Work Digitalization and Job Crafting: The Role of Attitudes Toward Technology

Davide de Gennaro[1(✉)], Paola Adinolfi[2], Gabriella Piscopo[3], and Marianna Cavazza[4]

[1] University of Salerno, Via Casa Rosa 35, 80063 Piano di Sorrento, Italy
ddegennaro@unisa.it
[2] University of Salerno, Fisciano, Italy
padinolfi@unisa.it
[3] University of Salerno, Salerno, Italy
gpiscopo@unisa.it
[4] Bocconi University, Milan, Italy
marianna.cavazza@unibocconi.it

Abstract. Responding to recent calls in literature, this article aims at investigating the effect of digitalization and information and communication technologies (ICT) on job crafting, a proactive behavior defined as work personalization or individual job redesign. More specifically, through a qualitative pilot study, we examine the attitudes toward technology – namely the individual's collection of beliefs which determines whether or not to engage in certain related behaviors – leading to these "do it yourself", unstructured, and self-targeted practices in a working context that is increasingly digitalized. The inductive qualitative research with 28 interviews suggests the mediating role of two variables in the smartphone and general social media usage. Implications for theory and practice, suggesting optimal behaviors and functioning within organizations arising from positive and proactive attitudes and traits of individuals, are discussed.

Keywords: Job crafting · Attitudes toward technology · Smartphone usage

1 Introduction

The organizational culture and behavioral dynamics of the past 20 years have had to deal with a "do it yourself" (DIY), unstructured, and proactive approach toward work called job crafting [1]. This can be defined as "work personalization" or "individual job redesign": these are changes made independently by workers to make their job more stimulating and motivating [2], but also to improve work engagement and meaningfulness [3]. With job crafting employees actively modify the meaning of their job by shaping activities or relations in order to experience and live their job in a different way [4].

Job crafting captures the physical and cognitive modifications individuals implement in the task or relational boundaries of their work [1]. It consists of three proactive individual behaviors enabling employees to modify their jobs to fit more their natural

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skills, preferences, and inclinations at work: (i) physically altering the task boundaries to increase, reduce, or simply modify the activities to be carried out, (ii) changing the relationship style by investing in or avoiding high quality relationships with co-workers, supervisors, customers, and so forth, and (iii) rethinking the cognitive nature by mentally reframing one's job in more positive terms. For example, a personal trainer behaves in task crafting when choosing a different environment from the usual gym to train customers [5], an accountant behaves in relational crafting when preferring to participate in social initiatives rather than focusing on the traditional job [6], and the cleaning staff of a hospital behaves in cognitive crafting when attributing to the own work a wider and more significant meaning in relation to the contribution made to the healing process of patients [7].

The literature on the topic has grown a lot together with the new organizational dynamics that have taken hold at work, but at the same time some points remain unsolved. First, despite it has long been predicted that digitalization and information and communication technologies (ICT) are fundamentally changing the way we work and live [8], just few authors have dealt with issues related to ICT – such as the use of technology or other information systems to change the processes of work [9], to maintain increased flexibility [10], or to perform one's own tasks in more innovative ways [11] – so scholars did not define any specific technology-related crafting forms and the contributions on the subject are scarce [12], although a need for studies on the behavior of individuals in this new perspective is feld [13]. Moreover, the analysis of the antecedents of job crafting is still overlooked [14], even if job crafting literature examined personality, work, and demographic determinants such as proactive personality [15], general self-efficacy [16], work engagement [17], job performance [18], and job satisfaction [19]. Furthermore, a shortcoming of current research concerns the overemphasis on the task and relational dimensions of job crafting and the little scholarly attention towards the cognitive one, as testified by the fact that most of the scales to measure job crafting do not even include items to measure the cognitive dimension [20]; the use of scales that include all three variables are preferable since none of the sub-topics should be underestimated [6], but a large part of literature does not think so. Finally, in our knowledge also studies in the public sector are scarce, except for a few examples [21, 22], although they are prescribed jobs with well-defined tasks, expectations, and positions in which the behavioral practices of job crafting could creep in [23].

To fill these gaps, this study aims at investigating job crafting in a "technological" perspective, that is to identify – within a central public administration of a region of southern Italy – how the positive attitudes toward technology affects these proactive behaviors. Through a qualitative pilot study with 28 interviews, this study tries to shed light on the neglected relationship between work digitalization and job crafting, also contributing to literature by advancing research on antecedents and "digital" causes that can lead to changes in one's job and by considering all the three facets of job crafting. The spread of ICT technologies is profoundly changing the world of work and people's lifestyle habits [24] and the possibility that proactive workers' behavior is also changing as a consequence cannot be excluded. The new processes connected to ICT, in addition to creating new job opportunities and improving their quality, can also determine the emergence of new risks that must be identified and assessed with a view to well-being

and undesired behaviors at work. The mediating variables of this relationship, which emerged from this pilot qualitative study, suggest that the positive attitudes towards technology leads to job crafting behaviors through the use of smartphones and social media. Implications for theory and practice are discussed.

2 Theoretical Framework and Hypothesis

The job crafting expression was proposed in 2001 by two psychologists – Amy Wrzesniewski and Jane E. Dutton – in an attempt to describe a possible magic: that of transforming the work you have into the work you love. It is about actions undertaken from a bottom-up approach that generates greater work engagement and higher performance [3], and that employers should recognize in order to guide workers behavior towards positive actions [25]. Work engagement, for example, is defined in terms of high levels of energy and involvement in the own work [26]: engaged employees often experience positive emotions, i.e. happiness, enthusiasm, knowledge, or self-efficacy and they are fully connected and in line with their job [27]. Indeed, when employees mobilize resources through job crafting behaviors, they can create a work environment that meets their needs and that is more in line with their abilities [2].

Job crafting is an activity that employees spontaneously undertake to meet their needs and preferences in the workplace [28]. It's a behavior that requires an adaptation to the challenges and to the constraints imposed by an employer [23] and it represents a strategic advantage for individuals and for the organization as a whole, although these changes are not always in line with the organizational goals and needs [29]. These are changes which can have a structural (physical or procedural), social, or cognitive form [1] and which are self-targeted and volitional [30].

Wrzesniewski and Dutton [1] argued that individuals are motivated to engage in job crafting behaviors because they are guided by three types of needs: the control over work, the social relations individuals experience in the workplace, and the attractive image. Based on these needs, many scholars distinguish "personal/individual" and "contextual" antecedents of job crafting [31], i.e., respectively, the self-efficacy [2] and the work context [32]. The personal/individual determinants affect person's behaviors, such as the Big Five personality traits and the proactive personality [33, 34] and the orientation to action [35]. Nevertheless, personal/individual factors influencing job crafting behavior cannot do without contextual factors – such as leadership [36] and colleagues [3] – referring to the environments condition where work activities take place. As already mentioned, despite these studies, the literature has somewhat neglected the deepening of the antecedents of job crafting [6, 14].

The pioneering conceptualization of job crafting by Wrzesniewski and Dutton [1] saw a further ramification in 2010 when some authors examined the concept through the lens of the Job Demands-Resources model (JD-R) [2]. This approach enables consideration of the relationships between resources and demands associated with one's particular job in the job crafting process. More specifically, the authors argue that (challenging and hindering) job demands are the aspects of the job that drain an individual's resources, while (structural and social) resources acquired with one's job can help individuals address specific job demands. In this paper, we have decided to rely on the initial

framework by Wrzesniewski and Dutton since the JD-R model does not consider the cognitive dimension of job crafting at all, conceived as not relevant because it is not about shaping the boundaries of one's work" [2]. Conversely, the cognitive job crafting represents a proactive strategy for achieving fit with the work environment through changing the meaning of work and work identities [14], but also the starting point of the entire job crafting process [23, 37], therefore including it in our study may have relevant and interesting implications.

Drawing on job crafting theory and responding to recent calls in literature [12, 38] this study aims at identifying an antecedent of job crafting in digitalization, since behaviors could be oriented towards the technological aspect of work [39]. The advent of technology has changed the landscape so that almost all activities can be carried out via a portable device or with a laptop; for example, thanks to Wi-Fi, people can have access to the Internet, e-mails, and many different types of applications anywhere and at any time of the day, and this undoubtedly influences the way people carry out their work [40]. The design and nature of knowledge work is changing due to work digitalization [24], since digital technologies are supposed to increase the automation of different work tasks, resulting in job destruction [41]. Consequently, also employees' behaviors are affected by digitalization with tremendous positive, but also negative potential for the organization and individuals [13].

Within this framework, the goal of this study is to investigate the attitudes towards technology, and in this way to understand what are the digital tools and ways through which individuals behave like job crafters. Attitude represents an individual disposition toward performing a certain behavior [42] and it is influenced by the perception of utility and ease of use [43, 44]. It is a concept of three-dimensional nature, involving cognitive, affective, and behavioral components [45], and it is primarily an interplay of affect and cognition to be then a behavioral tendency [46]. Among the studies on the topic, an attitude toward a concept, such as technology [47], is the individual's collection of beliefs which determines whether or not to engage in certain behaviors [48]. Attitudes toward technology may include enthusiasm and at the same time boredom interest in the subject [49] and this dual perception of the phenomenon translates into numerous contributions on the topic in the literature of the last years [50–52]. Nevertheless, in our knowledge, so far it has not been studied in depth in relation to proactive behaviors.

Since job crafting is mainly based on personal factors – and the "attitude" has been shown to lead to an improvement in job characteristics and a perception of person-job fit due to engaging in job crafting [16, 31] – a relationship with ICT tools may exist. It is therefore possible that the positive attitudes toward the use of technology influences and determines job crafting behaviors.

3 Method

The proposed study represents the first of the two phases in which it was conceived. It is a qualitative pilot study useful for formulating hypotheses and subsequently measuring them with a quantitative methodology to be referred to the entire organizational population to give greater rigor to the results. The use of a pilot study is fundamental for a good study design as it can provide interesting and unexpected insights from a study object [53, 54].

3.1 Data and Procedures

In this pilot study, we adopted an inductive qualitative approach [55, 56], by employing a qualitative research method based on different sources in order to reduce the impact of potential biases [57]. In line with this, empirical data are based on formal documents, such as appointments decrees and job descriptions, which gave us an overall overview of the organizational and work situation of the public administration object of the study, and workshops and focus groups organized to develop our initial insights with a sample of volunteer workers involving 3 to 5 participants.

Data were collected through semi-structured interviews conducted with workers of a central public administration in southern Italy dealing with healthcare. Healthcare organizations in recent years embraced the digital paradigm and they are characterized by a high degree of complexity because of the heterogeneity of healthcare professionals' mindsets, networks, and decision-making processes [58]. Since there is a growing awareness that recognizes the need for healthcare professionals to take a proactive role in shaping their future jobs to improve healthcare systems [18], this sample may be particularly interesting to investigate these behavioral dynamics. The interviews lasted about 45 minutes and took place in respondents' office. As part of a work process reorganization study, it has been possible to recruit 28 participants including managers, employees, and interns.

Participants were informed that a team of researchers was conducting a study on technology, ICT, and proactive workplace behaviors and was looking for participants. The average age of participants was 48.4 years ($SD = 8.74$) and gender was almost equally distributed (13 women and 15 men). All interviews were audio-recorded and then transcribed for the qualitative analysis.

3.2 Coding and Analyzing

We followed the Gioia Method [59], which is a systematic approach useful for bringing "qualitative rigor" of inductive/abductive research. The study's approach depended on a generic research question, i.e. "we wished to explore attitudes, beliefs, and behaviors about work digitalization and the use of technology at work". The interviews were administered without a structure of questions, but rather as if they were informal conversations within which it was possible to range over all the topics that concerned attitudes and working behaviors of public workers. According to this method, we did not aprioristically impose any constructs or theories to our study; for instance, we did not talk about the concept of job crafting and we did not describe the features of this technique to the participants. Indeed, we found that respondents never used the term "job crafting" in their claims.

In analyzing the interviews, we used both a grounded theory approach [60] as well as Gioia method [59], and this analysis process involved three phases that systematically moved from unprocessed data to theoretical assumptions. In the first stage, the focus was on finding recurring themes in interviews based on respondents' answers. The notes from the interviews was uploaded into an online software for qualitative data analysis, Dedoose; then two researchers independently coded all the transcribed interviews and subsequently compared personal codes by engaging in a discussion when disagreements

emerged. We used Cohen's [61] κ coefficient to estimate the level of agreement between the coders, following an iterative approach [62] and continuously iterating between our data and the emerging conceptualizations. By comparing codes and by engaging in a discussion when disagreements emerged, the final consensus reached the value of κ=.90, reflecting excellent agreement between the raters [63]. Subsequently, we discerned patterns in the data with the aim of bringing out concepts and relationships and then of formulating them in theoretically-relevant terms [59], giving particular attention to nascent concepts that seemed to have no adequate references in the literature. Once we identified all the relevant first-order recurring themes and codes and the second-order concepts and relationships, we assembled them into a data structure that can be presented as a visual representation (Fig. 1).

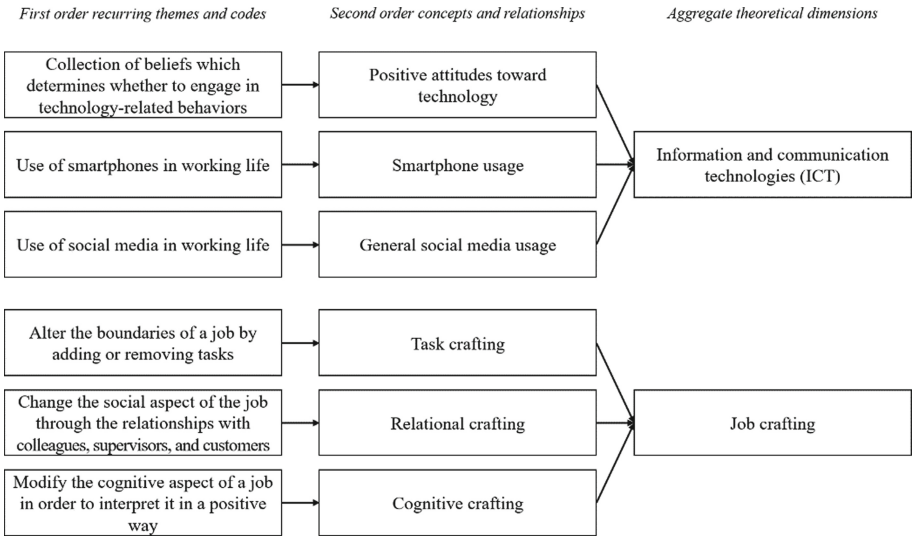

Fig. 1. Data structure.

4 Results

As above mentioned, none of the public workers interviewed was familiar with the concept of job crafting; however, the majority of them revealed to regularly engage in a series of proactive behaviors that were aimed at modifying some aspects of their job which fit with the task, relational, and cognitive techniques described by Wrzesniewski and Dutton in their seminal contribution [1].

With reference to the attitudes towards technology, the interviewees showed different (and also diametrically opposed) opinions, without any particular correlation emerging on the basis of demographic variables:

I believe that technology is fundamental for our lives and for our work; to date it is unthinkable to live without! (Respondent #3, example of positive attitudes toward technology)

The human mind is not replaceable by machines; indeed, we should reclaim its centrality. (Respondent #8, example of negative attitudes toward technology)

On the one hand, some interviewed workers claim to have positive attitudes toward ICT since they use these tools to improve their work:

Without technology, most of the current jobs would be ineffective and, at the same time, thanks to technology, I can do all my tasks without unnecessary waste of time. Just think of what it meant to make an account 100 years ago. Technology, smartphones, and fast communication allow us to do great things. (Respondent #14, example of positive attitudes toward technology)

This positive approach refers both to the performance of work activities ("*e-mails, for example, make communication effective and eliminate barriers and distances typical of our bureaucracies*", Respondent #17), and to the place where these are implemented ("*I can practice smart working on certain days of the month and for me it is a very pleasant way of working*", Respondent #24).

On the other hand, others prefer the "traditional" work that does not include technology, showing negative attitudes toward it:

Our life has been destroyed by technologies: we are always connected, there is no privacy, we are increasingly dependent on the smartphone and we do not even realize this problem. (Respondent #6, example of negative attitudes toward technology)

The world was better when technology did not exist, starting from relationships to lifestyle. (Respondent #12, example of negative attitudes toward technology)

Although the latter do not present particularly relevant results from the point of view of job crafting, interestingly those who show a positive attitude towards technology are also those who modify their work proactively. In line with the job crafting literature, findings indicate that workers were motivated to craft their job by the desire to increase the resources and relations at their disposal, to introduce new challenges to work activities that were considered as too "boring", and to seek improving the external prestige of their work that was particularly denigrated in recent years. Indeed, workers claimed to change the characteristics of their work thanks to technological tools according to approaches that are reminiscent of job crafting and it is interesting to note that almost every respondent talks about two main tools, namely social media and smartphones, in crafting his/her job:

Thanks to technology I am able to carry out activities other than traditional ones (...), for example I have set up a data archive that had never been put in order (...). Technology is also useful as it allows me to avoid many superfluous activities and sometimes with my smartphone I monitor the progress of tasks. (Respondent #27, example of task crafting)

I think technology is fundamental (...), for example I can use the smartphone at any time of my day to interface with colleagues and experts and thus I can improve my work performance (...). I also use Facebook to follow groups of colleagues, take a cue, and answer questions. (Respondent #10, example of relational crafting)

Citizens must be aware of the work we do (...). I often share my experiences and activities on social networks in order to make everyone participate in my work and feel myself even more appreciated. (Respondent #21, example of cognitive crafting)

The positive attitudes toward technology, therefore, could prove to be an antecedent of job crafting as the actors who show this cognitive and behavioral predisposition

proactively modify the characteristics of their work to make it more stimulating and motivating. Moreover, since they are reported in almost all the interviews, smartphones, as a technological tool, and social media, as a virtual "place", appear relevant in this possible linear relationship and could represent mediating variables capable of explaining the previous relationship and ensure a greater understanding of the phenomenon. On the contrary, respondents who showed a negative attitude toward technology or who did not express themselves in this regard were found to be less proactive and not actively committed to changing the characteristics of their activities, relationships, and cognitive perception.

5 Discussion

The aim of the present study was to examine the relationship between the attitudes toward technology and job crafting. Using a qualitative method approach and laying the foundation for a quantitative validation, our results suggest the presence of a linear relationship, perhaps mediated by smartphone usage and general social media usage.

Our work offers several contributions to theory and research. First, we address the call from Zhang and Parker [64] and Niessen and colleagues [14] to provide new insight on both the antecedents of job crafting beyond individual dispositions and on cognitive crafting, a dimension that has been little examined in the job crafting literature. A study of all the components of job crafting, therefore including cognitive job crafting, helps investigate the behavioral dynamics that lead to a shift in work meaning, work identity, and emotions [65]. Moreover, in line with prior studies that have shown job crafting to be a contextually embedded phenomenon [64], we have demonstrated that individuals' attitudes represent significant drivers of the entire job crafting process. More specifically, we demonstrated that the workers who have a positive attitude towards technology are the same workers who reinvent themselves to modify their job and make it more pleasant. The positive attitudes toward technology translates into flexibility, critical spirit, creative dissonance that feeds on diversity to create a new amalgam that favours a richer decision-making process and therefore better work performance. This insight can open up new avenues in research on antecedents of job crafting, as it is possible that the personal characteristics of individuals play a critical role in the changing process that has not yet been fully investigated.

Second, by integrating digitalization and ICT into job crafting literature, we have demonstrated that the new organization of work and the new working practices evolve hand in hand with workers' trends and behaviors. Lazazzara and colleagues [12] had identified this literature gap, but no study had gone so far in investigating these dynamics. Interestingly, smartphones and social media have been shown to be critical tools and virtual places for practicing job crafting and some studies had already foreseen this future trend. An example is characterized by locational crafting, which has been defined as the possibility for an individual to carry out one's work tasks in different locations [10, 66]. This is also in line with the definition of "challenging job demands" giving the opportunity to stimulate employees, to reach more difficult goals, and to develop skills and knowledge by creating a more challenging work environment [3, 15], for example by actively pursuing new opportunities (creating a new project) and opening up to new developments and changes (being the first to work with a new tool) [30].

Furthermore, the study of job crafting in a prescribed work context such as that of the public sector is also an interesting contribution for literature. Identifying a "stable" work as a sample, from the point of view of its characteristics and duration over time, is undoubtedly a rigorous way of doing research because it allows not to suffer distortions due to improper contextual factors.

5.1 Practical Implications

Practically, this study suggests that a positive attitude toward technology makes workers more motivated and satisfied, so managers should increase their performance and well-being by facilitating job crafting behaviors and helping them developing digital skills, knowledge, and competencies needed to expand their tasks. Managers in fact play a critical role in motivating individuals to undertake proactive behaviors by supporting initiatives and experimentation [67] or assisting them in pursuing their unanswered callings [23]. It could be also useful providing opportunities to participate in job crafting interventions and sharing "what works" could be the kick-off toward improving healthcare [18].

Furthermore, it has been shown that social support and organizational culture, also through appropriate and innovative solutions with employees [66], are decisive for the implementation of job crafting, so leaving more autonomy to workers could generate positive consequences for the organization from the individual [68] and collective [69] points of view.

Finally, but it is more appropriate to discuss this in the following paragraph about future research, given the possibility of distraction and distorted uses of technology [70, 71], managers should pay close attention to these behavioral practices to ensure that they are in line with business objectives. When an individual perceives supportive personal factors (e.g., increased self-confidence), approach crafting is associated with positive experiences, such as meaningfulness, esteem-enhanced occupational identity, and job satisfaction [72–74]; on the contrary, constraining personal/contextual factors along the job crafting process means that even job crafting may result in negative experiences [66, 74, 75] or that people do avoidance crafting [12], i.e. limiting positive behaviors and refraining.

5.2 Limitations and Future Research

This study has several limitations. First of all, it is a qualitative pilot study which draws inspiration and formulation of the hypotheses from an exploratory and semistructured investigation, so that the results may appear to be partial and not theory-founded. Although there is a strong methodological rigor, it is indeed important to proceed with the quantitative investigation by developing the hypotheses and further deepening the concepts emerged in this first phase. Moreover, this study focuses on one of the aspects of technology, which refers to workers' attitudes, but does not deepen all its facets, for different reasons. Through an analysis of the attitudes it is indeed possible to investigate the behavioral predispositions of individuals, but surely some issues related to the digitization of work remain undervalued, therefore it is important for future research to deal with these topics. Furthermore, future research may measure the consequences

of job crafting in terms of technology and digitalization, also by not excluding any of the three components of job crafting to avoid partial studies. Finally, since the literature to date has mainly focused on the positive outcomes, not considering the dysfunctional consequences – such as the frustration resulting from not being able to meet proactive goals generates negative experiences [73, 74] or the shift towards an interest in crafting in other domains [10] – of job crafting [12, 16], studies on the subject should not overlook these aspects, especially when it comes to technology.

6 Conclusion

To the best of our knowledge, this study is the first to respond to recent calls in literature by investigating the effect of work digitalization and ICT on job crafting via the attitudes of public workers toward technology. Attitude represents an individual disposition toward performing a certain behavior and it is influenced by the perception of utility and ease of use. Through an inductive qualitative research with 28 interviews, it has been suggested the role of smartphone usage and general social media usage in this relationship. A subsequent quantitative analysis will try to give greater rigor to the present study, assuming a relationship with two mediators and thus enriching the literature on the antecedents of job crafting. Our work offers several contributions to theory and research, suggesting optimal behaviors and functioning within organizations arising from the positive traits and attitudes of individuals in an ICT's perspective.

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