

Transaction cost economics and the roles of national culture: a test of hypotheses based on Inglehart and Hofstede

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Abstract Transaction cost economics (TCE) is probably the most widely accepted theory on how firms can gain competitive advantage through efficient organization of their economic transactions. However, by focusing on the competitive environment in which companies operate, it abstracts from the cultural context in which governance decisions are made. We study the cultural boundedness of TCE using two seminal cultural theories: the political science/sociology framework of Inglehart and the management science framework of Hofstede. We use these theories to develop (main-effect) hypotheses about the cultural contexts in which TCE has higher predictive power as well as (interaction) hypotheses regarding particular cultural contexts that may inherently be more inclined than others to adopt certain non-market governance modes if the market “fails.” Hypotheses are tested using a meta-analysis on data collected from 128 studies from 12 countries on 3 continents, representing governance decisions of 60,926 companies. We find that TCE is a universal theory across all cultural contexts. This being said, we find that in societies low on power distance and in societies characterized by a strong emphasis on secular-rational and self-expression values, companies are more strongly guided in their governance decisions by economic, transaction-cost considerations than companies in societies high on power distance and in countries that are characterized by traditional and survival values. Further, TCE’s power to predict the specific type of non-market governance employed by the

firm is systematically moderated by the national culture in which the firm operates. The power of TCE for predicting hierarchical governance is higher in countries that rate high on secular-rational values and on uncertainty avoidance and low on long-term orientation, whereas TCE is more diagnostic for predicting relational governance in countries high on self-expression values and low on power distance and on uncertainty avoidance. In sum, our meta-analysis provides support for our thesis that to fully understand governance choices made by firms, we need to integrate TCE and cultural theory. While managers around the world are guided by economic considerations, the cultural context in which they operate exerts a substantial—and predictable—contingent effect on their governance choices.

Keywords Transaction cost analysis · Competition · International marketing · Culture · Hofstede’s theory · Inglehart’s theory · Meta-analysis · Governance decisions

Since the publication of Oliver Williamson’s 1975 classic, *Markets and Hierarchies*, transaction cost economics (TCE) has emerged as the most influential theory on how firms can gain competitive advantage through choosing the right governance mode to manage their economic transactions. In 2009, Williamson received the Nobel Prize in Economics for, in the words of the Nobel Prize committee: “his analysis of economic governance, especially the boundaries of the firm.”¹ According to TCE, “transactions, which differ in their attributes, are aligned with governance structures, which differ in their costs and competencies, in a discriminating (mainly, transaction cost economizing) way” (Williamson 1991, p. 277).

The central question of TCE is whether a transaction is more efficiently performed by autonomous contractors

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¹ http://nobelprize.org/nobel_prizes/economics/laureates/2009/press.html

through arm's length relationships (market governance) or by some kind of arrangement where the market has been (largely) eliminated (non-market governance). TCE assumes market governance as more efficient than non-market governance a priori, based on the benefits of competition. However, certain dimensions of transactions raise transaction costs and combine to create "market failure," making non-market governance more efficient than market governance. These dimensions are transaction-specific assets, uncertainty, and transaction frequency (Williamson 1975, 1985). TCE recognizes two different types of non-market governance, both of which confer competitive advantage to firms in case of market failure: hierarchical governance and relational governance. While hierarchical governance is based on enforcement by means of legitimate authority, relational governance is sustained by mechanisms of a non-judicial nature such as mutual dependence, trust, parallel expectations, joint action, and procedural fairness (Geyskens et al. 2006).

According to TCE, firms operate in competitive environments. Firms that behave according to the normative prescriptions of TCE will gain competitive advantage over their rivals and will ultimately drive their less efficient competitors out of the marketplace. In reality, firms operate in both competitive *and* cultural-institutional environments. This has given rise to a fundamental criticism levied against TCE, namely its failure to take into account the cultural-institutional environment in which the firm operates (e.g., Roberts and Greenwood 1997; Steensma et al. 2000).² Hierarchical and relational governance are obviously quite different non-market governance mechanisms, and cultural theory holds that organizational choices may be significantly moderated by the cultural arrangements of their country environments (Hofstede 2001; Schneider and Barsoux 2002).

The purpose of this study is to examine the effect of the national culture in which the firm operates on the explanatory power of TCE's normative prescriptions. We will integrate TCE and cultural theory to enhance our understanding of the impact of national culture on the power of TCE in predicting deviations from the "marketplace norm." We will use two seminal cultural theories—the dimensional frameworks proposed by the political scientist Inglehart (Inglehart 1990, 1997; Inglehart and Baker 2000; Inglehart and Welzel 2005) and the management scientist Hofstede (2001)—to develop hypotheses concerning national-cultural contexts in which TCE considerations per se have greater power to predict firm governance choices, as well as cultural contexts that favor hierarchical or relational solutions in case transaction costs create market failure. We test our hypotheses with a meta-

analysis of 128 studies from 12 countries on 3 continents, representing governance decisions of 60,926 companies.

We note two qualifications of our study upfront. First, our purpose is *not* to contrast these two cultural theories, but rather to examine whether we find systematic evidence for cultural effects on TCE across two major, comprehensive cultural theories. Second, it is *not* our intention to contrast the choice for hierarchical versus relational governance in case of market failure. To adequately address this question, we need studies that directly pit these two governance choices against each other. Few studies have done this, which precludes a meta-analytic investigation of this issue. Rather, our goal is to identify national-cultural contexts that favor hierarchical solutions in case transaction costs create market failure versus national-cultural contexts that do not favor hierarchical solutions. Similarly, we will identify national-cultural contexts that favor relational solutions in case of market failure versus those that do not.

Transaction cost economics

TCE and choice of governance mode

The original focus of TCE is on whether a transaction is more efficiently performed within the firm (vertical integration) or across independent entities (market governance). Transactors are assumed to be "boundedly rational," "risk neutral," and at least some actors are assumed to be "opportunistic." TCE assumes market governance as more efficient than vertical integration a priori, based on the benefits of competition. Transactions within integrated companies may be insulated from competitive pressure, subject to bureaucratic phenomena, and rendered unprofitable by administrative overhead. However, certain dimensions of transactions raise transaction costs and combine to create market failure, making vertical integration more efficient than market governance. These dimensions are transaction-specific assets, environmental uncertainty, and behavioral uncertainty (Williamson 1975, 1985).³

Transaction-specific assets are assets that are tailored to a particular transaction and cannot be easily redeployed outside the relationship. Their idiosyncratic nature gives

² Although TCE scholars have alluded to the significance of cultural-institutional influences, "they stop short of a full appreciation of the more sociological issues" (Roberts and Greenwood 1997, p. 351).

³ The complete transaction cost framework also includes transaction frequency, although this construct has received limited attention in the transaction cost literature. Transaction frequency refers to the extent to which transactions are of a recurring kind. Williamson (1985) argues that transaction frequency provides an incentive for firms to employ hierarchical governance because the overhead cost of hierarchical governance will be easier to recover for transactions of a recurring kind. Transaction frequency is not included in this meta-analysis due to a lack of research capturing Williamson's meaning of the construct. For example, several studies have treated frequency as being synonymous with the size of the business.

rise to a safeguarding problem, in the sense that market competition no longer serves as a restraint on opportunistic exploitation. The general response to the safeguarding problem identified in TCE is vertical integration. In contrast to markets, the authority relationships and control procedures available through vertical integration embody greater safeguarding capabilities.

The second dimension, *environmental uncertainty*, arises when relevant contingencies surrounding an exchange are too unpredictable to be specified *ex ante* in a contract. Two major types of environmental uncertainty have been distinguished: volume uncertainty and technological uncertainty (Walker and Weber 1984). *Volume uncertainty* is the inability to forecast accurately the volume requirements in the relationship. When volume uncertainty is high, suppliers experience unexpected production costs or excess capacity and buyers experience stock-outs or excess inventory. The primary consequence of volume uncertainty is an adaptation problem, that is, difficulties with adjusting agreements as events unfold. Since the firm should be able to coordinate variations in a hierarchically organized production stream more efficiently than variations with market suppliers, volume uncertainty should increase the likelihood of vertical integration over market governance.

Technological uncertainty is the inability to forecast accurately the technical requirements in the relationship. It may follow from unpredictable changes in the standards or specifications of the components or end product, or from general technological developments. Unlike volume uncertainty, which motivates vertical integration to facilitate adaptation, technological uncertainty is managed more efficiently through market governance. By using market governance, firms retain the flexibility to terminate relationships and switch to partners with more appropriate technological capabilities, and avoid being locked into a technology that may become obsolete.

The effect of the third transaction dimension, *behavioral uncertainty*, is a performance evaluation problem, i.e., difficulties in ascertaining *ex post* whether contractual compliance has taken place. According to TCE, the general response to the performance evaluation problem is vertical integration. The greater degree of control over partners' behaviors available through vertical integration embodies greater evaluation capabilities.

While TCE originally focused on vertical integration as solution to market failure, subsequent theoretical extensions have shown that the benefits of vertical integration stem not from ownership or integration per se, but rather from the ability to exercise decision control. As argued by Stinchcombe (1985, p. 165), the ability to govern by means of authority is not limited to intrafirm settings, but it can also be achieved between firms by means of extensive contractual provisions,

which essentially “produce the effects of hierarchies.” Therefore, we define hierarchical governance as being based explicitly on enforcement by means of legitimate authority, either through an employment relation (i.e., vertical integration) or a detailed contractual arrangement that provides decision-making authority in certain areas.

Originally, TCE focused on the dichotomy between market and hierarchical governance. However, researchers have argued that TCE overstates the desirability of integration or explicit contractual safeguards to protect against transaction hazards (Poppo and Zenger 2002). This view recognizes that in many industries managers engage in collaborative exchanges (Dyer 1997). That is, relational governance may be a viable alternative to hierarchy when the market fails. This development has motivated transaction cost scholars to incorporate relational governance modes into TCE's classic explanatory framework (Williamson 1991).

Relational governance modes are usually open-ended relationships, with no finite or foreseeable termination points. The mechanisms through which relational governance mitigates exchange hazards are both economic and sociological in nature. Economists emphasize the rational, calculative origins of relational governance, emphasizing expectations of payoffs from future cooperative behavior that prompt cooperation in the present (Axelrod 1984). In this view, if trust arises it is carefully calculated. Sociologists emphasize shared values and affective feelings that emerge from a history of trustworthy interactions (Uzzi 1997). Despite differences, both economists and sociologists argue that repeated exchange provides information about the cooperative behavior of exchange partners that may allow for informed choice of who (not) to “trust” (Poppo and Zenger 2002). In addition, both argue that relational governance operates as a self-enforcing safeguard; the value of the future relationship is sufficiently large so that neither party wishes to renege (Telser 1980).

TCE and firm performance

Driven by competitive pressures, firms search for and adopt the governance mode that is the most efficient alternative given their circumstances. As Williamson and Ouchi (1981, p. 355) argue: “unrealized efficiency opportunities always offer an incentive to reorganize.” Firms that follow TCE's prescriptions and align organizational form with transaction dimensions will economize on transaction costs, which in turn should translate into superior competitive performance relative to those who do not (Williamson 1985). Firms that do not adopt the governance mode that is efficiency-maximizing underperform and, ultimately, do not survive.

This position is not without its critics. In an influential article, Ghoshal and Moran (1996) have expressed substantial skepticism about the normative implications of TCE because of its strong self-fulfilling assumptions. For example, the assumption of opportunism can become a self-fulfilling prophecy whereby opportunistic behavior will increase when hierarchical controls are imposed. Dyer (1997) has criticized TCE's exclusive focus on minimizing transaction costs as an efficiency criterion as governance may also influence transaction value.

Empirical research on TCE

In sum, when the dimensions of transactions raise transaction costs and combine to create market failure, TCE postulates that firms gain competitive advantage by opting for non-market governance, for which two broad options are available—hierarchical governance and relational governance. But what is the empirical evidence for these fundamental tenets of TCE? Is there evidence that the TCE dimensions systematically and predictably affect the choice between market and non-market governance? Moreover, does following TCE's prescriptions matter? Do firms that base their decisions on TCE's normative prescriptions exhibit superior performance? It turns out that the answer to these questions is a resounding yes.

The past 30 years have witnessed a veritable explosion of research on various aspects of TCE. A narrative review of the transaction cost literature across multiple social science disciplines identified hundreds of articles that investigate some aspect of transaction cost theory (Boerner and Macher 2002). David and Han (2004) performed a meta-analysis on previous research, using the vote-counting method, tabulating significant and nonsignificant findings. This meta-analysis was broadly supportive of TCE. Recently, Geyskens et al. (2006) conducted a large scale, psychometric meta-analysis on previous TCE research. The purpose of their study was to comprehensively test TCE's key predictions and derive quantitative estimates of the effects, corrected for a host of statistical artifacts (see Geyskens et al. 2009 for a review). Their meta-analysis was based on 200 studies containing 209 independent samples for a total sample size of 91,006 firms.

Geyskens et al. (2006) found that as transaction-specific assets ($\beta=.19$), volume uncertainty ($\beta=.07$), or behavioral uncertainty ($\beta=.13$) increase, and technological uncertainty ($\beta=-.14$) decreases, firms increasingly opt for hierarchical governance instead of market governance. Further, as transaction-specific assets increase ($\beta=.29$), relational governance becomes preferred over market governance. Finally, as volume uncertainty ($\beta=-.24$), technological uncertainty ($\beta=-.14$), and behavioral uncer-

tainty ($\beta=-.05$) increase, market governance becomes preferred over relational governance. All these effects were statistically significant.

In their meta-analysis, Geyskens et al. (2006) also examined whether following the normative prescriptions of TCE contributes to superior firm performance. This is indeed the case. The coefficient estimates for the governance choice–performance relationship were positive and highly significant, for both hierarchical ($\beta=.10$, $p<.01$) and relational governance ($\beta=.44$, $p<.01$), which indicates that choosing hierarchical or relational governance in response to transaction hazards increases performance. In sum, these results show strong support for the prescriptions of TCE; following TCE's normative directions is associated with superior firm performance.

The cultural boundedness of non-market governance modes

While an extensive body of empirical research provides compelling support for TCE's predictive power in deciding between market and non-market governance, the fact that TCE's predictive power may be contingent on the cultural-institutional environment in which the firm operates has been underexposed. We posit that TCE is more diagnostic in predicting governance choices in some cultures than in other cultures, and further that it is more predictive of the choice for hierarchical (relational) governance in certain national-cultural contexts than in others, when the transaction dimensions combine to create market failure. Our view is based on the notion that managerial decision making is affected by the cultural context in which managers operate. This view is widely shared by cultural theorists (Hofstede 2001; Roberts and Greenwood 1997; Schneider and Barsoux 2002). Hofstede (1994, p. 4) put it as follows: “the culture of the human environment in which an organization operates affects the management processes.” Relatedly, Roberts and Greenwood (1997, p. 361) maintained that “[firms] face pressures to adopt designs that are within the subset of socio-politically legitimated designs.”

Cultural theory emphasizes that the prevailing culture of a society serves as a constraint to regulate economic activities by providing the written and unwritten rules of the game (cf. Peng and Heath 1996). National-cultural priorities reflect the basic issues and problems that societies must confront in order to regulate human activity. The shared cultural priorities in society help to shape the social and economic reward contingencies to which organizations and their managers must adapt in order to function smoothly and effectively (Smith and Schwartz 1997). National-cultural priorities will encourage the activation of

organizational choices that are in line with these priorities and conducive in maintaining them, while organizational choices that run counter to these cultural priorities are discouraged (Hofstede 2001).

Several cultural theories have been proposed in the literature that can help us understand which governance response to market failure may be culturally more “legitimate” in a particular country (see Vinken et al. (2004) for an excellent overview). Two of the most influential cultural theorists are the management scientist Hofstede (2001) and the political scientist Inglehart (1990, 1997; Inglehart and Welzel 2005). While Hofstede’s work is dominant in marketing, Inglehart’s work has been very influential in political science and sociology. The theoretical foundation of Hofstede’s work is in micro-processes of socialization, while Inglehart’s theory is grounded in macro-processes of modernization and industrialization. Table 1 compares the two theories on several relevant aspects, while Table 2 shows the correlations between the various cultural dimensions within and across the two theories. Both theories have strengths and weaknesses. To obtain more robust insights into the role culture plays in governance choices of firms, we will therefore consider both Inglehart’s theory and Hofstede’s theory. Given that Inglehart’s work has not been widely applied in marketing yet (see Steenkamp and de

Jong (2010) for an exception), we will first provide a summary description of Inglehart’s work, before turning to developing research hypotheses.

Inglehart’s theory of cultural change

Table 3 provides a summary overview of Inglehart’s theory of cultural change. The central claim of Inglehart’s theory is that a country’s level of socioeconomic development is linked with coherent, and to some extent predictable, changes in society. Socioeconomic development affects people’s existential conditions and their chances of survival. It starts from technological innovations that increase labor productivity. This brings occupational specialization, rising educational levels, and rising income levels. It diversifies human interaction, shifting the emphasis from authority relations toward egalitarian relations, and in the long run leads to cultural changes (Inglehart and Welzel 2005, p. 19). According to Inglehart, the impact of socioeconomic development on cultural changes in society operates in two sequential phases.

In the first phase, industrialization gives rise to the first major process of change: the bureaucratization, centralization, rationalization, and secularization of society. This change in society is associated with a shift from *traditional*

Table 1 Contrasting the cultural frameworks of Inglehart and Hofstede

	Inglehart	Hofstede
Primary theoretical source	Modernization theory, especially socioeconomic development and (post) industrialization theory	Socialization theory, institutional theory
Conceptual basis of the dimensions	Political, social, and religious norms and beliefs	Work-related values
Empirical derivation of the dimensions	Factor analysis of individual-level scores on survey items	Factor analysis of aggregate (country-level) scores on survey items
Content of the dimensions	Survival/Self-expression Traditional/Secular-rational	Individualism/Collectivism (I/C) Power distance (PD) Uncertainty avoidance (UA) Masculinity/Femininity (M/F) Short/Long-term orientation (STO/LTO)
Polarity of the dimensions	Dimensions with contrasting poles	Unipolar dimensions (PD, UA) mixed with bipolar dimensions (I/C, M/F, STO/LTO)
Interrelations between the dimensions	Dimensions are orthogonal	Dimensions are correlated; especially I/C and PD are highly negatively correlated
View on temporal stability of culture	Culture is temporally dynamic and changes along a largely predictable path, derived from Inglehart’s modernization theory	Culture is highly stable over time
Empirical basis for country scores	Representative samples of respondents; first wave of data collection in 1981, with subsequent waves each 5 years	Initial data collection conducted among IBM personnel in 1967–1973 for all dimensions except STO/LTO; other countries and STO/LTO added later
Primary application domain	Sociology, political science	Management
Seminal source	Inglehart and Welzel (2005)	Hofstede (2001)

Table 2 Correlations between Inglehart’s and Hofstede’s cultural dimensions

	1.	2.	3.	4.	5.	6.	7.
Inglehart’s cultural dimensions							
1. Secular-rational	1.000						
2. Self-expression	.050 (98)	1.000					
Hofstede’s cultural dimensions							
3. Power distance	-.306 (63)	-.638 (63)	1.000				
4. Uncertainty avoidance	-.065 (63)	-.228 (63)	.224 (71)	1.000 (71)			
5. Masculinity	.027 (63)	-.003 (63)	.008 (71)	-.155 (71)	1.000 (71)		
6. Individualism	.360 (63)	.622 (63)	-.616 (71)	-.215 (71)	.205 (71)	1.000	
7. Long-term orientation	.401 (35)	-.449 (35)	.229 (37)	-.138 (37)	.052 (37)	-.373 (37)	1.000

Reported are correlations using pairwise deletion as the set of countries included differs between Inglehart and Hofstede. The values between brackets denote the number of countries on which the correlations are based. Correlations involving Inglehart’s cultural dimensions were calculated after averaging the Inglehart scores for a country across all available waves of data collection for that country. The small number of observations for long-term orientation is due to the fact that this dimension was added later by Hofstede.

cultural values to *secular-rational* cultural values. The subsequent rise of postindustrial societies leads to a second major process of change: the centralizing and bureaucratic influences decline and are increasingly superseded by an emphasis on individual autonomy and self-expression. This change in society is associated with a shift from *survival* cultural values to *self-expression* cultural values.

Thus, according to Inglehart, socioeconomic development gives rise to two major dimensions of cross-cultural variation, one linked with industrialization (the *traditional/secular-*

rational dimension) and the other linked with postindustrialization (the *survival/self-expression* dimension).

Industrialization and the emergence of secular-rational cultural values

Sustained economic growth starts with industrialization as labor productivity begins to outpace population growth. The shift from preindustrial to industrial society brings fundamental changes in people’s outlook on life. While

Table 3 The impact of the industrial and postindustrial phases of modernization on cultural values

Industrialization Phase		Postindustrialization Phase	
↓ Intensifying exploitation of natural resources	↓ Regimented organization of human activities	↓ Continuing exploitation of nature increases ecological risks	↓ Individualized organization of human activities
↓ Sense of technological control over natural forces	↓ Weak sense of individual autonomy in society	↓ Revival of spiritual concerns about the protection of Creation	↓ Sense of individual autonomy in society
↓ Massively growing emphasis on secular-rational values	↓ Little or no change in emphasis on self-expression values	↓ Stagnant or even declining emphasis on secular-rational values	↓ Massively growing emphasis on self-expression values

Adapted from Inglehart and Welzel (2005, p. 30)

preindustrial life was a “game against nature,” industrial life is a “game against fabricated nature” (Inglehart and Welzel 2005, p. 26). Life in industrial societies is dominated by standardized production in rationally organized, hierarchical organizations, such as steel mills, cotton mills, and assembly lines. The production systems of industrial societies have also been labeled “Fordism,” named after the pioneer of assembly line production, Henry Ford. Fordism is “a model of economic expansion and technological progress based on mass production: the manufacture of standardized products in huge volumes using special purpose machinery and unskilled labor” (Tolliday and Zeitlin 1987, pp. 1–2).

Industrial societies are characterized by a strong belief in scientific progress. As physical and economic insecurity decrease and scientific/technological control of the environment and society increase, cultural values shift from traditional values toward secular-rational values. Important for the purposes of the present paper, with the rise of secular-rational values, the basis of authority increasingly shifts from traditional (religion-based) sources to secular-rational (bureaucratic) sources.

However, the rigidly hierarchical and regimented way in which industrial society is organized does not lead to an appreciable increase in people’s sense of individual autonomy. In fact, individual autonomy may even decline as the bureaucratic organizations of industrial societies (government, labor unions, companies) are often more effective in controlling the life of people than the older, less effective traditional organizations were able to do. Consequently, industrialization of society contributes little to the rise of self-expression values (Inglehart and Welzel 2005).

Individual autonomy is further undercut by the emergence of “scientific management” (also called “Taylorism,” after its founder, Frederick W. Taylor). Taylor believed that decisions based upon “unscientific” tradition and rules of thumb should be replaced by precise standardized and meticulously described procedures developed after careful study of an individual at work, using time and motion studies. According to Taylor, there was no industry or job that was not amenable to the principles of scientific management. The power of scientific management was demonstrated in a dramatic way by applying it to bricklaying. If humans are able to perfect production processes without applying the principles of scientific management, bricklaying should be a prime example. After all, the craft of bricklaying is thousands of years old, with ample time to perfect the process. However, nothing could be farther from the truth. It was shown that application of the principles of scientific management to bricklaying resulted in a reduction of the movements of the bricklayer from 18 to 5 and an increase in output from 120 to 250 bricks per hour (Fillel et al. 1976).

Postindustrialization and the emergence of self-expression cultural values

In the last decades, we are witnessing a second development—the rise of the postindustrial society. This brings about another wave of cultural change, this time in the direction of self-expression values. At the same time, the growth in secular-rational values slows and may even decline (Table 3). A crucial factor underlying the emergence of postindustrial societies is a shift in economic activity from standardized, highly regimented manufacturing processes—which require (and allow) very little autonomous judgment—to the production of knowledge, ideas, and information, all of which require considerable individual autonomy. Human creativity becomes a key production factor, and creativity typically does not thrive in hierarchical, regimented structures. Rather, “postindustrialization gives people a sense of human autonomy that leads them to question authority, dogmatism, and *hierarchies*, whether religious or secular” (Inglehart and Welzel 2005, p. 29; emphasis added).

Self-expression values also have an effect on the design of production processes. The emerging new production systems have been called “post-Fordism” (Kiely 1998). Since post-Fordism is still evolving, the precise characteristics of post-Fordism are a matter of debate among scholars, and there is no counterpart to scientific management yet. However, there is widespread agreement that post-Fordism is characterized by a profound shift from manual workers to knowledge workers, from production in integrated firms to production in networks of independent firms, and from vertically integrated, in-firm production to outsourcing to specialist providers all activities in which the firm does not have a competitive advantage (Amin 1994).

Since the tasks of knowledge workers are less clearly defined than the regimented tasks of manual workers in the industrialization phase, the responsibility for their productivity rests on the individual knowledge workers themselves. In the words of Drucker (1999, p. 84): “Knowledge workers *have* to manage themselves. They have to have *autonomy*” (emphasis in the original). Network production means that hierarchical governance mechanisms are less effective. While the literature distinguishes different types of networks (Miles et al. 2010; Snow et al. 1992) and there will often be power asymmetry between the “central firm” and the other firms (Kumar et al. 1995, 1998), by their very nature network production systems have to rely much more on “soft” coordination mechanisms like trust, commitment, and shared interests than on hierarchical production systems.

Toyota is an early example of a network production system. Under the Toyota system, most manufactured inputs are not produced by the end producer but by formally independent supplier firms (Kiely 1998). Toyota built long-term supply and subcontracting networks, in

sharp contrast to the vertically integrated Fordist U.S. corporations. But perhaps the best contemporary example of post-Fordism is Apple. Apple's strategic vision is to be a hub in the global entertainment ecosystem (Yoffie and Kim 2011). It outsources the production of most of its hardware (while retaining control over hardware design) as well as most of the software (through the app store which currently has over half a million applications and counting).

To summarize, the shift from traditional to secular-rational values linked with industrialization brings a secularization of authority, while the shift from survival to self-expression values linked with postindustrialization brings emancipation from authority (Inglehart and Welzel 2005, p. 29).

Implications of Inglehart's theory for TCE's predictive power

We will first use Inglehart's theory to develop main-effect hypotheses regarding the cultural contexts in which TCE has higher predictive power. Next, we develop interaction hypotheses regarding particular cultural contexts that may inherently be more inclined than others to adopt certain non-market governance modes if the market "fails."

Main-effect hypotheses TCE does not take local traditions and ways of doing business into account. It emphasizes that the choice between market and non-market governance should not be based on tradition but on "rational" criteria of cost minimization. This business philosophy is likely to appeal less to traditional societies, i.e., societies that are high on traditional (versus secular-rational) values and high on survival (versus self-expression) values. In these societies, business is more governed by communal values (Inglehart and Welzel 2005). Thus, we expect that the predictive power of TCE is lower in societies that rate low on secular-rational values and in societies that rate low on self-expression values.

H1a: The power of the transaction dimensions for predicting governance modes is lower in countries that rate low on secular-rational values than in countries that rate high on secular-rational values.

H1b: The power of the transaction dimensions for predicting governance modes is lower in countries that rate low on self-expression values than in countries that rate high on self-expression values.

Interaction hypotheses Hypothesis 1 posits a main effect of culture on the predictive power of TCE. Inglehart's theory is also diagnostic in predicting why particular cultural contexts may inherently be more inclined than others to adopt a particular non-market governance mode if the market "fails."

Figure 1 summarizes our theorizing by relating Inglehart's path-dependent theory of cultural values and concomitant shifts in authority described above to shifts in preferences for firms' non-market governance modes.

Industrialization gives rise to increased emphasis on secular-rational values, and it lends cultural legitimacy to rational, hierarchical authority in secular organizations. This suggests that in societies that are high on secular-rational values, hierarchical governance will be a culturally accepted solution in case of market failure or, in the words of Roberts and Greenwood (1997, p. 361), a "legitimated design." The value structure in these societies is more congruent with hierarchical governance—with its clear (secular) lines of authority—than with relational governance, in which the formal authority mechanisms are largely absent.

Further, in industrial societies, there is a distinct tendency to equate "Biggest with Best" (Inglehart 1997, p. 77). Hierarchical integration fits this philosophy as it creates a larger organization, while relational governance does not. A good illustration of this philosophy is the Ford Motor Company in its early days, when the U.S. was in the industrialization phase. Ford had its own coal mines, iron ore mines, and steel and paper mills. Ford's sprawling River Rouge automobile plant was the world's first vertically integrated factory complex. The River Rouge plant embodied Ford's vision of a manufacturing facility that would transform raw materials into completely finished products.⁴ Thus, we can expect that in case of market failure, the higher a country scores on the secular-rational dimension, the more diagnostic TCE is in predicting the choice of hierarchical governance. There is no theoretical reason to expect that relational governance is favored more in low or high secular-rational societies as neither low nor high levels on this dimension are pertinent to relational governance.

H2: The power of the transaction dimensions in predicting hierarchical governance increases with the emphasis the country places on secular-rational values.

Postindustrialization gives rise to increased emphasis on self-expression values and de-emphasis of authority. This suggests that hierarchical governance, with its reliance on formal authority, is less congruent with the prevailing value emphasis in postindustrial societies. On the other hand, relational governance is likely to appeal to postindustrial societies. It is sustained by mechanisms of a non-hierarchical nature such as mutual dependence, trust, parallel expectations, joint action, and procedural fairness (Bradach and Eccles 1989). Further, in postindustrial societies, centralization and the idea of "Bigger is Best" are under growing suspicion, and the declining emphasis on

⁴ <http://www.fundinguniverse.com/company-histories/Rouge-Steel-Company-Company-History.html>

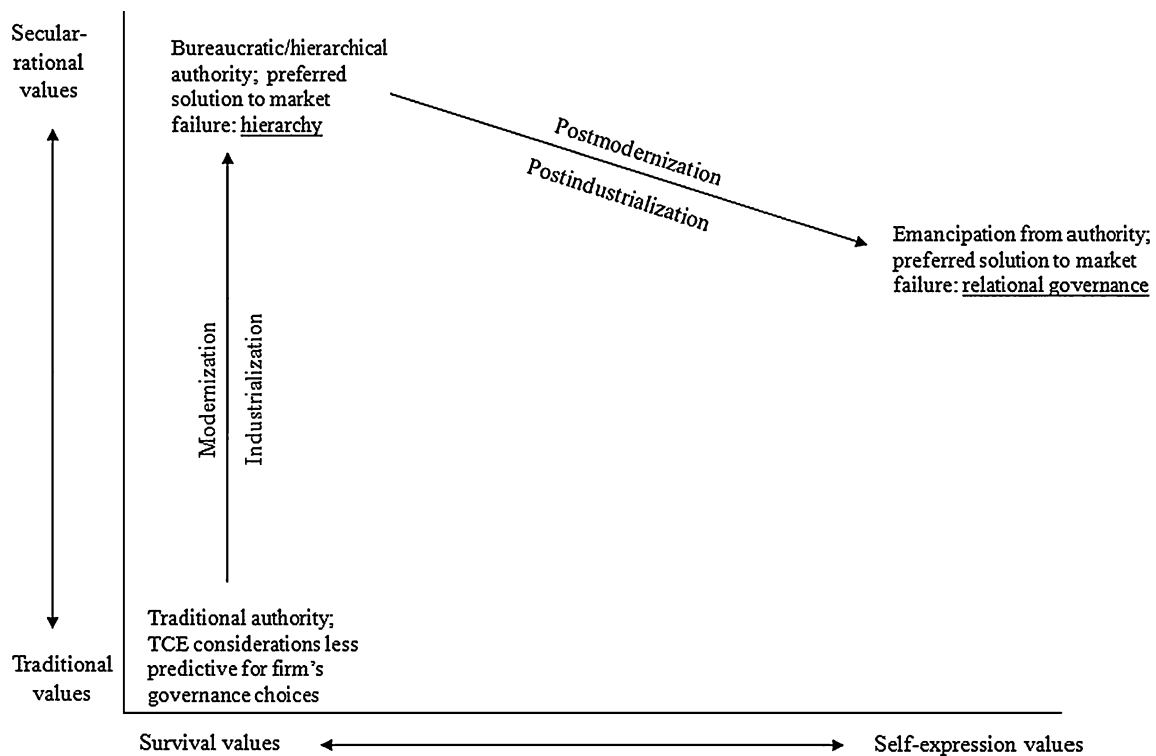


Fig. 1 Industrialization, postindustrialization, and change in cultural values: the effect on non-market governance

authority “leads to declining confidence in *hierarchical* institutions” (Inglehart 1997, p. 79; emphasis added). Consequently, the higher a country scores on self-expression values, the more (less) diagnostic TCE is in predicting the choice of relational (hierarchical) governance if TCE considerations call for a deviation from the “norm of the market.” Therefore, we hypothesize:

H3: The power of the transaction dimensions in predicting relational governance increases with the emphasis the country places on self-expression values, while the power of TCE in predicting hierarchical governance decreases.

Implications of Hofstede’s theory for TCE’s predictive power

Hofstede (2001) distinguishes five universal dimensions of cultural variation: power distance, uncertainty avoidance, masculinity/femininity, short/long-term orientation, and individualism/collectivism. We will develop hypotheses for the first four dimensions. Since power distance and individualism are highly correlated (Table 2), including both dimensions in the same model leads to unstable parameter estimates. We focus on power distance rather than on individualism since power distance, as a measure of the extent to which hierarchy is culturally accepted in a society, is more directly relevant for understanding preferences for governance solutions.

Main-effect hypotheses Inglehart’s theory suggests that as societies move away from tradition and communal values, the normative, economic criteria of cost minimization underlying TCE will become more pertinent in decision making. Hofstede’s power-distance dimension also taps into this. Hofstede (2001, p. 93) maintains that high power-distance societies favor traditional authority and emphasize conformity to prevailing traditional norms and doing what is socially correct. This closely resembles the traditional societies in Fig. 1.

Long-term orientation captures the extent to which people have a future-oriented, long-term perspective rather than a focus on the present and short-term results (Hofstede and Bond 1988). Although there is little direct evidence, it appears plausible that market-based governance, which by nature is short-term as managers can change exchange partners in the short-run, appeals more to cultures that rate high on short-term orientation, even when TCE considerations point to non-market governance. Conversely, non-market governance, which requires a commitment for a longer time, may be inherently more acceptable to long-term oriented cultures in case of market failure.⁵ Thus:

H4a: The power of the transaction dimensions for predicting governance modes is lower in countries

⁵ For uncertainty avoidance and masculinity, no main effects were hypothesized. However, they will be included in our empirical analysis.

that rate high on power distance than in countries that rate low on power distance.

H4b: The power of the transaction dimensions for predicting governance modes is lower in countries that rate low on long-term orientation than in countries that rate high on long-term orientation.

Interaction hypotheses In high power-distance societies, the unequal distribution of power, roles, and resources is seen as legitimate. Superiors display their power and exercise it, whereas subordinates wait for their superiors to show their status and power and are uncomfortable if they do not personally experience it. In contrast, in low power-distance societies, managers of different levels see themselves as relatively equal. Since managers of firms in high power distance countries tend to be more autocratic, they have a natural inclination to use hierarchical governance. In contrast, relational governance is likely to appeal more to low power-distance cultures, as managers of firms in low power-distance cultures are more willing to share decision making with others (Erramilli 1996). Consequently, we expect that if the firm decides to opt for non-market governance in case of market failure, in high (low) power-distance cultures, firms will have a relatively greater inclination to opt for hierarchical (relational) governance.

H5: The power of the transaction dimensions in predicting hierarchical governance increases with the power distance of a country, while the power of TCE in predicting relational governance decreases.

Uncertainty avoidance is the extent to which the members of a culture feel threatened by uncertain or unknown situations. Societies anxious over the future, actively avoiding risk, and devising means to create a sense of control have high uncertainty avoidance. Given the important role assumed by uncertainty in TCE, the cultural value of uncertainty avoidance is particularly relevant in this respect. Williamson (1991) argued that relational governance does not address uncertainty effectively, since relational adaptations (as opposed to hierarchical adaptations) cannot be made unilaterally, but require mutual consent. Building consent takes time, which may be in short supply in uncertain environments (Geyskens et al. 2006). Firms from societies that tend to avoid uncertainty will have a stronger positive reaction to hierarchical governance and the assurance (in terms of reduced uncertainty) it offers. In contrast, in societies with a high tolerance for uncertainty, TCE is more diagnostic in predicting the choice for relational governance than in societies that tend to avoid uncertainty.

H6: The power of the transaction dimensions in predicting hierarchical governance increases with the uncertainty avoidance of a country, while the power of TCE in predicting relational governance decreases.

Masculinity is defined as the degree to which a society is characterized by ego enhancement, toughness, and competitiveness. In contrast, feminine cultures are concerned with relationship quality, equality, and mutual solidarity. The manager in a feminine culture is accustomed to seeking consensus and prefers cooperative ventures (Hofstede 2001). Consequently, countries high on femininity can be expected to have a more favorable reaction to relational governance in the case of market failure than countries high on masculinity. In contrast, countries high on masculinity have more affinity with the centralization of authority that hierarchical governance brings than do countries high on femininity.

H7: The power of the transaction dimensions in predicting hierarchical governance increases with the masculinity of a country, while the power of TCE in predicting relational governance decreases.

Societies with low long-term orientation have a sense of urgency and favor quick results, whereas societies characterized by high long-term orientation have a long-term view and tend to be more oriented toward building up a relationship with the partner (Barkema and Vermeulen 1997). Building relational governance takes a lot of time and effort. Essential coordinating mechanisms like satisfaction, trust, and commitment are built over a long series of business interactions, and they require a long-term orientation to be successful (Geyskens et al. 1998, 1999; Gu et al. 2008). On the other hand, hierarchical governance can be established much faster as the coordinating mechanisms are legal and coercive rather than cooperative. Thus, we can expect that in case of market failure the higher (lower) a country scores on long-term orientation, the more diagnostic TCE is in predicting the choice of relational (hierarchical) governance.

H8: The power of the transaction dimensions in predicting relational governance increases with the long-term orientation of a country, while the power of TCE in predicting hierarchical governance decreases.

Method

Data

We test our hypotheses using the meta-analytic dataset collected by Geyskens et al. (2006). These authors did not study the effect of the cultural context on the predictive

power of TCE. We refer to their article for details on the procedures used to retrieve study results. We used several decision rules to determine the studies that should be retained for the purposes of the present meta-analysis. First, a study had to report on one or more relationships between governance choice (the choice between hierarchical and market governance and/or the choice between relational and market governance) and transaction-specific assets, volume uncertainty, technological uncertainty, or behavioral uncertainty. Second, a study had to report on sample sizes along with an outcome statistic (e.g., r , univariate F , t , χ^2) that allowed the computation of a correlation coefficient using the formulas provided by Hunter and Schmidt (1990, p. 272). Third, a study had to identify the home country of the firm taking the governance decision. Samples of firms from all over the world or from all over Europe were not retained.

We read each article in the final set and extracted data on the variables of interest, including outcome statistics, sample sizes, statistical artifacts, and the home country of the firms taking the governance decisions. All harvested correlations were categorized on the basis of the construct operationalizations. We corrected the data for non-independence and outliers, using the procedures described in Geyskens et al. (2009).

Our meta-analytic dataset consists of 211 correlations from 128 studies containing 138 independent samples and representing governance decisions of 60,926 companies. The U.S. accounts for 98 samples (71.0%), Europe for 19 (13.8%), Asia for 11 (8.0%), and Canada for 10 (7.2%). The U.S. dominance is not surprising as TCE was originally developed in the U.S.

Variables

Dependent variable Using the sequence of steps and techniques outlined by Geyskens et al. (2009), we corrected all retrieved correlation coefficients (r) between governance choice and a transaction dimension for the biasing influence of seven statistical artifacts: (1) measurement error in the dependent variable, (2) measurement error in the independent variable, (3) dichotomization of a continuous dependent

variable, (4) dichotomization of a continuous independent variable, (5) range restriction in a dependent dichotomous variable, (6) range restriction in an independent dichotomous variable, and (7) downward bias in r as a measure of the population correlation. For each individual data point (i.e., for each r), we had information on artifacts 3 through 7. We first corrected each data point for these artifacts. Next, the corrected correlations were corrected for measurement error (artifacts 1 and 2) using the method of artifact distributions as this information was not available for all data points.

Independent variables For each of the samples, we coded the home country of the firm taking the governance decision. Countries included in our sample are Canada, Denmark, Germany, Hong Kong, Ireland, Japan, Korea, the Netherlands, Norway, Spain, the United Kingdom, and the United States. Countries' scores on the Hofstede dimensions were taken from Hofstede (2001), while scores on the Inglehart dimensions were obtained from the World Values Survey website (<http://www.worldvaluessurvey.org>). Consistent with Inglehart's focus on cultural dynamics (Table 1), scores on his dimensions are updated about every 5 years, starting with the first wave of data collection in 1981. The availability of multiple waves of country scores allows us to use cultural values scores that are close to the time of each individual study.

Figure 2 provides an overview of the location of all the countries included in Inglehart's data collection for the year 2000 (the exception being Hong Kong, for which the 2006 scores are reported). The countries included in our study are in italics and underlined. Figure 2 shows that the set of countries in which TCE has been studied far from covers the entire two-dimensional cultural space. This observation is of interest in its own right, and we will revisit this in our suggestions for future research.

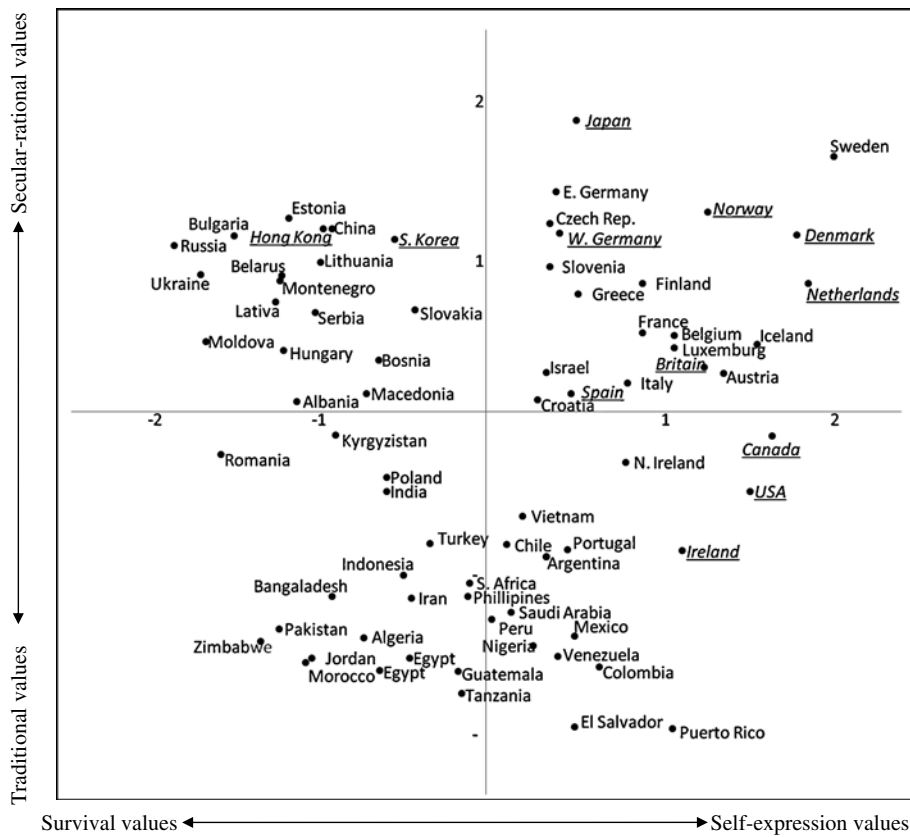
Model specification

To test the hypotheses based on Inglehart's theory, we estimate the following model:

$$\begin{aligned}
 |r_{ijct}| = & a_0 + a_1 \text{GOVERNANCE}_i + a_2 \text{SECULAR} - \text{RATIONAL}_{ct} + a_3 \text{SELF} - \text{EXPRESSION}_{ct} \\
 & + a_4 \text{GOVERNANCE}_i * \text{SECULAR} - \text{RATIONAL}_{ct} + a_5 \text{GOVERNANCE}_i \\
 & * \text{SELF} - \text{EXPRESSION}_{ct} + a_6 \text{VOL} - \text{UNCERT}_j + a_7 \text{TECH} - \text{UNCERT}_j + a_8 \text{BEHAV} - \text{UNCERT}_j \\
 & + a_9 \text{ASIA}_c + a_{10} \text{EU}_c + u_{ijct} \quad u_{ijct} \sim N(0, \Sigma)
 \end{aligned} \tag{1}$$

where $|r_{ijct}|$ is the absolute value of the correlation coefficient between governance choice i (hierarchical gover-

nance versus market governance or relational governance versus market governance) and transaction dimension j



Note: Country scores are taken from the World Values Survey website (<http://www.worldvaluessurvey.org>) and refer to the year 2000. Countries in our meta-analysis are in italics and underlined.

Fig. 2 Country scores on Inglehart’s traditional/secular-rational and survival/self-expression dimensions

(transaction-specific assets, volume uncertainty, technological uncertainty, or behavioral uncertainty) in country c in year t . The absolute value of the correlation coefficients is used since our focus is on the predictive power of TCE, and therefore on the strength of the relationships regardless of their sign (Geyskens et al. 1998). GOVERNANCE is a dummy variable which is 1 if the non-market governance mode in question is hierarchical governance and -1 if the governance mode is relational governance. SECULAR-RATIONAL (SELF-EXPRESSION) refers to a country’s (mean-centered) score on the secular-rational (self-expression) dimension. Hypothesis 1 posits that a_2 and a_3 are positive. Hypothesis 2 posits that a_4 is positive, while according to Hypothesis 3, a_5 is negative.

To test the hypotheses based on Hofstede’s theory, we estimate:

$$\begin{aligned}
 |r_{ijc}| = & b_0 + b_1 \text{GOVERNANCE}_i + b_2 \text{PD}_c + b_3 \text{UA}_c + b_4 \text{MAS}_c \\
 & + b_5 \text{LTO}_c + b_6 \text{GOVERNANCE}_i * \text{PD}_c \\
 & + b_7 \text{GOVERNANCE}_i * \text{UA}_c + b_8 \text{GOVERNANCE}_i * \text{MAS}_c \\
 & + b_9 \text{GOVERNANCE}_i * \text{LTO}_c + b_{10} \text{Vol} - \text{UNCERT}_j \\
 & + b_{11} \text{TECH} - \text{UNCERT}_j + b_{12} \text{BEHAV} - \text{UNCERT}_j \\
 & + b_{13} \text{ASIA}_c + b_{14} \text{EU}_c + u_{ijc} \quad u_{ijc} \sim N(0, \Sigma)
 \end{aligned}
 \tag{2}$$

where PD, UA, MAS, and LTO refer to a country’s (mean-centered) score on the power distance, uncertainty avoidance, masculinity, and long-term orientation dimensions, respectively. Hypothesis 4 posits that b_2 is negative while b_5 is positive. Hypotheses 5–7 posit that b_6 – b_8 are positive, while according to Hypothesis 8, b_9 is negative.⁶

To control for systematic differences in the magnitude of the effect of each transaction dimension (Geyskens et al. 2006), we include three effect-coded variables. VOL-UNCERT = 1 if the transaction dimension is volume uncertainty, -1 if the transaction dimension is transaction-specific assets, and 0 otherwise. Similarly, TECH-UNCERT and BEHAV-UNCERT indicate whether the transaction dimension is technological

⁶ For two reasons, we do not combine Eq. 1 and 2 in a single estimation equation. First, as mentioned earlier, it is *not* our purpose to contrast these two cultural theories, but rather to arrive at generalizations concerning cultural effects on TCE generalized across two self-contained cultural frameworks. Given this purpose, testing each theory separately is theoretically preferable to testing them together, especially since the theories are overlapping (Vinken et al. 2004). Second, estimating a single equation leads to severe multicollinearity. More specifically, four out of eight correlations between the interaction terms for the Inglehart versus the Hofstede dimensions are between .6 and .8. Of course, this is to be expected theoretically as the two theories are not orthogonal to each other.

uncertainty and behavioral uncertainty, respectively, with transaction-specific assets serving as the baseline. ASIA and EU are effect-coded continent variables, representing whether country c is Asian or European (with North America as the baseline). While they are not the focus of our study, controlling for the effects of these variables provides a stronger test of our hypotheses (Greene 2003).

We use unweighted effect coding to account for the fact that the number of correlations differs across transaction dimensions and across continents. A desirable property of using unweighted effect coding is that the intercept represents the grand mean predictive power of TCE across transaction dimensions and continents, with each transaction dimension and continent being given the same weight (Cohen et al. 2003).⁷

Estimation

Several samples in our meta-analysis yield more than one pairwise relationship involving governance choices (e.g., the

relationship between hierarchical governance and transaction-specific assets as well as the relationship between hierarchical governance and volume uncertainty). Since effect sizes calculated for any one sample are typically correlated, statistical methods that treat them as independent are inappropriate (Raudenbush et al. 1988). To account for the interdependence among multiple correlation coefficients within samples, we use generalized least squares (GLS) regression. Modeling within-sample dependencies using GLS should lead to more accurate error rates and ensure that samples that provide more data do not unduly influence the results.

The dependencies among the correlations are captured by their variance-covariance matrix. For a single sample, the asymptotic variances and covariances of the set of correlations involving governance choice and a transaction dimension are (Becker and Schram 1994; Geyskens et al. 1998):

$$\text{var}(r_{gov,x1}) = (1 - \rho_{gov,x1}^2)^2/n \quad (3)$$

$$\text{cov}(r_{gov,x1}, r_{gov,x2}) = \left[0.5(2\rho_{x1,x2} - \rho_{gov,x1}\rho_{gov,x2}) * (1 - \rho_{gov,x1}^2 - \rho_{gov,x2}^2 - \rho_{x1,x2}^2) + \rho_{x1,x2}^3 \right] / n \quad (4)$$

where $r_{gov,x1}$ is the sample correlation between variables governance choice and transaction dimension x_1 , $\rho_{gov,x1}$ is the corresponding population correlation, and n is the sample size. The ρ 's are typically estimated by substituting sample values for the population correlations. The matrix of variance and covariance values for study s is denoted as Σ_s , and the full covariance matrix is denoted as Σ . Correlations from different samples are assumed to be independent (Raudenbush et al. 1988). Therefore, the structure of Σ is that of a block diagonal matrix, with the Σ_s stacked along the diagonal. All remaining elements of Σ are zero. The error vector has variance-covariance matrix Σ , and the estimates for the linear model can be estimated with the usual GLS formulas. GLS estimation techniques for meta-analysis are described in detail by Becker (1992) and Becker and Schram (1994).

Note that the computation of covariances among correlations requires not only the correlations that are related (e.g., the correlation between hierarchical governance and transaction-specific assets and the correlation between hierarchical governance and volume uncertainty that are reported in the same sample), but also other correlations from the study's correlation matrix (e.g., the correlation between transaction-specific assets and volume uncertainty). In a few instances, the data needed to estimate covariances among the correlations involving governance choice were not reported. In these instances, we replaced the missing values with the meta-analytic correlations reported in Geyskens et al. (2006).

Results

Inglehart's theory

Main effects The results for Inglehart's theory are reported in Table 4. A first observation is that the intercept is highly significant ($a_0 = .178, p < .001$). Since we used effect coding, the intercept is the effect of a transaction dimension on governance choice, averaged across transaction dimensions, cultural contexts, and types of non-market governance (Cohen et al. 2003, p. 325). TCE has significant power to

⁷ In unweighted effect coding, the means of each group contribute equally to the overall unweighted mean. Unweighted effect coding is particularly useful when differences in number of observations per group are the result of incidental factors. In contrast, weighted effect coding is more useful when the relative size of each group is representative of its proportion in the population (Cohen et al. 2003, p. 321). Nothing in TCE theorizing or managerial practice suggests that governance decisions occur vastly more often in the U.S. than in Europe or Asia. Unweighted effect coding weighs each region equally, while weighted effect coding would give disproportionate weight to U.S. results.

Table 4 The impact of Inglehart’s cultural values on TCE’s power to predict non-market governance modes

Predictors	Hypothesized effect	b	t	p
Intercept		.178	15.572	<.001
Governance (1 = hierarchical; -1 = relational)		-.035	-8.451	<.001
Secular-rational	+	.030	2.534	.012
Self-expression	+	.030	2.126	.035
Secular-rational * governance	+	.017	2.712	.004
Self-expression * governance	-	-.021	-1.695	.045
Control variables				
Volume uncertainty		-.008	-.725	.469
Technological uncertainty		-.031	-3.902	<.001
Behavioral uncertainty		-.014	-1.673	.096
Asia		.005	.463	.644
Europe		-.063	-4.249	<.001

p-values for hypothesized effects are one-sided, other p-values are two-sided.

explain deviations from the marketplace norm as a function of the transaction dimensions. Thus, at the most fundamental level, the criticism levied against TCE of being a universalistic theory (Roberts and Greenwood 1997; Steensma et al. 2000) is not warranted. Indeed, the transaction dimensions are universally applicable in predicting when firms should—and will—deviate from the marketplace norm.

Consistent with Geyskens et al. (2006), the significant main effect of governance mode ($a_1 = -.035$, $p < .001$) indicates that, on average, TCE’s predictive power is greater for relational (versus market) governance than for hierarchical (versus market) governance. These authors argue that this is a measurement artifact rather than being due to the fact that TCE is inherently more powerful in predicting relational governance. Relational governance is usually measured as a perceptual variable, while hierarchical versus market governance is usually measured using a secondary data indicant. Thus, there is substantially less shared method variance between the independent and dependent variables when examining hierarchical (versus market) governance (Baumgartner and Steenkamp 2001, 2006).

The negative effects of technological and behavioral uncertainty indicate that transaction-specific assets (i.e., the baseline) have on average a stronger effect on governance choice than these uncertainty dimensions. This is consistent with Geyskens et al. (2006).

While we find strong support for the cross-cultural managerial relevance of the transaction dimensions in making governance decisions, we do find that the predictive power of TCE is higher in countries high on secular-rational values (H1a: $a_2 = .030$, $p < .05$) and in countries high on self-expression values (H1b: $a_3 = .030$, $p < .05$). To illustrate, the average correlation \bar{r} between a TCE dimension and governance choice in a country that scores -1 (-2) on the survival/self-expression dimension (i.e., one (two) standard deviations below the mean in the total data set of countries

included in Inglehart’s work) is .148 (.118) versus $\bar{r} = .208$ ($\bar{r} = .238$) in a country that scores +1 (+2) on this dimension, for an increase of 41% (102%). It suggests that the power of TCE to predict deviations from the “marketplace default” (i.e., regardless of the specific non-market governance mode chosen) is indeed subject to cultural influences. In traditional societies (countries that rate -2 on both Inglehart dimensions), economic considerations related to transaction costs have comparatively little effect on the governance choice ($\bar{r} = .058$), while in socioeconomically advanced societies (+2 on both Inglehart dimensions), economic considerations are much more powerful ($\bar{r} = .298$).

Interactions Cultural influences also operate in shaping the power of TCE to predict the non-market governance mode chosen in case of market failure. The interaction effects are shown graphically in the top two panels of Fig. 3. We plot the deviation in predictive power of hierarchical and relational governance from their respective means, for one standard deviation above the mean versus one standard deviation below the mean scores on the secular-rational and self-expression dimension, respectively. We use this representation to eliminate the biasing influence of the main effect of governance mode per se (Geyskens et al. 2006).

H2 posits that the power of the transaction dimensions in predicting hierarchical governance increases with the degree to which a country emphasizes secular-rational values, while the power of TCE in predicting relational governance is not affected. Consistent with this hypothesis, the interaction effect between the traditional/secular-rational dimension and governance mode (hierarchical = 1, relational = -1) is positive and significant ($a_4 = .017$, $p < .01$). Simple slope analysis (Cohen et al. 2003) reveals that the power of TCE in predicting hierarchical governance increases with secular-rational values ($b_{HG} = .047$, $t = 3.91$), while secular-rational values

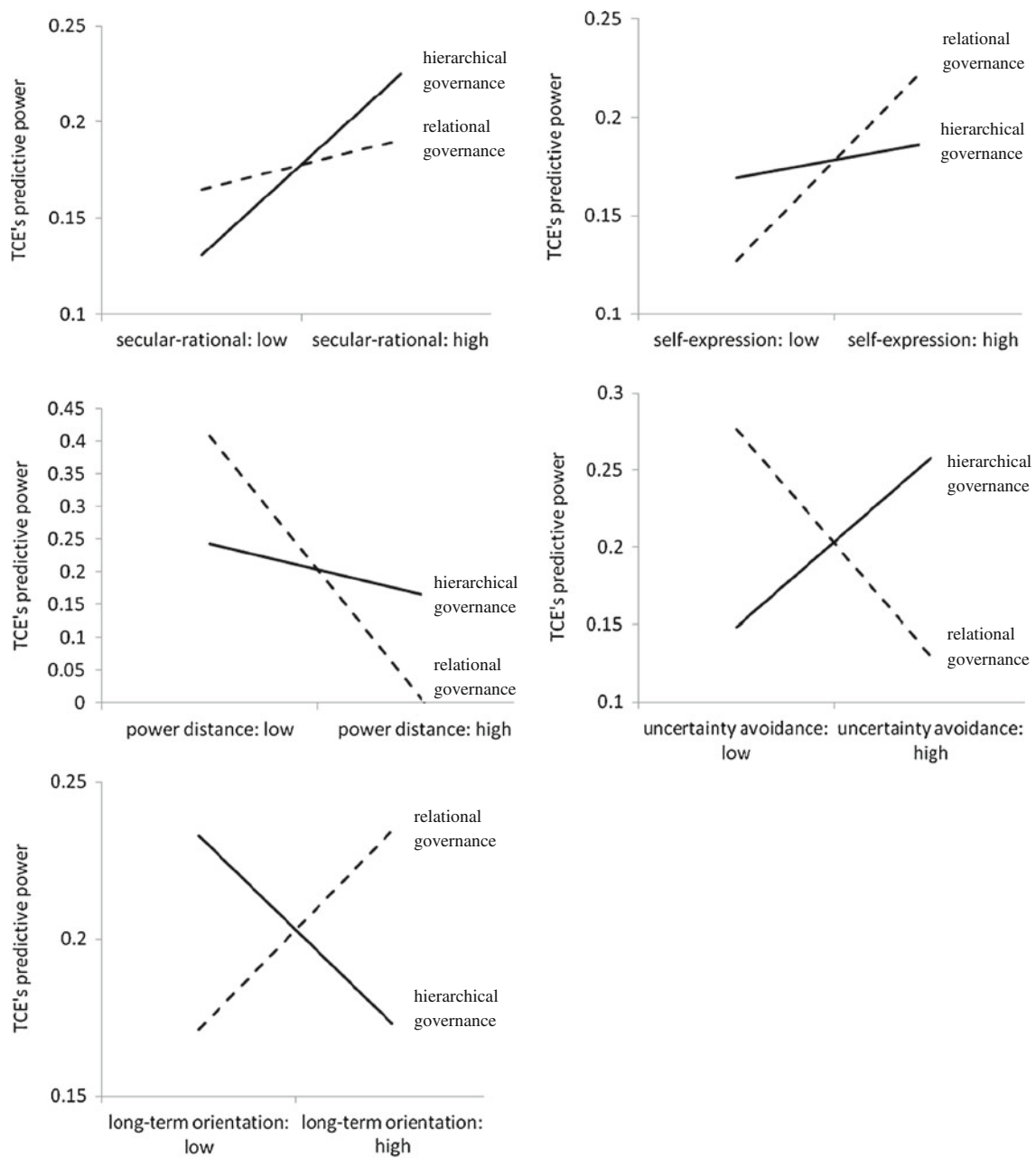


Fig. 3 Cultural effects on TCE's predictive power

are not related to the power of TCE in predicting relational governance ($b_{RG}=.013$, $t=.90$).

Hypothesis 3 states that the power of the transaction dimensions to predict relational governance increases with the degree to which a country emphasizes self-expression values, while the predictive power of TCE for hierarchical governance should systematically decrease with self-expression values. Consistent with this hypothesis, the interaction effect between the survival/self-expression dimension and governance mode (hierarchical = 1, relational = -1) is negative and

significant ($a_5=-.021$, $p<.05$). However, while simple slope analysis reveals that self-expression values do increase the power of TCE in predicting relational governance ($b_{RG}=.051$, $t=2.36$), we find no evidence for a decrease in the power of TCE in predicting hierarchical governance ($b_{HG}=.009$, $t=.60$). This is due to the strong positive main effect of the self-expression dimension. That is, the tendency of high self-expression societies to be guided by economic considerations in their governance choices is so strong that the tendency to move away from hierarchi-

cal governance is overshadowed by it. A graph of the pure interaction effect, while controlling for the main effects (see Cohen et al. 2003, p. 257) shows the expected negative effect.

Hofstede’s theory

The results for Hofstede’s theory are reported in Table 5. We also find strong evidence for the universal applicability of the transaction dimensions across Hofstede’s conceptualization of national culture, the intercept being .203 ($p < .001$). However, the predictive power of TCE is higher in countries low on power distance than in countries high on this dimension (H4a: $b_2 = -.006, p < .05$). The average correlation \bar{r} between a TCE dimension and governance choice in a country that scores one (two) standard deviations below the mean on power distance (in the total dataset of countries included in Hofstede’s (2001) work) is .291 (.380) versus $\bar{r} = .115$ ($\bar{r} = .026$) in a country that scores one (two) standard deviations above the mean on power distance, for a decrease of 61% (93%). Hypothesis 4b, about the predictive power of TCE being higher in countries higher on long-term orientation, is not supported ($b_5 = .000, n.s.$).

The interaction effects are shown graphically in the lower three panels of Fig. 3. Hypothesis 5 posits that the power of the transaction dimensions in predicting hierarchical governance increases with the power distance of a society, while the power of TCE in predicting relational governance decreases. Consistent with this hypothesis, the interaction effect between the power distance dimension and governance mode (hierarchical=1, relational=-1) is positive and significant ($b_6 = .004, p < .05$). This interaction effect is completely driven by the fact that TCE’s power

decreases in predicting relational governance when power distance increases ($b_{RG} = .01, t = -2.52$). In contrast, TCE’s power to predict hierarchical governance remains unaffected ($b_{HG} = -.002, t = -1.17$). Again, this is due to the strong (negative) main effect of the cultural dimension. A graph of the pure interaction effect, while controlling for the main effects, shows the expected effect.

Hypothesis 6 posits a similar effect for uncertainty avoidance, which was supported ($b_7 = .003, p < .001$). TCE’s power increases in predicting hierarchical governance when uncertainty avoidance increases ($b_{HG} = .003, t = 3.21$) and decreases in predicting relational governance ($b_{RG} = -.003, t = -2.78$). However, we find no evidence for the expected moderating effect of masculinity (H7; $b_8 = .000, n.s.$). Finally, H8 states that the power of the transaction dimensions to predict relational governance increases with the degree of long-term orientation of the country, while the predictive power of TCE for hierarchical governance should systematically decrease with long-term orientation. Consistent with this hypothesis, the interaction effect between the long-term orientation dimension and governance mode is negative and significant ($b_9 = -.001, p < .05$). Simple slope analysis reveals that long-term orientation decreases the power of TCE in predicting hierarchical governance ($b_{HG} = -.001, t = -1.83$), but while the effect for relational governance is in the expected direction, it is not statistically significant ($b_{RG} = .001, t = .90$).

Conclusion

Transaction cost economics has emerged as a major paradigm for understanding how companies can derive

Table 5 The impact of Hofstede’s cultural values on TCE’s power to predict non-market governance modes

Predictors	Hypothesized effect	b	t	p
Intercept		.203	17.044	<.001
Governance (1 = hierarchical; -1 = relational)		-.041	-9.992	<.001
Power distance	-	-.006	-2.480	.014
Uncertainty avoidance		-.000	-.554	.580
Masculinity		.001	1.201	.231
Long-term orientation	+	.000	.041	.967
Power distance * governance	+	.004	1.853	.033
Uncertainty avoidance * governance	+	.003	3.607	<.001
Masculinity * governance	+	.000	.653	.257
Long-term orientation * governance	-	-.001	-1.732	.042
Control variables				
Volume uncertainty		-.007	-.649	.517
Technological uncertainty		-.033	-4.119	<.001
Behavioral uncertainty		-.008	-.982	.327
Asia		-.026	-1.059	.291
Europe		.001	.036	.971

p-values for hypothesized effects are one-sided, other p-values are two-sided.

competitive advantage from governing their economic transactions. It is a universalistic theory in that it does not consider the broader cultural context in which governance decisions are made, but rather assumes that transaction cost considerations are universally applicable. This perspective is understandable, given that most theorizing and empirical testing has taken place in one cultural context, viz., the U.S. We argue that taking the national cultural context in which firms operate into account can enrich TCE.

There is no single cultural theory that is clearly conceptually and empirically superior to other theories (Vinken et al. 2004). In fact, it is doubtful whether any cultural theory can ever make that claim. However, several widely-accepted, self-contained, and thoroughly tested cultural frameworks have been proposed. To avoid being overly dependent on one cultural theory—after all, our core argument is that the national culture in which firms operate affects their governance decisions, rather than maintaining that this only is true for a specific cultural theory—we test our central thesis using two of the most widely accepted cultural theories: Hofstede’s (2001) theory, based on micro-level socialization processes and Inglehart’s theory, derived from macro-level processes of modernization and industrialization. This allows us to arrive at more robust conclusions concerning our central thesis.

We develop (main-effect) hypotheses about the cultural contexts in which TCE has higher predictive power as well as (interaction) hypotheses regarding particular cultural contexts that may inherently be more inclined to adopt a certain non-market governance mode if the market “fails.” The hypotheses are tested using quantitative meta-analytic techniques on data collected in 128 studies from 12 countries on 3 continents, representing governance decisions of 60,926 companies.

We find support for TCE’s universal claim in that, across two different conceptualizations of cultural contexts, the TCE dimensions have a significant effect on governance choice. This being said, we do find a systematic main effect of the national-cultural environment on the predictive power of TCE. In societies low on power distance and in societies characterized by a strong emphasis on self-expression and secular-rational values, companies are more strongly guided in their governance decisions by economic, transaction-cost considerations than are companies in societies high on power distance and in traditional societies.

Further, TCE’s power to predict the specific type of non-market governance employed by the firm is systematically moderated by the national culture in which the firm operates. The predictive power of TCE for explaining hierarchical governance is higher in countries that rate high on secular-rational values and on uncertainty avoidance and low on long-term orientation, whereas TCE is more

diagnostic for predicting relational governance in countries high on self-expression values and low on power distance and on uncertainty avoidance.

In sum, our meta-analysis provides support for our thesis that, to fully understand governance choices made by firms, we need to integrate TCE and cultural theory. While managers around the world are guided by economic considerations, the cultural context in which they operate exerts a substantial—and predictable—contingent effect on their governance choices.

Future research

This study has just begun to scratch the surface of cultural boundedness of TCE. Up to now, the majority of TCE studies have been conducted in the U.S., and those studies that were conducted in other (mostly Western) countries sample only a limited portion of the cultural space (cf. Table 2). Future research should move beyond the relative security of our own Western backyards and start to investigate other countries, especially emerging markets (Burgess and Steenkamp 2006). This allows us to examine cultural contingency effects on TCE prescriptions in a more precise manner. Moreover, it gives guidance to firms in making more culturally-appropriate governance decisions. In fact, success or failure in emerging markets will be a make-or-break issue for Western companies. Companies that make the right decisions will improve their competitive position, both vis-à-vis Western competitors and the “emerging giants” (*The Economist* 2008).

Another issue for future research is to relate firm performance to the selection of culturally more “appropriate” versus culturally less “appropriate” governance choices in response to the transaction dimensions. How large are the performance implications of making a culturally less-appropriate governance choice? Is the culturally-appropriate non-market governance mode chosen indeed the most efficient one for the country in question, or would the firm be equally well off (in an economic sense) by choosing the non-market governance mode that is less favored in that society? A related issue is whether the possible adverse performance implications associated with deviating from the country’s cultural norms are symmetrical or asymmetrical. For example, does opting for hierarchical governance in long-term oriented societies have similarly adverse performance consequences as opting for relational governance in secular-rational societies or in countries high on power distance? If not, which factors give rise to this asymmetry? Is there any competitive advantage in deviating from the country’s cultural norms?

Special complications emerge when the governance mode crosses national boundaries. In today’s global economy, competition is increasingly international rather

than local in scope. Firms engage in “global gamesmanship,” trying to leverage their competitive strength by playing on a “three-dimensional game of global chess” (MacMillan et al. 2003, p. 63). Establishing the “right” interorganizational governance mode is always challenging, but the challenges multiply when it involves companies rooted in different cultural contexts. What if the preferred solution to market failure differs between the two cultures? This issue is especially likely to emerge when the other company is located in an emerging market as the cultural context of these countries is dramatically different from the Western context (Burgess and Steenkamp 2006). Future research should investigate cross-border governance modes and the issues that may arise due to conflicting governance mode preferences.

Finally, consistent with our theorizing, we tested whether the combined predictive power of all TCE dimensions was affected by cultural factors. Future research could examine whether individual TCE dimensions are more or less likely to lead to a particular governance mode in certain cultural contexts. The relatively small numbers of correlations per transaction dimension in combination with the dominance of U.S. samples precluded us from incorporating such analyses in the present study. Once more primary TCE studies become available, such analyses would become possible.

These are just a few of the many fascinating questions that future research can address. We hope that this paper gives an impetus to this research by highlighting the role of a country’s national culture in governance decisions made by companies.

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