowered to establish new entities and to define the detailed scope of their tasks. The cooperation between the legislator and other institutions should be emphasized here. Moreover,

the legislator intentionally opens this market to the entities for which the activities related to supervision over public procurement procedures are only auxiliary. Hence, it is rather unimaginable that the legislator would be unable to envisage a key authority of the public procurement system, namely the President of PPO, or could leave the decision on appointment thereof to bodies/authorities established specifically to implement EU funds. Therefore, the establishment of institutions for which activities concerning public procurement market are of supplementary nature does not materially affect the system where the key roles are played by the President of OPP or MA.

3 Definition of the Intermediate Body

Act on rules and principles for implementation of cohesion policy programmes financed under 2014–2020 financial perspective 2014. (2)(9) states that—hereinafter: implementation act (With respect to the rules for implementation of cohesion policy operational programmes under 2014–2020 financial perspective, this act replaces the act dated 6th December 2006 on development policy (Dz. U. of 2009, No. 84, item 712, as amended), which governs, in particular, the issues concerning implementation of cohesion policy funds under 2007–2013 financial perspective; at the same time, the act on conducting development policy (hereinafter: DP act) remains the comprehensive regulation which covers various aspects of development policy pertaining to all entities implementing this policy and to all sources of financing the same; it will also govern the issues related to operational programmes under 2007–2013 financial perspective until they are closed; see: The Sejm of the Republic of Poland (Sejm), 2014)—the term ‘intermediate body’ (see, in particular: Poździk 2016) means an entity entrusted—under an agreement or contract executed with a managing authority—with tasks to be performed as part of a national or regional operational programme.

This is a reference to Regulation (EU) No 1303/2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006 2013. (2)(18)—general regulation. In this context, an IB means any public or private body which acts under the responsibility of a managing or certifying authority, or which carries out duties on behalf of such an authority, in relation to beneficiaries implementing operations.

Also mentioned should be general regulation (123)(6): The Member State may designate one or more intermediate bodies to carry out certain tasks of the managing or the certifying authority under the responsibility of that authority. The relevant arrangements between the managing authority or certifying authority and the intermediate bodies shall be formally recorded in writing.

When commenting on the above-mentioned provision, several issues need to be taken into account. First of all, note that the tasks are delegated by the MA, which, indirectly, suggests that this is the entity empowered to establish IB. An indirect identification of an institution competent to appoint an IB is also found in general regulation (2)(18), which points to the issue of responsibility for actions of IP and carrying out duties on behalf of a given body. Then, there is general regulation (123) (6), which, on the one hand, points to the member state itself (which may suggest that MA, as the key authority within a given operational programme is vested with the relevant powers), but on the other hand, it states that the MA is responsible for carrying out of its duties. The second sentence focuses on relevant agreements, which makes it clear that an MA is vested with the powers concerned.

Secondly, an IB carries out the duties concerned as part of other tasks involved in the implementation of operational programmes, as proved by a fragment from the above-mentioned implementation act: an entity entrusted with (...) carrying out tasks under national or regional operational programme. What is more, tasks may be entrusted to an IB in both types of programmes. While both above-mentioned articles of EU regulation do not contain any provisions expressly referring to operational programmes. However, in both cases concerning IB's tasks, the EU legislator mentions the responsibility of an MA for carrying them out, or carrying them out on behalf of MA. This leads to the clear conclusion that an IB's tasks—being connected with MA's tasks and MA's responsibility—must be related to some specific operational programmes.

In the above-discussed provisions, the legislator neither specifies the tasks/duties to be delegated to an IB nor requires that these tasks must include supervisions over public procurement sector. *Prima facie*, it may be said that the delegated tasks must fall within the scope of tasks permitted to be carried out by an MA. It is hard to imagine a situation when an MA appoints an IB and entrusts the same with the performance of tasks which fall outside the scope of its competences. Yet, these issues can only be resolved through an analysis of other legal regulations (see below).

Moreover, the above-mentioned regulations do not specify reasons or criteria justifying the decision on establishing a given IB and defining its powers. Undoubtedly, MAs should take into account the need for effective and successful implementation of projects co-financed from the EU funds (see also: Jaśkiewicz 2014; Poździk 2016; Pes and Porretta 2015) highlighting the problem of successful and effective performance of tasks).

Also important is the need to ensure that a given process will be in compliance with all applicable binding regulations (see Introduction). Hence, the fact of delegating to an IB certain tasks related to public procurement should be also subject to the above-mentioned conditions.

Evidently, the above-mentioned provisions do not lead to the conclusion that the very appointment of an IB and the scope of tasks entrusted should directly stem from the need to supervise public procurement procedures. This, however, does not make this issue irrelevant. In the situation concerned, the need to ensure effective implementation of EU projects in compliance with applicable laws—as far as public

procurement issues are concerned—may lead to appointment of (yet) another body in charge of supervision over public procurement.

The tasks as well as mutual relations between both entities are detailed in the relevant agreement or contract, as applicable. Depending on the nature of an IB, it will be vested with relevant powers on the basis of an administrative agreement (in the case of public finance sector entities) or a contract (entities from outside the public finance sector) (see: Uzasadnienie; Jaśkiewicz 2014; Poździk 2016; Pes and Porretta (2015, p. 235) note that ‘IBs often form a part of larger public institutions or bodies’).

In this context, general regulation (123)(6) says that the relevant arrangements between (. . .) shall be formally recorded in writing (written form also mentioned in: Comunidad Autónoma de Andalucía). An MA’s duty here is to ensure that the tasks concerned will be carried out adequately. Execution of a contract (agreement) does not change the fact that a given MA retains control over performance of the tasks and the responsibility for implementation of the whole operational programme (general regulation (2)(18), (123)(6), implementation act (10)(7)).

It is also possible that the MA is involved in the implementation of a part of the operational programme—e.g. specific priority axis or specific section. So, the legislator decided to allow for certain degree of freedom in the context of national or regional operational programmes to choose from a range of possible options: from no IB option, through limiting IB’s activity to a specific part of the operational programme, to extensive use of IBs.

Another issue worth highlighting is the fact that more than one IB is permitted within a single operational programme (‘Member State may designate one or more intermediate bodies to carry out certain tasks of the managing or the certifying authority under the responsibility of that authority’—Comunidad Autónoma de Andalucía, p. 7; Portugal 2018, p. 4)—as expressly stated general regulation (123)(6).

4 Tasks of Intermediate Body as Regards Public Procurement

An important issue when determining the legal status of an IB in a given operational programme is to identify its tasks. First, implementation act (10)(1) should be highlighted: The Managing Authority may entrust to an intermediate body, under a contract or agreement, tasks related to the implementation of national or regional operational programme, subject to sec. 6, including:

1. Issuing decisions on repayment of funds granted for implementation of programmes, projects, or tasks, and decisions on charging interest referred to in art. 207 sec. 9 and art. 189 sec. 3b, as applicable, of the public finance act dated 27th August 2009

2. Issuing decisions to remit, in whole or in part, or to defer repayment deadline, or to agree to repayment in instalments of any amount due as a result of a decision on repayment of funds granted for implementation of programmes, projects, or tasks, and decisions on charging interest referred to in art. 207 sec. 9 and art. 189 sec. 3b, as applicable, of the public finance act dated 27th August 2009
3. Considering appeals against decisions referred to in item 1 and 2, issued by the implementing authority as the first instance.

Implementation act (10)(1)—up to item 1—is—in a sense—a repetition of the provisions contained in general regulation (123)(6) and the act (2)(9). But other regulations contained in this article are new and define, *inter alia*, the scope of powers of IBs. It is worth noting that the act does not expressly provide for any specific tasks concerning public procurement issues.

However, the analysed provisions cover various issues related to implementing projects co-financed from EU funds—including public procurement (There is no doubt that public procurement procedures/contracts are audited by IBs—see, in particular: Açores 2020; Resolución del Tribunal Administrativo Central de recursos contractuales 2015). It should be noted that the discussed powers are related to irregularities in project implementation—these are specifically dealt with in implementation act (24) (see also: general regulation (2)(36), (2)(38), (2)(72)(h), (122)(2), (143), (144), (145); detailed analysis of art. 24 can be found in: Odachowski 2016; see also: Karwatowicz and Odachowski 2009a).

Also important is the issue of financial corrections (see: provisions of general regulation mentioned in the preceding note; see also: Karwatowicz and Odachowski 2009b; Miemiec 2012b; Odachowski 2010; Odachowski and Karwatowicz 2009).

When irregularities in project implementation are discovered—after the beneficiary has already received funds (or any part thereof) under the project (if non-compliance with law is related to a given disbursement of funds)—the funds must be repaid (It is stated that an ‘IB may be aware of irregularities as regards expenditures co-financed via different channels’—e.g. *ex ante* review: before expenditure certification, or *ex post* review: Comunidad Autónoma de Andalucía, p. 138, 150). Pursuant to the already mentioned public finance act (207), the obligation to repay the funds may result from decisions mentioned in implementation act (10)(1) (1) (Also the provisions of implementation act (9)(2)(8) and (9)(2)(9) specifying the tasks of MA should be mentioned here). In fact, instances of non-compliance with law are most common in public procurement area.

The discussed IB’s power could be said to play a consequent role in public procurement supervision. Unlike *ex ante* control which precedes the actions of beneficiaries aimed at awarding a contract under public procurement procedure and at preventing any non-compliance with law, issuing a decision envisaged in implementation act (10)(1)(1) is a consequence and its purpose is to remedy the effects of irregularities which already have occurred.

Such decisions may be issued only when the relevant MA vested such power in a given IB and only with respect to the part of the programme (e.g. specific activity/task) under which the IB has been authorised to act.

The other power envisaged in (10)(1) also pertains to the above-mentioned problem of irregularities and beneficiaries' obligation to repay the funds obtained. So, in the present case, the discussion of the first of the above-mentioned powers is applicable.

Worth highlighting is the fact that the two powers—although they both relate to irregularities, including those involved in public procurement—cannot be discussed jointly. What is meant here is that MA has the right to delegate to a given IB only one of the above-mentioned tasks in the area of public procurement (Although obviously it can delegate both).

The third power pertains to dealing with appeals against decisions of the IA (decisions referred to in (10)(1)(1) and (10)(1)(2)). Also, in this case, the power is connected with irregularities in project implementation, including public procurement projects. Yet, unlike in the two earlier cases, an IB plays the role of the second instance authority here. It should be highlighted that this power applies only in the case of operational programmes where the IA has been appointed and vested with powers to issue such decisions.

Worth noticing is the legislator's decision to make the catalogue of IB tasks included in implementation act (10) an open one (which is manifested by the use of the phrase: including). Other tasks should be sought, taking into account that fact that IA may delegate to IB only the powers it has been originally vested with. Hence, implementation act (9)(2) should be mentioned, containing an (open) catalogue of IA's tasks.

In the context of tasks related to supervision over public procurement procedures, worth mentioning is—firstly—(9)(2)(3): Signing project co-financing contracts with beneficiaries or making decisions on project co-financing. This provision cannot be considered only as a 'technical' action consisting in giving mutual declarations of will (or issuing a decision, as applicable), but also as a way to ensure, either by IA or IB, that the beneficiaries will be obliged under the provisions of the above-mentioned agreement (or decision) to comply with all regulations applicable to public procurement procedures.

The key power as regards IB's tasks is the power to control how beneficiaries comply with their public procurement obligations ((9)(2)(7): controlling the implementation of the operational programme, including the review of adequacy of expenditures incurred by the beneficiaries—in the case of national or regional operational programme; see also, in particular: general regulation (125)(4)(a)). In implementation act (22–25) (more in: Jaśkiewicz 2014; Poździk 2016; see also: Comisión Europea 2015: *Fondos Estructurales y de Inversión Europeos. Orientaciones para los Estados miembros. Verificaciones de la gestión*) specify in detail, inter alia, the issue of types of audits (including: operational programme implementation audit), audit scope (including: review of expenditures in order to check the adequacy and eligibility of the expenditures incurred), forms of auditing beneficiaries (including: project audit on site), audit procedures applicable to beneficiaries (e.g. possibility to conduct inspection) as well as activities related to preparing post-audit report and raising objections thereto.

Worth mentioning is the fragment of substantiation issued by Sejm (2014) saying that ‘optional control of documents as regards public procurement procedures (...) and extending public aid, provided for in [art. 22 of the implementation act] sec. 4 is not a new solution, however, it is the first time it is accounted for in an act of parliament. In the previous programming period, such audits were conducted only in the programmes whose managing authority provided for such a possibility’.

It should be noted that the discussed IB’s power is—for IB—perhaps the most important power in the context of public procurement supervision. It can be characterized as: fundamental (as it is the main source of information on possible law infringements), non-invasive (as it does not involve any authoritative interference with the beneficiaries’ operations), initial (since—from its perspective—supervisory activities are of consequent nature), and typical (because, unlike audits, authoritative actions are of extraordinary nature here).

Finally, worth highlighting is also the problem of guidelines in operational programmes (act (2)(32): guidelines—legal instrument laying down uniform requirements and procedures for implementing structural funds and Cohesion Fund, addressed to bodies/authorities involved in implementation of operational programmes and applied by the same under relevant agreement, territorial contract, or contract and by beneficiaries under co-financing agreements or project co-financing decision)—they can pertain to public procurement procedures (e.g. Marshal Office of the Pomeranian Voivodeship 2014).

The implementation act (5) points the existence of guidelines (more in: Jaśkiewicz 2014; Poździk 2016)—until 1.9.2017 referred to as horizontal—treated as a tool for coordinating implementation of operational programmes. Their purpose is to ensure uniform implementation mechanisms, functioning in all operational programmes, in compliance with EU laws and European Commission requirements (e.g. in the form of indicative guidelines). Act (5) clearly states that the guidelines are addressed exclusively to bodies/authorities involved in implementation of operational programmes. According to this provision, guidelines cannot themselves constitute a legal basis for the rights and obligations of applicants and beneficiaries (see: Sejm 2014).

This article specifically states that in the process of gathering opinions on the above-mentioned guidelines (formally issued by the minister competent in regional development matters), such opinion may be given by an MA (implementation act (5) (3)(1)). It must be taken into account that [horizontal] guidelines may apply to all or selected operational programmes and are addressed to institutions involved in their implementation (act (5)(2)). Although the act does not mention IBs, it seems obvious that they are not given any opportunity to raise comments and give opinions. The natural conclusion is that the legislator—having granted MAs the right to give opinions—gives them some freedom in deciding on engaging in the process other entities involved in the operational programme they are in charge of. Any IB comments—like any other comment expressed in the opinion-gathering process—are not formally binding. It cannot be said that IBs have any special (binding for the minister) power in this respect. It would have to be expressly provided for in the legislation. What is more, from the perspective of the authority issuing guidelines,

opinions given by individual IBs will be considered collectively as opinions (comments) of the relevant MA.

IB's right to make comments in opinion-gathering procedure is an activity related to building a legal framework for operational programmes and not to direct relationship with a beneficiary (with is the case with audit activities). Nonetheless, the possibility to influence the final shape of analysed guidelines indirectly affects the scope of rights and obligations of beneficiaries [obliging beneficiaries to comply with certain guidelines becomes one of the purposes of co-financing agreements (decisions)], thus playing an important role in ensuring adequate project implementation—also with respect to public procurement. The discussed IB's power should be also taken into consideration in the context of supervision over public procurement market.

Before 1.9.2017, apart from horizontal guidelines (presently: guidelines), there were also programme guidelines (act (7)—repealed). Under the said implementation act (7)(2)(2), an IB was expressly vested with a power to participate in opinion-gathering procedure concerning guidelines. Applicable in this respect should be (have been) deliberations on (horizontal) guidelines. The legislator provided for this specific power of IP—unlike in act (5)—because programme guidelines used to be issued by individual MAs. While in the case of (horizontal) guidelines, due to their, so to speak, general—in geographic terms—character (by principle, their applicability is not limited to a single programme), and the fact they are issued by a central body, the legislator ignored the less important—in the context of the whole programming period—entity.

5 Supervision Over Carrying Out the Tasks Entrusted to IBs

The implementation act—contrary to the DP act—contains important solutions concerning supervision over functioning of IBs—also as regards carrying out of the above-mentioned tasks related to public procurement procedures. This means that there is a system where an institution supervising public procurement market is itself subject to supervision.

Pursuant to implementation act (11)(1): When an intermediate body or implementing authority fails to adequately carry out the tasks entrusted pursuant to art. 10 sec. 1 or 2, fails to comply with applicable laws, or acts in breach of operational programme implementation system, or in the case of circumstances envisaged in art. 144 sec. 1 of the general regulation, hereinafter referred to as 'breaches', the entrusting authority or the managing authority may:

1. Issue a recommendation to the body/authority entrusted with the tasks, specifying the breaches to be remedied, and the time limit for their remedying

2. Impose an obligation on the body/authority entrusted with the tasks to undertake the specific corrective measures and specify the time limit for their implementation
3. Suspend or withdraw, in whole or in part, the funds extended under technical assistance to the body/authority which has failed to adequately carry out its obligations, did not remedy the breaches within the prescribed time limit or did not implement the corrective measures
4. Apply to the minister competent in regional development matter and performing the member state tasks to suspend the designation for the body/authority concerned.

And implementation act (11)(4) further says: Financial responsibility of the intermediate body and implementing authority is specified in the agreement or contract, referred to in art. 10 sec. 1 or 2.

In the context of an exhaustive catalogue, act (11)(1) presents various possible behaviours of IBs, which the legislator considers negative and requiring adequate reaction from supervising entities (the so-called breaches). The first pertains to inadequate implementation of tasks entrusted to an IB pursuant to act (10)(1). The legislator does not give any examples or the exhaustive catalogue of possible breaches. The most important is the content of the contract or agreement executed with a given IB. It is there that the MA defines the scope of tasks to be carried out by the IB and only in this context adequacy or inadequacy of IB's performance can be assessed. It is possible to include in such contract or agreement examples (or even exhaustive catalogue) or such breaches.

A breach can be either an act or omission. Although instances of omission or negligence are rather obvious (They refer to instances of failure to fulfil an obligation concerning public procurement procedures), there is a problem with the acts which may be consequent upon inadequate interpretations of public procurement laws and regulations.

In this latter case, the whole legal framework applicable to a given IB is meant. It should be said that inadequate performance of tasks by a given IB (as defined above) may be also considered a breach of law. The implementation act forms a model where an optional entity, such as an IB, is obligated to carry out its tasks in proper way.

The term law should be understood broadly here. It encompasses not only mandatory provisions of EU law (regulations, directives) or national laws (e.g. implementation act), but also other legal regulations—the so-called 'soft law' (e.g. concerning public procurement issues) or specific regulations typical of EU funds, such as programme documents (e.g. detailed descriptions of a priority axis of an operational programme—implementation act (2)(25)).

Another type of breach is an action at variance with operational programme implementation system. The nature of the said system is accounted for in implementation act (6)(1) and (6)(2) (see also: general regulation (72 and next); more in: Jaśkiewicz 2014; Poździk 2016). The issues specifically mentioned by the legislator include: content of the system (requirements and procedures), obligated entities

(bodies/authorities involved in operational programme implementation), scope of the system (e.g. managing, monitoring, reporting) and its legal basis (e.g. mandatory provisions of law, guidelines).

The last type of breaches is connected with circumstances referred to in general regulation (144)(1). In the case concerned, the European Commission is authorised to make financial adjustments based on individual irregularities identified.

It should be noted that individual categories of negative behaviours of IBs partly overlap (e.g. a breach of legal provisions vs. acting at variance with operational programme implementation system). Nonetheless, this should not cause any practical problems, as it needs to be analysed from the perspective requiring a broad understanding of all breaches. What is more: The sanctions generally do not depend on the type of breach. Therefore, the category of a specific breach committed by an IB is of minor importance.

So, the legislator provides a catalogue (which should be perceived as an exhaustive one) of permitted supervisory measures when a breach mentioned above is discovered. It can be said to have introduced a gradation of these measures. The first two are, so to speak, non-invasive—persuasive in nature—see: Jaśkiewicz (2014)—and involve only issuing recommendations or requesting the IB concerned to remedy the situation.

Other supervisory measures: sanctions—see: Jaśkiewicz (2014)—are of financial nature and consists in depriving the IB concerned of the funds necessary to perform its tasks. It should be noted that this measure may be treated used autonomously (cf.: Jaśkiewicz 2014) or in combination with other (above-mentioned) measures—the act clearly says that the measure can be used also when the breaches have been remedied (due to application of the first two measures).

The last—most severe measure (also being a sanction: Jaśkiewicz 2014)—is the suspension of designation of the IB [more on the issue of designation—see e.g.: Comisión Europea 2014: *Fondos Estructurales y de Inversión Europeos. Orientaciones para los Estados miembros sobre el procedimiento de designación*; Comisión Europea: *Fondos Estructurales y de Inversión Europeos. Orientaciones para los Estados miembros. Desarrollo sostenible integrado en el medio urbano. Reglamento del FEDER (artículo 7)*]. Pursuant to implementation act (2)(3), a designation means confirmation by the minister competent in regional development matter and performing the member state tasks that a managing authority, intermediate body and implementing authority or national auditor or joint secretariat satisfy the requirements ensuring adequate implementation of the operational programme.

The requirements ensuring adequate implementation of the operational programme include the designation criteria laid down in Appendix XIII to the general regulation and the execution of relevant contracts or agreements (between institutions) legitimizing the presence of relevant bodies/authorities within the operational programme implementation system. National designation system envisaged in general regulation (124) is implemented in order to strengthen member states obligations to adequately manage the funds. Designation institution shall guarantee adequate functioning of the operational programme implementation system, both as

regards institutional and procedural issues (see: Sejm 2014 and implementation act (15)(3)).

6 Conclusions

Supervision over public procurement market is one of the key issues in the implementation of projects co-financed from the EU funds. One of the duties of authorities/bodies involved in managing and controlling EU funds is to make sure that the whole public procurement process is conducted in compliance with broadly understood law (including guidelines or programme documents). The legislator provides for (or permits) the existence of various entities which can be involved in exercising the supervision. Apart from authorities/bodies which are obligatory (President of the PPO or MA), it also assumes the existence of other authorities/bodies which may carry out the above-mentioned activities. One of them is IB.

Its nature is manifested not only in its optional character, but also in the fact that it is generally established not only to carry out tasks related to public procurement issues. It can be said that apart from the very establishment of IB and entrusting it with certain tasks, also crucial is the need to ensure that all activities of the entities involved (in various ways) in the process of implementation of individual operational programmes (including IB) are carried out in compliance with law. Also important is effective and successful implementation of the projects under the said programmes. Therefore, expansion of the list of institutions involved in public procurement market supervision should be analysed from this perspective.

When analysing IBs' involvement in the above-mentioned supervision one should always keep in mind that it is MA who bears the whole responsibility for adequate implementation of the operational programme. Leaving to the MA the right to appoint these bodies and delegate tasks (also concerning public procurement) to them is consequent upon a special role an MA enjoys in the structure of implementing EU funds. It should be emphasised that in an operational programme MAs have the knowledge and expertise in creating adequate management and control system (here: in subjective terms), and bear the responsibility for the programme. Moreover, IBs have been created with the intention to carry out various activities connected with EU funds—not only those concerning public procurement procedures. This is yet another argument justifying the fact that they are appointed by MA (and not, e.g. by the President of the PPO).

Acknowledgments This article is a product of the SONATA BIS research project financed by the National Science Centre, on the basis of decision no. DEC-2014/14/E/HS5/00845, contract no. UMO-2014/14/E/HS5/00845.

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Construction Companies in Russia: Does Size Matter?



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Abstract Construction industry includes companies of different sizes—large, medium, small, and microenterprises. The diversity of companies and their interaction make it possible to ensure the proper scale of the construction industry in combination with the flexibility, variety and quick response to new trends, demands, and challenges. The size of the company determines its ability to attract financial resources, available forms, and methods of forming its equity and debt, thereby determining the capital structure of the company. The objective of the current research is to identify opportunities and threats to different size construction companies' development. The object under consideration is the capital structure of Russian construction companies—their sources of financing and corresponding financial and economic indicators. The study uses financial and economic analysis and statistical methods. The conclusions made on the results of research may be useful to the heads of particular companies, to financial and credit organizations and to the governing bodies of the construction industry.

Keywords Construction companies · Size of the company · Capital structure · Sources of financing · Opportunities and threats

1 Introduction

Construction is a branch of material production, which provides the commissioning of new industrial and nonproductive facilities, as well as their expansion, reconstruction, and repair. The role of construction in the development of all other sectors of the economy is huge. It is manifested in creating conditions for dynamic development and economic growth. The significance of the construction industry is further strengthened by the fact that it creates the objects, which form the image of settlements and may be exploited for decades and even centuries. Thus, the

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companies of the construction industry and the decisions made by them, in particular, decisions on the capital structure, significantly impact human life and activity and determine the prospects of the national economy.

In Russia, the construction industry provides 6–7% of GDP. The analysts assess the current state of the construction industry in Russia as the difficult, linking this estimation with a lack of investment, slow pace of new housing commissioning and reduction of budget financing. In 2017, the main drivers of the construction were preparations for the World Cup and Universiade-2019, the agricultural sector development, renovation program for housing and communal services, investment in regions and housing construction. In 2017, the volume of construction amounted to 7.55 trillion rubles, which is 1.4% less than in 2016 in comparable (conditionally constant) prices. Compared to 2015, the fall equals to 9.4%.

In 2017, the volume of housing construction in physical terms decreased by 5.6% compared to the previous year, in monetary terms—by 2.1%. Negative dynamics took place both in mass and in individual construction. The volume of commercial real estate commissioning decreased by 18%, and the volume of industrial real estate commissioning—by 6.7%, decrease occurred in all sub-segments of real estate, except for some hypermarkets and warehouses. Due to budget cuts, the social housing construction declined. At the same time, the resources were partly redirected to the segment of industrial buildings, which may be positive for the future economic growth.

Construction industry consists of companies of different sizes—large, medium, small, and microenterprises. Such diversity allows ensuring the proper scale of construction industry in combination with the flexibility, variety, and quick response to new trends, demands, and challenges. The size determines company's ability to attract financial resources, available forms, and methods of forming equity and debt, thereby predetermining the capital structure of the company.

The aim of the chapter is to identify opportunities and threats to the development of Russian construction companies of different sizes originated from the structure of their capital.

The chapter includes description of theoretical basics for capital structure analysis and brief review of the recent research on this issue, specification of the data and methods used for analysis, results obtained by calculation and comparison, conclusions made on the base of quantitative estimates. Analysis allowed findings related to the changes in the capital structure of construction companies occurring within recession period, to the differences in the financing sources proportions of different sized companies and to the opportunities and threats facing different groups of companies. The results of the study may be useful for the owners and managers of certain construction companies, for the heads of construction industry, and for the managers of credit institutions.

2 Theoretical Basics

Theoretical models of capital structure have a wide range of applications and form the basis for company's development decisions (Tudose 2012). Myers (1984) characterized the problem of capital formation as a puzzle and divided the capital structure theoretical concepts into two groups: static and dynamic. The first attempt to investigate the capital structure from the standpoint of corporative financial management was the work of Modigliani and Miller (1958). Due to the paradoxical conclusion that the company's value does not depend on the capital structure, obtained within a number of strong restrictive assumptions, the problem of capital structure has attracted the attention of researchers for many years, and the practitioners got the opportunity to understand the importance and the power of the various financial sources combination.

According to the trade-off concept (static compromise) representing a result of attempts to weaken the rigid and unrealistic limitations of the Modigliani–Miller's theory, the decision on the capital structure should be formed as a compromise between the benefits of a tax shield arising from the use of debt capital and the potential costs of financial difficulties or indirect costs of bankruptcy (Fama and French 2002). The theory of compromise cannot explain why similar companies often have a different capital structure.

According to the pecking order concept (precedency of financing sources), there is an information asymmetry between external investors and managers of the company, which leads to the fact that the managers prefer internal sources of financing (equity), to the external ones (Myers and Majluf 1984). The expansion of the equity, explicitly or potentially changing the composition of the participants (for example, the additional issue of shares) is considered as the use of an external source. The pecking order theory is rather an attempt to describe the actual behavior of financial managers than the scientific substantiation for the reasonable choice of capital structure.

Market timing theory (adaptation to the stock market) assumes that equity changes, undertaken by the company, are predetermined by how the company (its shares) is evaluated in the financial market (Baker and Wurgler 2002). In accordance with this theory, the capital structure results from the situation in the stock market. Managers increase the number of shares when their market value is high and reduce the number if the shares are underestimated. They act, therefore, with a significant delay, since the issue or the shares buying up from the market require some time. This creates certain information effects provoking further price changes. The market timing theory is not suitable for an undeveloped financial market, as well as for companies not traded in the stock market.

In accordance with the agency theory, the capital structure is determined by the relations between owners, creditors, and managers, as well as by the costs of managerial decision implementation.

In general, we can agree with Abeywardhana's (2017, p. 137) conclusion that "there is no single theory on capital structure which incorporates all important

Table 1 Factors of capital structure

Theoretical concept	Factors
Trade-off theory	Level of profit taxation Level of bankruptcy costs
Pecking order theory	Return on assets Financial flexibility Fixed assets ratio Activities scope Current liquidity Income variability
Market timing theory	Shares overestimation (underestimation)
Agency theory	Owners' control extent Creditors' control extent

Source: Compiled by the author

factors and predictions of this theories suggest that capital structure puzzle still remains.” Since no one of the theories mentioned above is unambiguously confirmed by empirical research, all factors used within their framework (Table 1) can be considered as the capital structure determinants. These factors are dependent on the company’s activity, its decisions, and financial strategy, and, therefore, they are the subject of the company’s influence and may be changed. Sharikova (2011) points out the significant influence which the external factors have on the company’s capital structure. As external factors that do not depend on the company’s decisions but require adaptation, the commodity market stability, the financial market conjuncture and interest rates, the sustainability of the national economy, fluctuations in currency rates, and inflation worth to be mentioned.

Hrdý and Marek (2012) mention the belonging to a certain industry and the size among the factors determining company’s capital structure and highlight the role of the so-called branch standards in the capital structure management. Hall et al. (2000) found that for SMEs of the UK long-term debt is related positively to asset structure and company’s size. Most researchers considering the problem of capital structure link the use of debt sources with the financial leverage effect. This effect manifests itself in the fact that due to rational use of debt capital, company can obtain a higher profitability of its equity despite interest payments (Brigham 2010).

There are a number of studies devoted to the capital structure of construction companies in different countries. Feidakis and Rovolis (2007) identified the factors providing convergence of the capital structure of the large listed construction companies in the European Union despite the difference in the characteristics of the countries and corporative financial decisions. However, Růčková and Heryán (2015) point out that the capital structure management indicators and methods developed in the USA may require adaptation to the particular situation of the other country. Sometimes the results of the research are contradictory. This confirms the complexity of the capital structure problem in the companies of construction industry and the importance of the research methods adequacy. For instance, Jayiddin et al. (2017), analyzing the relations of capital structure and performance

indicators of construction companies in Malaysia, came to conclusions partly opposite to the results obtained by Salim and Yadav (2012) few years earlier. Based on this contradiction, Jayiddin et al. (2017) warn about the due prudence in making decisions on capital structure and express confidence that sector specificity and economic growth should be taken into account obligatorily.

Ramezanalivaloujerdi et al. (2015) found no relation between the structure of tangible assets and the capital structure of construction companies. Mahmood and Zakaria (2007) identified that the capital structure in the construction sector is negatively correlated with the net profit margin and price-to-earnings ratio. In the studies devoted to the capital structure in construction, the specifics of the industry, the economic situation in particular countries and companies of different sizes are investigated. However, it can be noted that the internal and external factors affecting the capital structure of Russian construction companies are not thoroughly examined; and the number of empirical studies on the capital structure of the Russian construction companies is small. Polhovskaya and Romenskiy (2012) stated that studying the financing of construction companies, it is necessary to take into account the following: (1) construction projects and ready-made real estate commissioning require large amounts of financial resources; (2) since the phases of the construction projects usually have a significant duration, successful implementation of the construction project requires an even and reasonable distribution of financial resources within long period and therefore long-term sources of financing are usually needed.

Cyclicalities is an inherent feature of the construction industry. Construction companies are sensitive to market changes and industry's overall risk, so they should strive to minimize their financing risk, that is, to reduce the ratio of debt financing. According to Cahill (2010), a high level of debt (more than 50% in the total capital) can lead to negative consequences for the company's activity. Shevchenko (2015) formulated provisions that should be taken into account in capital structure management and which primarily concern large construction companies: (a) the growth of the outgoing cash flow due to debt serving payments limits the company's freedom to manage funds in time and directions; (b) an excessive risk growing as the debt increases, leads to a decrease in the investment attractiveness of the company's shares and their value, and, therefore, opportunities to increase equity by issuing shares decrease; (c) agent conflict of shareholders and creditors sharpens as the company is forced to accept the terms of large creditors at the expense of the owners' interests; (d) sensitivity to interest rates and to the cost of debt capital grows; (e) profit decreases due to increase of interest payments leads to reduction of the shareholders' income; (f) credit rating deterioration leads to reputational risk growth, increasing the price of capital raising; and (g) increased costs cause financial difficulties and increase the probability of bankruptcy.

3 Data and Methodology

The object of the study is the Russian construction companies of the sub-sector “Construction of residential and non-residential buildings” registered in the Lenin-grad region. The source of quantitative data is the SPARK database (Interfax). For the analysis, data for 2016 and 2017 are used. The sample includes companies classified as microenterprises, small, medium, and large companies. The group “other” consists of companies whose size is not specified in the database.

It should be noted that in Russia the parameters of micro-, small-, and medium-sized companies are established by legislation (Table 2). But there is no unit understanding of a large company in Russian legislation and as a consequence, there are no uniform definition of the legal status, procedure for classifying a company as belonging to this category, and integrated regulation of the activity of such companies. The issue of classifying the company arises usually in the context of preferences established by the legislation for small- and/or medium-sized companies but not available for the companies not belonging to these groups (Bachin 2014). In this study, large companies are the companies with revenues of more than 2 billion rubles having the appropriate requisite in the database.

The general description of the sample is given in Table 3. For the analysis, companies under bankruptcy, liquidation, and reorganization were excluded from the sample. Further, the companies with zero or negative equity and the companies for which the data on current income tax are absent were excluded from the list of active companies. The absence of income tax data may take place either due to the company’s tax status if simplified taxation system is used or to the data error. The final number of companies under consideration within the study is shown in Table 3. The number of unprofitable enterprises is shown for reference; these companies were not excluded from the analysis. It should be mentioned that the subsamples of 2016 and 2017 differ significantly in the number and composition of the companies. There is reason to suppose that the lack of information on many companies for the year 2017 results from their thorough financial difficulties. The group of the “other” companies was excluded from the detailed analysis due to its unrepresentativeness.

Aggregate metrics for the groups of companies and the variations of indicators in particular companies were used. For the groups of companies under consideration, the following indicators were calculated: proportions of equity, long- and short-term debt in the total capital, debt-to-equity ratio (financial leverage, D/E), return on assets (ROA), return on equity (ROE), actual rate of income taxation as the ratio of the paid taxes to the earnings before taxes and the tax shield (TS), the average

Table 2 Parameters of micro-, small-, and medium-sized companies

Size of company	Maximum number of employees	Maximum revenue
Micro	15	120 million rubles
Small	100	800 million rubles
Medium	250	2 billion rubles

Source: Table compiled by the author

Table 3 Number of companies in the sample

Group of companies	Total sample	Under bankruptcy	Under liquidation	Under reorganization	Active	Zero or negative equity	Positive equity	Income tax not calculated	Under consideration	Unprofitable
2016										
Large	12	0	0	0	12	3	9	0	9	0
Medium	13	0	1	1	11	0	11	0	11	1
Small	48	0	2	0	46	0	46	5	41	3
Micro	496	7	19	2	468	86	382	80	302	31
Other	236	6	21	2	207	77	130	126	4	1
Total	805	13	43	5	744	166	578	211	367	36
2017										
Large	10	0	0	0	10	3	7	1	6	0
Medium	12	0	0	1	11	0	11	0	11	2
Small	13	0	1	0	12	1	11	1	10	2
Micro	27	0	5	0	22	2	20	13	7	2
Other	237	0	5	0	232	0	232	232	0	0
Total	299	0	11	1	287	6	281	247	34	6

Source: Compiled by the author

interest rate on debt (AIR) as the ratio of actual interest payments to the total debt, the differential of the financial leverage (the difference between ROA and AIR, DFL). It is necessary to highlight that TS and AIR may differ from corresponding actual values because they were estimated indirectly. The financial leverage effect was estimated on the base of two indicators:

1. Observable effect (OEFL) calculated as the difference between the return on equity and the return on assets:

$$OEFL = ROE - ROA,$$

2. Calculated effect (CEFL) determined by the formula:

$$CEFL = TS \times (ROA - AIR) \times D/E.$$

4 Results

Capital structure and financial leverage for companies belonging to different size groups are shown in Table 4. The financial leverage of the large companies group is less than that of the other groups. For large companies, the main source of financing

Table 4 Capital structure and financial leverage

Group of companies	Year	Proportion in capital (%)			Financial leverage		
		Equity	Long-term debt	Short-term debt	Aggregate	Minimum	Maximum
Large	2016	17.72	17.42	64.86	4.64	1.34	7288.12
	2016 ^a	19.39	16.03	64.58	4.16	1.34	16.96
	2017	24.95	5.29	69.76	3.01	0.92	78.55
Medium	2016	4.62	50.92	44.46	20.63	0.59	131.79
	2016 ^a	7.95	33.83	58.22	11.58	1.52	131.79
	2017	14.83	43.48	41.69	5.74	0.87	17.05
Small	2016	12.49	41.40	46.11	7.01	0.00	5065.58
	2016 ^a	11.49	62.84	25.67	7.70	3.01	52.59
	2017	18.20	52.13	29.67	4.49	0.72	168.71
Micro	2016	6.50	24.86	68.61	14.37	0.00	4301.90
	2016 ^a	2.19	22.80	75.02	44.71	42.70	57.55
	2017	3.54	57.73	38.73	27.26	0.03	120.63
Other	2016	1.27	78.02	20.71	77.74	0.04	181.80
	2017	–	–	–	–	–	–

Source: Compiled by the author

^aCompanies represented in the sample of 2017

is short-term debt. The proportion of long-term debt is inferior to the proportion of equity. These manifestations intensified in 2017 compared to 2016: the proportion of short-term debt has grown; the share of equity increased significantly, and the proportion of long-term debt decreased more than three times. The group of large companies has relatively small aggregate financial leverage. It should be noted that (1) companies which in 2016 had super-high leverage did not enter the sample of 2017. One of the possible explanations of this fact is the difficult financial situation of these companies; (2) in 2016 those companies which entered both the samples had smaller scope of variation and smaller aggregate value of financial leverage than the group as a whole.

The proportion of long-term debt in the capital of the medium-sized companies group is slightly bigger than that of short term. But it worth to mention that in the group of medium-sized companies which operated in 2016 and stayed in the sample of 2017 the proportion of short-term debt is notably higher. The proportion of equity in 2017 increased more than three times due to which the financial leverage has significantly decreased, but in general the share of equity is less than that of large companies. The range of the financial leverage variation had also significantly decreased.

In 2016, small companies were financed mainly from short-term debt, but in 2017 the long-term debt became the main source of financing. The proportion of short-term debt became significantly lower, and the proportion of equity increased. The financial leverage for this group is lower than that for medium-sized companies, but the range of its variation was and remains much wider.

Microenterprises have the biggest financial leverage. However, the structure of financing of this group changed. Instead of the prevailing short-term debt, which constituted almost 70% in 2016, in 2017 the long-term debt prevails. The share of equity became lower. As in all other groups, the range of financial leverage variation has decreased, however, as in the group of small enterprises, it remains very large.

The structure of equity is shown in Table 5. It may be seen that for all groups of companies, retained earnings are the main element of equity. The exception is a group of small enterprises, where the additional capital that reflects the noncurrent

Table 5 Structure of equity, %

Group of companies	Year	Authorized capital	Additional capital	Reserve capital	Retained earnings (uncovered loss)
Large	2016	13.46	0.00	0.01	86.54
	2017	12.71	4.06	0.01	83.22
Medium	2016	11.45	2.15	0.06	85.92
	2017	9.50	1.43	0.04	88.73
Small	2016	0.72	0.24	0.29	87.83
	2017	1.72	47.67	9.03	41.58
Micro	2016	0.81	0.53	0.07	39.92
	2017	31.29	0.00	0.00	68.71

Source: Compiled by the author

Table 6 Structure of the long-term debt, %

Group of companies	Year	Loans (long term)	Deferred tax liabilities	Other long-term debt
Large	2016	68.29	7.13	24.58
	2017	44.55	55.45	0.00
Medium	2016	8.62	1.03	90.33
	2017	60.97	2.65	36.39
Small	2016	3.00	0.02	96.98
	2017	5.22	0.65	94.13
Micro	2016	55.10	0.05	44.85
	2017	99.91	0.06	0.04

Source: Compiled by the author

assets increase in value as a result of revaluation, constituted the main proportion in 2017. In 2017, the group of microenterprises has a significantly larger proportion of the authorized capital compared to the previous year, which can be explained both by the specifics of companies included to the sample, and by the partial transfer of the retained earnings into the authorized capital.

Characteristic changes in the structure of long-term debt capital are the following (Table 6): (1) shift of the biggest proportion of the large companies long-term debt—from the loans toward deferred tax liabilities; (2) significant increase in the proportion of loans in the long-term financing of medium-sized companies and microenterprises; (3) minimal proportion of the loans in the group of small enterprises; and (4) small proportion of deferred tax liabilities for all groups, except large companies.

Table 7 shows the structure of short-term debt. The main source of short-term debt capital for all groups of companies is accounts payable. The exception is the group of microenterprises in 2016, in which the deferred incomes prevailed. For all groups except large companies, the proportion of accounts payable increased. The large and small companies have increased the proportions of short-term loans while medium-sized companies, on the contrary, reduced the proportion of loans by more than three times. In the group of microenterprises, the proportion of loans remains very small; the distinctive feature of their short-term financial sources is a large percentage of deferred income, while in other groups of companies this source equals to zero or is close to zero.

The results of the debt capital analysis are in correspondence with the data for the country as a whole, according to which by the end of 2017 the aggregate volume of loans given to construction companies grew by 15–18% compared to 2016 and constituted about 1.4 trillion rubles, but overdue loans constituted to about 280 billion rubles that is equivalent to 15–18% of the total amount.

From the Table 8, compiled on the basis of data for 2016, it can be seen that ROA, that is, the ability to earn profits on invested capital, varies significantly by group of companies and is the minimal for medium-sized companies. In general, the ROA level does not allow using bank loans without lowering the return on equity. For example, in 2016, the interest rate on loans to small businesses was at least 14%.

Table 7 Structure of short-term debt, %

Group of companies	Year	Loans (short term)	Accounts payable	Deferred income	Other current liabilities
Large	2016	5.82	73.57	0.01	20.29
	2017	12.52	62.07	0.00	25.09
Medium	2016	17.17	46.49	0.00	35.95
	2017	5.48	70.13	0.00	24.10
Small	2016	4.51	94.48	0.00	0.94
	2017	10.82	85.77	2.51	0.73
Micro	2016	2.54	40.47	52.97	3.94
	2017	3.23	60.33	36.18	0.00

Source: Compiled by the author

Table 8 Estimation of financial leverage effect, %

Group of companies	ROA	ROE	OEFL	TS	AIR	DFL	CEFL	CEFL–OEFL
Large	13.41	40.49	27.08	80.99	2.19	11.23	42.23	15.15
Medium	2.34	23.56	21.22	78.38	0.64	1.71	27.60	6.38
Small	5.67	29.54	23.87	75.30	0.18	5.49	28.96	5.09
Micro	2.53	14.46	11.93	87.52	0.19	2.34	29.43	17.50

Source: Compiled by the author

However, the profitability of equity (ROE) for all groups is a multiple of the ROA, and for medium-sized enterprises, the excess is the largest—10 times. This is due to the low average interest rate on debt, which was calculated as the ratio of the sum of current interest payments to the total amount of debt. It should be noted that deferred tax liabilities, which constitute most of the long-term capital of large companies, do not entail interest accrual, but increase the payments on income tax of the following periods. The most proportion of the short-term debt is constituted by the accounts payable. The nature of the “other” long- and short-term liabilities can vary and some kinds of it may have nonmarket interest rates.

The tax shield calculated on the basis of the actual rate of income tax is the biggest for microenterprises, which is consistent with the state policy on granting preferences to small businesses. However, for small- and medium-sized companies, which also have rights for tax preferences, the calculated tax shield is smaller than that of large companies. The calculated value of the financial leverage effect as well as the actual difference between ROE and ROA, is significantly bigger for large companies than for other groups of companies. However, the value of the second indicator is much less than the calculated value of the financial leverage effect, which is explained by the negative balance of nonoperational activity reducing profit.

5 Conclusions

Capital structure analysis of Russian construction companies of different sizes allowed making the following conclusions:

The activity of Russian construction companies in 2016–2017 was carried out in the situation of economic recession, which significantly affected the number of active companies of all size groups. However, in the construction industry as a whole, the sanitizing effect of the recession is evident, as companies that continue operating become more circumspect in choosing sources of financing, that positively affected on their sustainability, characterized by the proportions of equity and long-term (both own and borrowed) financing sources. Sustainability indicators increased for all groups of companies, except for large companies, which, increasing in the proportion of equity, declined the proportion of long-term sources in whole.

In 2017, compared to 2016, all groups of companies significantly changed their capital structure. Increase of the proportions of equity and long-term debt can be considered as the adherence to the pecking order theory principles. However, the preferences are determined not by maintaining the existing structure of capital, which is evidently high risk, but by the aspiration to change it to provide sustainability. This also corresponds to the construction industry specifics. Within each group of companies, the capital structure varies widely, but the financial leverage variation tends to decrease. Improving the capital structure of all groups of companies can be explained by the competitive process forcing the companies with a high-risky capital structure to leave the market and giving the companies with greater level of financial sustainability the opportunity to get additional orders.

In all groups of companies, the existing capital structure provides interest rates on debt capital much lower than the rate of bank lending. This gives companies the opportunity to provide a positive financial leverage differential despite low ROA and significantly increase ROE that is the essence of financial leverage. However, the financial leverage effect is not manifested in its pure form due to the negative net result of nonoperational activity of most companies.

The tendency to reduce proportion of long-term financing sources combined with the growth of deferred tax liabilities is a significant threat for the future of large companies. For medium-sized companies and microenterprises, a low level of ROA combined with a high level of financial leverage can become a critical factor. The level of income taxation higher than for other groups is the threatening factor for small companies.

Low level of ROA does not allow construction companies to use bank loans actively, so the companies should be cautious attracting large loan funds and analyze the cost sensitivity of their projects more carefully. Since the banks tend to be reluctant to fund long-term projects in the initial stage, companies should look forward to changing funding schemes during implementation of such projects, shifting from the own sources at the initial stages, to borrowed funds, including bank loans, at the stage of high readiness.

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Sukuk on the Socially Responsible Investments Market



Dariusz Piotrowski

Abstract The aim of the chapter is to examine to what extent investment funds implementing the strategy of socially responsible investing engage their funds in the assets of the Islamic financial market. Particular interest was focused on the sukuk—the most known Islamic capital market instruments. Research was conducted by way of applying critical analysis to the literature of the subject. The study yielded results indicating a total lack of sukuk in the portfolios of leading mutual SRI funds. The reason of this phenomenon may be the perception of sukuk as instruments not conforming to the idea of responsible finance, but narrowly related to Islamic ethics.

Keywords Sukuk · Ethics · Responsible investments

1 Introduction

Judaism, Hinduism, Christianity, and Islam pay particular attention to the issue of morality in their value systems. The universal and rigorous observance of religious principles in the world of Islam makes ethics an important point of reference when analyzing the behavior of individuals and societies (Kettell 2011). Shariah principles engulf all aspects of life; thus, they also apply to the assessment of business practices and financial investments (Tarantino and Cernauskas 2011). The ethical dimension of Islamic economy is underlined through the use of expressions such as justice, social welfare, or social good in its definition (Cattelan 2013; Warde 2010). In an Islamic financial system, emphasis is placed not only on profitability, but also on the ethical, moral, social, and religious dimensions in the activities of market participants (Omar et al. 2013).

The paramount importance of ethics, equity, wealth distribution, social and economic justice in Islamic finance (Akkizidis and Khandelwal 2008) suggests substantial similarities between investments carried out within a financial system

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based on Shariah rules and ethical investments known from the conventional financial market, as well as ideas underlying the concept of corporate social responsibility (CSR) (Dusuki 2008; Williams and Zinkin 2010). The author has decided to examine whether investment fund managers see the similarity and perceive Islamic financial instruments as ethical. Acquiring knowledge in this area would make it possible to verify the views expressed in the literature on ethics in the area of Islamic finance. Therefore, the present research has adopted the assumption that sukuk, being the most known Islamic capital market instruments, are of interest to funds operating in the market of broadly understood responsible finance. The main purpose of the chapter is to examine to what extent mutual funds implementing the idea of socially responsible investing engage their funds in the sukuk. The work has adopted the following research hypothesis: Sukuk are invested in by mutual funds which are at the forefront of the socially responsible investing (SRI) market. Research was conducted by way of applying critical analysis to the literature of the subject. It has shown a total lack of sukuk in the portfolios of leading mutual SRI funds.

This chapter is divided into five sections. After introducing the topic, Sect. 2 highlights the relation between Islamic finance and responsible investments. Section 3 outlines sustainable and responsible investment (SRI) sukuk. In Sect. 4 were presented results of analysis. The study is completed with many final considerations (Sect. 5).

2 Islamic Finance as a Part of the Responsible Finance Sector

Capital Market Malaysia (2016) considers ethical, equitable, social, and sustainable investments as a synonym to both Islamic finance and socially responsible investments. Such approach is an oversimplification and is not supported by financial theory and practice. The literature far more often presents a view that Islamic finance is an example of ethical investing. However, this relation between Islamic finance and ethical investment is also subject to criticism. Indeed, it is hard to justify a thesis purporting that anything which complies with the principles of Shariah and ethics as seen in Islam is universally treated as ethical behavior. The second area under critique concerns the practical application of Islamic law in the activities (behavior) and investment on the capital market (Khan and Porzio 2010).

Such ethical norms as justice and fair dealing, fulfilling one's covenants and paying liabilities are commonly accepted rules. But Islamic financial institutions have to follow an additional Shariah guidance which does not exist in conventional finance. Limitations derived from Islam forbid practices such as *riba* (charging and paying interest), *maysir* (gambling and games of chance), and *gharar* (uncertainty in contracts) (Ayub 2007).

According to the principles of Islamic jurisprudence, the payment and receipt of interest is a grave sinful act. The ethical–economic justification for that prohibition is

the conviction that *riba* is a form of social and economic exploitation which is unfair and unproductive (Iqbal and Mirakhor 2011). In the opinion of Islamic jurists, interest-based lending should be replaced by contracts which base on assets and are governed by the principle of profit and loss sharing. On the other hand, financial products which do not provide sufficient details of all contract elements (excessive *gharar*) or whose profitability depends on chance to a considerable extent (*maysir*) are forbidden as they may cause irreversible harm in individual and social life. The abovementioned prohibitions result in the exclusion from Shariah-compliant investments of instruments that are issued by banks, conventional insurance companies, as well as derivatives.

The ethical approach to investment in Islamic finance is most often expressed through the use of negative criteria for the selection of assets for investment portfolios. Exclusions in the sphere of investments are aimed to protect the interests of weaker parties on the one hand, and to promote social harmony on the other (Iqbal and Molyneux 2005). An oft-quoted example is that it is forbidden for any Islamic financial institution to invest in the following goods or activities related thereto: alcoholic beverages, pork, gambling, tobacco and drugs, activities associated with pornography, armaments and destructive weapons. Clearly, most of these exclusions may also be found in ethical investments carried out within conventional finance; however, a portion is unethical only from the viewpoint of Islam. Such is also the case of regulations referring to the manner in which the activities of an enterprise issuing financial instruments may or may not be funded. In Islam, it is unethical to invest in securities of companies with heavy debts, excessive liquid assets, benefiting from interest, and significantly involved in actions deemed unethical in Islam. Table 1 presents maximum accepted levels of selected financial ratios which were most commonly used in the screening methodology of over 20 entities operating in the Islamic financial market, including: Shariah service providers, index providers, regulators, banks, and mutual funds.

So far, the deliberations have indicated certain similarities between ethical investments and Islamic investments. It should be borne in mind, however, that at times

Table 1 Limit values for financial ratio screens for Islamic investment

	% of market capitalization	% of total assets	% of equity	% of revenue
Debt	33	33		
Interest-based debt	33	25–40	82	
Debt + liquid funds	50			
Accounts receivable	33–49	33–70		
Receivables + cash		50–70		
Liquid assets		33–80		
Cash + interest-bearing securities	33	33–33.33		
Interest income				3–10
Non-permissible income				5–10

Source: Own elaboration based on Ho et al. (2011)

there are significant differences between the understanding of ethics in conventional and Islamic finance. When trying to determine the relations between Islamic finance and responsible finance, it must be recognized that in responsible finance ethics is only one of many components considered in investments. This fact is indicated in the definition developed by Eurosif, stating that “sustainable and responsible investment (“SRI”) is a long-term oriented investment approach which integrates ESG (environmental, social and governance) factors in the research, analysis and selection process of securities within an investment portfolio. It combines fundamental analysis and engagement with an evaluation of ESG factors in order to better capture long term returns for investors, and to benefit society by influencing the behavior of companies” (Eurosif 2016, p. 9).

The SRI is a very diversified category, as proven by the classification developed by the Global Sustainable Investment Alliance (GSIA). In accordance with the said categorization, sustainable investment encompasses the following activities and strategies (GSIA 2017):

1. Negative/exclusionary screening
2. Positive/best-in-class screening
3. Norms-based screening
4. Integration of ESG factors
5. Sustainability-themed investing
6. Impact/community investing
7. Corporate engagement and shareholder action

Since the early 2000s SRI has placed growing focus on nonethical aspects, and factors such as environment and corporate governance have played an increasingly important role (OECD 2007; Eurosif 2016). In Islamic economy we can also find rules which underline the importance of sustainable development and promote a mindful approach to the natural environment (Cattelan 2013). The moral filter used in Islamic economy modifies human behavior and preferences, and as a result prevents conspicuous consumption and excessive claims on resources (Langton et al. 2011). In the field of corporate governance, Islamic finance may apply teachings on contracts, trusts, property rights, and business ethics (Askari et al. 2012).

Some guidelines as to responsible investments may be found in regulations worked out by the Accounting and Auditing Organization for Islamic Finance Institutions (AAOIFI), a leading institution supporting the standardization and harmonization of the Islamic financial market. AAOIFI has introduced Governance Standard for Islamic financial institutions No. 7: Corporate social responsibility conduct and disclosure for Islamic financial institutions, which defines CSR as all activities carried out by an IFI (Islamic Financial Institution) to fulfill its religious, economic, legal, ethical, and discretionary responsibilities as financial intermediaries for individuals and institutions (AAOIFI 2010). According to Standard No. 7, religious responsibility refers to the overarching obligation of IFIs to obey the laws of Islam in all their dealings and operations. Economic responsibility refers to the obligation for IFIs to be financially viable, profitable, and efficient. Legal

responsibility refers to the obligation of IFIs to respect and obey the laws and regulations of the country of operation. Ethical responsibility refers to the obligation of IFIs to respect the mass of societal, religious, and customary norms which are not codified in law. Discretionary responsibility refers to the expectation from stakeholders that IFIs will perform a social role in implementing Islamic ideals over and above the religious, economic, legal, and ethical responsibilities.

The analysis of the abovementioned definition points to the relatively higher importance of factors referring to religion and ethics than to environment and corporate governance. This is true not only for CSR but also for SRI carried out in the environment of the Islamic capital market. IFIs, in contrast to their counterparts, rank screening criteria concerning impermissible business activities higher than selection criteria promoting positive impact on society or the environment (Iqbal and Mirakhor 2011; Novethic 2009; Elias 2017). Moreover, a comparison of commonly used screens employed in responsible finance shows substantial differences between Islamic finance and socially responsible investment. Contrary to institutions operating in the SRI market, IFIs usually omit the following screens in the process of selecting instruments to investment portfolios: social, environmental, business ethics, labor standards, human rights, corruption, corporate governance and executive compensation, global health, political donations, tax avoidance, advocacy, and engagement (Thomson Reuters 2015). As a result, in accordance to Thomson Reuters (2015), Islamic investments in 2014 constituted just over 4% of the responsible investment market and were made according to only two strategies: negative/exclusionary screening and ESG integration (marginal share).

Analysis conducted by Thomson Reuters (2013) encompassing reports of institutions operating in the SRI market and the Islamic finance market indicates that the two are essentially distinct (Thomson Reuters 2013). Entities operating in accordance with the idea of SRI do not mention Islamic investments in their reports, and conversely, Islamic finance institutions do not present their activities with respect to socially responsible investing. This state of affairs is presumably rooted in cultural differences, divergent customer target groups, a lack of cooperation, and the dominant role of one investment method in a given geographical area (Hayat 2013). Bearing the above in mind, we may draw a conclusion that although in theory there is certain similarity in the aims, principles, and values between SRI and Islamic finance, both approaches to investing are quite dissimilar in practice. Therefore, it may be assumed that sukuk, as instruments of Islamic finance analyzed in this chapter, are not universally used by mutual funds implementing various strategies in the sphere of broadly understood responsible investment.

3 Sustainable and Responsible Investment Sukuk

According to the Shariah Standard published by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI 2008), sukuk are certificates of equal value representing undivided shares in ownership of tangible assets,

Table 2 Differences between asset-based and asset-backed sukuk

Category	Asset-based sukuk	Asset-backed sukuk
Sources of payment	Originator/obligor cash flow	Revenue generated by underlying asset
Form of periodical payment	Fixed income	Income related to profitability of financed project and PLS sharing ratio
Sukuk holders' ownership	Contractual ownership with no right to dispose of underlying asset	Legal ownership with right to dispose of asset
Presentation of asset	On balance sheet of originator/obligor	Typically, in SPV's book
Recourse in case of defaults	To obligor/originator	To underlying asset

Source: Own elaboration based on Hidayat (2013)

usufruct and services or (in the ownership of) the assets of a particular projects or special investment activity; however, this is true after receipt of the value of the sukuk, the closing of subscription and the employment of funds received for the purpose for which the sukuk are issued. In theory sukuk are presented as safer securities than conventional bonds because they are a form of asset-backed lending. The ethical nature of sukuk is also widely underlined because their design replaces interest with profit and loss sharing, a fundamental principle of Islamic finance (Safari et al. 2014).

The grounding of Islamic financial instruments in assets was devised to bring funding closer to real economic processes and societal needs. Another important factor was the care for investors' financial security, especially in the case when issuers would not redeem those instruments. In practice, however, two approaches have developed in this respect (Table 2). The market offers asset-based sukuk and asset-backed sukuk, with the latter more compliant with Shariah both in form and substance (IFSB 2008).

Usmani (2008) criticized the market practice consisting in the lack of real transfer of the title to assets to sukuk holders and the fact that sukuk entailed a regular distribution of profits and the guarantee to return the principal to the sukuk holders at maturity. In their work, Saeed and Salah (2014) quote Usman's estimates that 85% of all the sukuk outstanding at that moment were issued and traded in noncompliance with Islam. It may be assumed that it was also unethical in the broad sense to offer those instruments as Shariah compliant. Doubts as to the ethicality of sukuk may also be raised in light of the words of Michael Bennett—Head of Derivatives and Structured Finance—World Bank Treasury presented in the report of Thomson Reuters (2014). He sees an opportunity for an increase in ethical sukuk issues in the coming years, on condition that the issuers choose to earmark their issues for specific ethical purposes. It can therefore be concluded that only a portion of the sukuk issued since the beginning of the market, i.e., the early 2000s, are ethical and may be of interest to funds embracing the idea of socially responsible investment.

The analysis of the Malaysian sukuk market provides further arguments pointing to the difference between Islamic investment and responsible investment. Malaysia

is a global leader in sukuk issues and is ranked high in the area of broadly understood Islamic finance. It attributes its success to an active policy of state authorities aiming at creating the world's most advanced Islamic finance market. The ideas included in Capital Market Masterplan 2 were implemented, among other means, through the launch of the Sustainable and Responsible Investment (SRI) Sukuk framework by the Securities Commission Malaysia in August 2014. The regulation indicates four groups of projects that may be funded using SRI sukuk: natural resources, renewable energy and energy efficiency, community and economic development and *waqf* properties/assets. Based on the new law, the first social impact sukuk program dedicated to educational projects and worth RM 1 billion was started in June 2015.

In general, the global market saw very few SRI sukuk issues. One such example is the issue of green sukuk organized in 2012 by two Australian solar energy companies, Solar Guys International and Mitabu, which raised US\$100 million (the first tranche of US\$500 million) for a 50-MW photovoltaic project in Indonesia. Another SRI sukuk issue was carried out by the UK-based International Finance Facility for Immunisation in November 2014; it obtained US\$500 million for financing children's immunization in the world's poorest countries (MIFC 2016). In 2017, Tadau Energy Sdn and Quantum Solar Park issued green SRI sukuk with an intention to raise money to fund solar photovoltaic plants.

4 Sukuk as an Investment Option for Funds Implementing the SRI Idea

This section will examine whether and to what extent mutual funds implementing various strategies within SRI invest their resources in sukuk. To this end, an analysis was conducted among prospectuses and annual reports of funds which as at the end of the first second of 2018 presented themselves as socially conscious and which were included in the list published by Morningstar. The study covered 46 funds which invested in equity and debt instruments. This choice is related to the fact that sukuk are a separate and internally divergent category of financial instruments, albeit with certain features of bonds, shares, and investment certificates. Among the analyzed funds, eight were described as "leading mutual funds." These funds met certain quantitative criteria, such as risk, performance, expenses, assets under management, and qualitative criteria, such as changes in a fund's investment strategy or management structure, portfolio manager tenure and portfolio composition, which were taken into account during the evaluation performed by Charles Schwab Investment Advisory, Inc.

The analysis of the prospectuses and annual reports of socially conscious funds listed in Table 3 determined that sukuk were absent from the portfolios of leading mutual funds. The portfolios of the other analyzed funds contained either no sukuk (36) or only a marginal portion of such investments (JP Morgan Corporate Bond A fund—share of sukuk in portfolio—less than 1% of total assets). Only in case of

Table 3 Socially conscious funds list

Category and name of funds	Sukuk in portfolio
<i>Allocation mutual funds</i>	
Ave Maria Bond ^a	No
GuideStone Conservative Allocation	No
Calvert Conservative Allocation A	No
Eventide Multi-Asset Income N	No
1919 Socially Responsive Balanced A	No
GuideStone Defensive Market Strategies ^a	No
Green Century Balanced	No
Calvert Aggressive Allocation	No
Pax Balanced Individual Investor	No
<i>Alternative mutual funds</i>	
Crossmark Steward Covered Call Income A	No
CCM Alternative Income Institutional	No
GuideStone Strategic Alternatives	No
<i>Sector equity mutual funds</i>	
GuideStone Global Real Estate Securities	No
Vert Global Sustainable Real Estate	No
Eventide Healthcare & Life Sciences N	No
Fidelity Select Environment and Alternative Energy Portfolio	No
AllianzGI Global Water A ^a	No
Calvert Global Water A	No
<i>Taxable bond mutual funds</i>	
Calvert Income A	No
JP Morgan Corporate Bond A	Yes
Aberdeen Emerging Markets Debt A	No
Pax High Yield Bond Individual Investor	No
Access Capital Community Investment A	No
BlackRock Impact Bond Investor A	No
Brown Advisory Sustainable Bond Investor	No
Calvert Green Bond A	No
Domini Impact Bond Investor	No
TIAA-CREF Social Choice Bond Retail	No
GuideStone Global Bond	No
Mirova Global Green Bond A	No
Saturna Sustainable Bond ^a	No
<i>International equity mutual funds</i>	
Amana Developing World Investor	Yes
Calvert Emerging Markets Equity A	No
Hartford Schrodgers Emerging Markets Equity A	No
JP Morgan Emerging Markets Equity A ^a	No
Morgan Stanley Institutional Emerging Markets A	No
Morgan Stanley Institutional International Advantage A ^a	No

(continued)

Table 3 (continued)

Category and name of funds	Sukuk in portfolio
RBC Emerging Markets Equity A	No
Aberdeen International Equity A	No
Ave Maria World Equity	No
Crossmark Steward International Enhanced Index A ^a	No
Green Century MSCI International Index	No
Pax MSCI EAFE ESG Leaders Index Indv Inv	No
Pax Ellevest Global Women’s Leadership Individual Investor ^a	No
Thornburg Better World International A	No
TIAA-CREF Social Choice International Equity Retail	No

Source: Own elaboration based on Charles Schwab (2018)

^aLeading mutual funds

Amana Developing World Investor fund, share of sukuk was substantial—about 96% of total assets. Therefore, it may be assumed that apart from the characteristic features of sukuk referred to in the literature, such as scarce knowledge of such instruments among capital market participants, low turnover liquidity, and high legal risk related to the sukuk structure, a major factor limiting SRI funds’ interest in those instruments consists precisely in the small amount of sukuk issues that stress the importance of ESG factors.

5 Conclusion

The analysis conducted in this chapter has led to the determination of differences in the understanding of ethical investment in the world of conventional and Islamic finance. It was also stressed that contrary to opinions presented in the literature, a major portion of sukuk are not ethical financial instruments. This situation stems either from the fact that the structure of those instruments does not comply with the requirements of the Shariah—which was presented in detail in the critical analysis of the sukuk market performed by Muhammad Taqi Usmani—or that the ethical nature of the venture funded with the sukuk issue has not been indicated.

Since the beginning of the twenty-first century, socially responsible investments have primarily accentuated issues related to environment protection and corporate governance. While Shariah touches upon the said questions, they do not constitute important screening criteria in Islamic investment. This statement holds true even though SRI sukuk markets are functioning in several countries. This should be linked to the negligible scale of SRI sukuk issues and the short history of the market for such instruments.

The study yielded results indicating a total lack of sukuk in the portfolios of leading mutual SRI funds, which gives grounds to reject the research hypotheses. There may be many reasons behind such actions of fund managers. As such, they

may be identified through a question survey addressed to this group of SRI market participants. Having regard to the considerations included in this chapter, it may be assumed that one such reason may be the perception of sukuk as instruments not conforming to the idea of responsible finance, but narrowly related to Islamic ethics.

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