THE IMPACT OF CULTURE ON THE BUSINESS VALUE OF IT – AN EXAMINATION FROM TWO SECTORS

Research in Progress

Bipat, Soerin, Nyenrode Business University, Breukelen, Netherlands, s.bipat@nyenrode.nl & Software Improvement Goup, Amsterdam, Netherlands, s.bipat@sig.eu

Sneller, Lineke, Nyenrode Business University, Breukelen, Netherlands, l.sneller@nyenrode.nl

Visser, Joost, Radboud University, Nijmegen, Netherlands, j.visser@cs.ru.nl & Software Improvement Goup, Amsterdam, Netherlands, j.visser@sig.eu

Rouwelaar, Ten Hans, Nyenrode Business University, Breukelen, Netherlands, j.rouwelaar@nyenrode.nl

Abstract

This study examines the scarcely studied influence of organizational culture and IT capability on organizational performance. We surveyed 143 managers within the for-profit sector and 151 managers within the not-for-profit sector and our study demonstrate that interactions with organizational culture matter for organizational performance. For instance, interactions between organizational culture and IT capability may reverse an otherwise positive effect of IT capability on performance. We provide preliminary empirical evidence on the importance of organizational culture and demonstrate that without this contextual information, findings about business value of IT may be incomplete.

Keywords: IT capability, organizational culture, IT capabilities, Not-for-profit, For profit, Resourced-based view.

1 Introduction

Many business value of information technology (BVIT) studies have focused on information technology (IT) management and take organizational resources for granted (Avision & Myers, 1995; Cao, 2010; Cao et al., 2011; Wiengarten et al., 2012). In these studies, organizational resources, such as organizational culture, have been typically viewed as given (Cao, 2010). However, organizational culture is a critical variable in explaining how social groups interact with IT (Leidner & Kayworth, 2006; Wiengarten et al., 2012). For instance, Lu & Ramamurthy (2011) emphasized that technology is only one piece of the BVIT puzzle and should be expanded with organizational culture.

In general, scholars who have examined BVIT using the resource-based view (RBV) have recognized the role and importance of organizational culture (Drnevich & Croson, 2013; Melville et al., 2004; Wade & Hulland, 2004). Despite considerable progress, our knowledge of how culture influences IT capability has remained fragmented (Kappos & Rivard, 2008). Another area of our limited understanding has been the differential impact of the interaction between IT capability and organizational culture on organizational performance within different sectors (Cao et al., 2011). For example, does the interaction between IT capability and organizational performance render the same results for both profit and not-for-profit organizations? Boyne (2002) suggested that differences between public and private organizations were so significant that the same practices led to different results. This study aims to

contribute to existing body of knowledge by investigating the impact of the above-mentioned contentions and answering the following research question:

How does organizational culture influence the impact of IT capability on organizational performance?

Using a survey, we collect data from 143 managers within the for-profit sector and 151 managers within the not-for-profit sector. Based on regression analysis, we find that interactions with organizational culture matter for both for-profit (FP) and not-for-profit (NFPs) organizations. We demonstrate that interactions between IT capability and organizational culture provide insight into which type of IT competences are most likely to result in higher business value. For instance, while technical IT competence has a direct positive effect on an organization's productions and operations, its interaction with a hierarchical culture type reverses this effect for for-profit organizations. Our findings provide insight into the differential impact of the interaction between IT capability and organizational culture on organizational performance within two sectors.

In the next few sections, we elaborate on our theoretical background, research model and present our hypothesis. The Section "Research method" discusses our survey development and measurements. The analysis and results are presented in Section "Results". Finally, we discuss our results and limitations and present avenues for future research in the "Discussion" section.

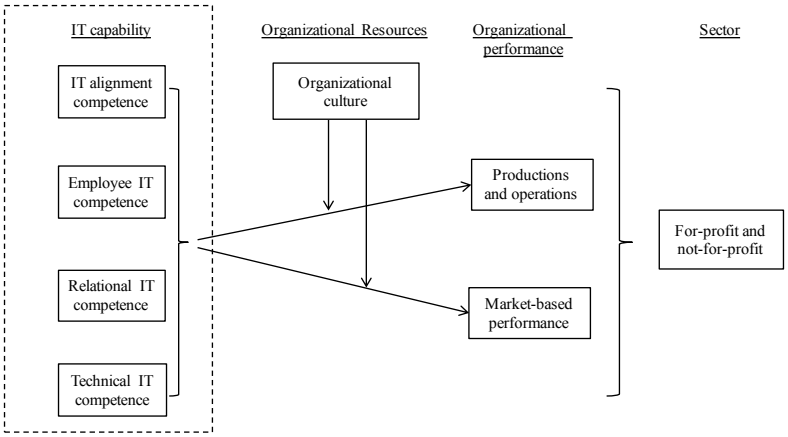

Figure 1. Research model

2 Theoretical Background

The RBV of the firm is a framework that allows information systems scholars to think about the link between IT and organizational performance (Wade & Hulland, 2004). Despite significant progress toward understanding business value of IT, prior research has been indifferent toward the influence of organizational context (Cao et al., 2011). Assessing interactions between organizational culture and IT capability is relevant because it provides insight regarding the type of resources that are most likely to result in higher business value in a particular context (Cao et al., 2011). However, there is little empirical research available that examines the interaction between IT capability and organizational culture on organizational performance (Cao et al., 2011).

2.1 Link between IT and organizational performance for FPs and NFPs

The capacity of an organization to leverage the potential of IT is referred to as IT capability (Bharadwaj, 2000). For this study, we reused four IT competencies: IT alignment competence, employee IT competence, relationship IT competence, and technical IT competence derived from [anonymized] and Hackler & Saxton (2007).

Similarities and differences between FPs and NFPs have been discussed frequently (Boyne, 2002; Rainey & Bozeman, 1976). Beside the owning and funding structure, the performance management structure also differs between FPs and NFPs (Boyne, 2002; Rainey & Bozeman, 1976). For instance, governmental managers are more subjected to legislation & judicial orders compared to their business counterparts (Boyne, 2002). Also, FP managers tend to view IT as more crucial for survival than NFP managers (Rocheleau & Wu, 2002). However, most evidence regarding these differences has been anecdotal (Cao et al., 2011; Rocheleau & Wu, 2002).

2.2 Interaction between IT capability and organizational culture on organizational performance

Based on previous work of Ravichandran & Lertwongsatien (2005) and Tallon et al. (2000), we identified two types of organizational performance: productions and operations and market-based performance. The former is a proxy for internal performance and the latter for external performance (Melville et al., 2004).

Although there has been no widespread consensus on a definition of *organizational culture* (OC), many scholars have adopted the three-level view of Schein (1984). According to Schein, OC manifests itself on three levels: artifacts, values, and assumptions. Artifacts are manifested through organizational structures, technologies, rituals. Values are manifested through strategies and goals of an organization. Assumptions are manifested through belief systems of individuals towards reality and truth, without being aware of their belief system (Schein, 1984).

In line with Schein's (1984) intermediate level, values, the competing values framework (CVF) focuses on values as the basis of organizational culture (Aier, 2014). The intermediate level covers the organizational core values and beliefs of what ought to be done (Iivari & Huisman, 2007). For this study, we focused on the intermediate level of values, since basic assumptions are often preconscious and invisible, and artifacts, while visible, are not easily decipherable (Aier, 2014; Iivari & Huisman, 2007).

CVF identifies four clusters of opposite, or competing, core values that underlie OC (Cameron et al., 2014). Within that framework, four culture types are distinguished: adhocracy, clan, hierarchy, and market. Adhocracy values human relations, trust, and participation; Clan values future growth by, for instance, resource acquisition; Hierarchy values uniformity, coordination, order, and routines; and Market values productivity, performance, and goal achievement (Livari & Livari, 2011). Although organizations may reflect more than one cultural type, some cultural types are more predominant over others (Livari & Livari, 2011).

Organizational culture is a determinant of innovativeness (Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2011). For instance, adhocracy is related to innovation and hierarchical culture to imitation (Naranjo-Valencia et al., 2011). The idea that bureaucratic cultures (e.g., hierarchical and market culture) impede effective use of IT has been well recognized by scholars (Harper & Utley, 2001; Hendriks, 2004; Ruppel & Harrington 2001). Harper & Utley (2001) found a negative relation between IT success and organizations with market culture as dominant culture type. However, a more recent study partially refuted these findings by demonstrating that both hierarchical and market culture did not impede knowledge sharing (Lopez-Nicolas & Meroño-Cerdán, 2009).

Since the directional effect of the interaction effect is not known a priori, we set forth the following nondirectional hypothesis:

Hypothesis: The combined effect of IT capability and organizational culture is significant on operational performance.

3 Research method

3.1 Survey development

To test our hypothesis, we developed a survey based on validated measurement instruments derived from for-profit studies. To achieve an adequate fit between our survey and our respondents, the survey was assessed on face and content validity with a not-for-profit executive and a for-profit executive. We pre-tested our survey using the three-step test-interview procedure of Hak, Van der Veer, & Jansen (2004).

We translated our survey from English to Dutch. To preserve the meaning of the survey items, the survey was back-translated into English by one of the authors and two bilingual individuals (Brislin, 1970). To motivate respondents, we promised to compare their responses to the respondents' benchmark. This practice increased accuracy, since respondents could gain greater self-understanding (Podsakoff et al., 2012). Taken together, our respondent motivation, pretesting procedure and scale variation reduced the likelihood of common method bias in our dataset (Podsakoff, MacKenzie, & Podsakoff, 2012).

All survey items were based on existing measurement instruments. IT alignment competence was measured using items from Lu & Ramamurthy (2011), employee IT competence by using items from Lepak & Snell (2002), relational IT competence and market-basd performance used items from Ravichandran & Lertwongsatien (2005) and technical IT competence with items from Wixom & Todd (2005). The items of organizational culture were derived from Henri (2006).

3.2 Data collection

With our survey, we aimed to reach senior managers within NFPs and FPs. The NFP sample was drawn from a mailing list of a local philanthropic resource organization. The FP respondents were targeted via the professional network of part-time Master students. In total, we received 294 usable responses from 100+ unique organizations per sector. A breakdown of our sample profile is presented in Table 1. More than 50% of the respondents from both FPs and NFPs were either part of the executive team or were positioned one hierarchical layer below CEO. Organizations in our sample were distributed across a wide range of industries. In terms of size in FTE, for-profit organizations had 2200 employees on average (with a standard deviation of 1980) and NFPs had 140 employees on average (with a standard deviation of 200).

Profit industries	Freq.	%	Not-for-profit industries*	Freq.	%
Agriculture, fishing	5	3%	Art and culture	9	6%
Education	3	2%	Church	11	7%
Finance and insurance	16	11%	Education and research	14	9%
Health care	2	1%	Municipalities	27	18%
Manufacturing	42	29%	Health	8	5%
Mining	3	2%	International help	23	15%
Real estate	1	1%	National government	8	5%
Retail trade	12	8%	Nature and environment	4	3%
Services	39	27%	Societal and social goals	30	20%
Utilities	15	10%			
Wholesale trade	5	3%			

* From the 151 NFP respondents 17 (11%) did not specify their industry.

Table 1. Sample profile

3.3 Measurement validation - Exploratory factor analysis

To determine the adequacy of the factor structure that emerges from the data, all indicators were subjected to an exploratory factor analysis use in SPSS (version 24). We used principal components with promax rotation to estimate the factor analyses and all extracted factors had eigenvalues greater than 1. Though not reported, we also assessed the pattern matrix with the cross loadings and the internal consistency. The item loadings differ at least 0.3 with other loadings on the same column and row, which affirms convergent validity and unidimensionality of the constructs. We determined internal consistency reliability of the constructs, using Cronbach's Alpha (CA). All constructs have CA values well above the threshold of 0.7 (Kline, 2011). In addition, we assessed the skewness, kurtosis and multicollinearity of all items. All skewness, kurtosis and multicollinearity values are within the accepted threshold of lower than 3.0, 8.0 and 5.0 respectively (Kline, 2011).

3.4 Measurement validation - Confirmatory factor analysis

We also performed a confirmatory factor analysis (CFA) using SPSS AMOS (version 21) and the results are reported in Table 2. We conducted several checks to demonstrate the reliability, convergent validity and discriminant validity of the measurements. For reliability, we evaluated whether the factor loadings are greater than 0.5 and composite reliability (CR) is greater than 0.7 (Kline, 2011). We evaluated whether the average variance extracted (AVE) is greater than 0.5 for convergent validity, and we evaluated whether the square root of the AVE is larger than the bivariate correlations between the constructs, for discriminant validity (Fornell & Larcker, 1981; Kline, 2011).

Table 2 demonstrates that CR for each construct was greater than 0.7, except for clan (0.624). Despite the lower CR of clan, we accepted this construct. The AVE was greater than 0.5 for all constructs, except for hierarchy (0.449), RITC (0.498), and clan (0.456). We accepted the values of hierarchy, RITC, and clan because of the exploratory nature of this study and because of their relatively small deviance from 0.5. The square root of the AVE—the bold-faced numbers in Table 2—is greater than the correlation between the respective latent constructs, which supports discriminant validity. Taken together, our results provided evidence of reliability, convergent validity, and discriminant validity of the measures.

In addition, we used six fit indices to evaluate model fit. Those fit indices are: Chi-square divided by the model degrees of freedom (CMIN/DF), the comparative fit index (CFI), the goodness of fit index (GFI), the root mean square error of approximation (RMSEA), Tucker Lewis Index (TLI) and standardized root mean squared (SRMR). A CMIN/DF ratio less than 5 (Wheaton, Muthen, Alwin, &

Summers, 1977), a CFI, GFI and TLI close to 1 (Hu & Bentler, 1999; Kline, 2011) and a RMSEA and SRMR smaller than 0.08 (Hu & Bentler, 1999; Kline, 2011) indicate a good fit. Table 2 demonstrates that all indices have values that are either higher or lower than the specified thresholds.

	HIER	POPS	EITC	ADH	MBP	RITC	MKT	TITC	ITAC	CLAN
HIER	**0.670**									
POPS	0.221	**0.787**								
EITC	0.124	0.303	**0.785**							
ADH	-0.180	0.447	0.443	**0.777**						
MBP	0.017	0.254	0.307	0.285	**0.819**					
RITC	0.048	0.239	0.226	0.192	0.123	**0.705**				
MKT	0.192	0.304	0.288	0.586	0.391	0.119	**0.757**			
TITC	0.003	0.429	0.282	0.188	0.114	0.487	0.055	**0.849**		
ITAC	0.169	0.473	0.343	0.344	0.210	0.175	0.250	0.422	**0.793**	
CLAN	-0.278	0.205	0.297	0.551	0.127	0.234	-0.072	0.347	0.076	**0.675**
AVE	*0.449*	0.620	0.617	0.604	0.670	*0.498*	0.573	0.721	0.629	*0.456*
CR	0.704	0.890	0.865	0.859	0.858	0.798	0.800	0.885	0.834	*0.624*

Abbreviations of the variables: POPS = Productions and operations, EITC = employee IT competence, ADH = Adhocracy culture, MBP = Market-based performance, RITC = relational IT competence, MRK = Market culture, TITC = technical IT competence, ITAC = IT alignment competence, HIER = Hierarchy culture, Clan = Clan culture, AVE = Average variance extracted, CA = Cronbach's Alpha.
Model fit indices: CMIN/DF = 1.545, CFI = 0.944, GFI = 0.876, RMSEA = 0.043, TLI = 0.934, and SRMR = 0.054.

Table 2. Correlations, reliability and model fit

4 Results

We report the results of our regression analysis in Table 3. We mean centered all variables to ensure easy interpretation of the coefficients (Kline, 2011).

As shown in Table 3, all models had significant *F*-values (p-value < 0.01), which indicated that the models were better specified than an intercept-only model. Based on the adjusted R-squares, we can observe that the NFP model explained more variance in our dependent variables: productions and operations (POPS) and market-based performance (MBP). The impact of the interaction between IT capability and organizational culture (OC) was smallest on MBP (FP with an adjusted R^2 of 14.2%) and highest on productions and operations (NFP with an adjusted R^2 of 44.2%). These findings were in line with previous results of Kohli & Devaraj (2003), who found that IT had more impact on an organizations' process performance rather than its financial performance.

The direct impact of ITAC was positive for FP on POPS (0.442, p-value < 0.05) and for NFP on both POPS and MBP (0.595 and 0.154 with p-values < 0.01 and 0.1, respectively). However, when examining the interaction between ITAC and OC, results varied. The interaction between ITAC and OC was not significant for FPs. For NFPs, this interaction had a negative effect on both POPS and MBP when organizations had a hierarchical culture as the dominate culture type (-0.283, -0.345 with p-values < 0.05 and 0.01, respectively). The interaction between ITAC and market culture was positively significant (0.376, p-value < 0.05) on POPS for NFPs.

The direct effect of EITC was only significant for NFPs on MBP (0.266, p-value < 0.01). When this IT competence interacted with clan culture, the impact of EITC on MBP reversed (-0.274, p-value < 0.1). For profit organizations, the interaction between EITC and market culture strengthened (0.332, p-value < 0.05) the otherwise insignificant impact of ETIC on MBP.

RITC is the only IT competence that had no significance on either POPS or MBP directly, for both sectors. Yet, its interaction with OC yielded both positive and negative effects on POPS. In combination with a clan culture, RITC showed a positive effect for both FPs and NFPs (0.520, 0.322, p-values < 0.05 and 0.1, respectively). Another positive effect was found between RITC and market culture (0.555, p-value < 0.05). However, a negative effect was found between RITC and adhocracy (0.634, p-

value < 0.05). These findings corroborated with the calls of Cao (2010) and Cao et al. (2011) to create a fit between OC and resource allocation in order to achieve a positive impact on organizational performance.

The direct effect of TITC was only significant on POPS for FPs and its effect was positive 0.202 (*p*-value < 0.1). The interaction between TITC and adhocracy strengthened the effect for FPs on MBP (0.533, *p*-value < 0.1) as TITC in isolation was not significant on MBP. Yet, when TITC interacted with a hierarchical culture type its positive effect reversed for FPs (-0.166, *p*-value < 0.1). This finding again underlined the impact of OC on OP. Also, the interaction between TITC and a market culture type had a negative impact on MBP for FPs (-0.704, *p*-value < 0.01).

In summary, we partially accept our hypothesis.

	For-profit organizations		Not-for-profit organizations	
	POPS	MBP	POPS	MBP
Intercept	0.077	**0.259****	-0.065	**-0.394*****
IT alignment competence	**0.442****	0.167	**0.595*****	**0.154***
Employee IT competence	-0.68	0.107	0.136	**0.266*****
Relational IT competence	-0.095	-0.053	0.081	0.060
Technical IT competence	**0.202***	0.101	0.046	0.154
Interactions				
IT alignment competence * Adhocracy	0.021	0.148	-0.027	-0.096
IT alignment competence * Clan	0.097	-0.195	0.194	-0.003
IT alignment competence * Hierarchy	0.088	0.167	**-0.283****	**-0.345*****
IT alignment competence * Market	-0.149	-0.037	**0.376****†	0.262
Employee IT competence * Adhocracy	-0.002	-0.231	-0.003	0.174
Employee IT competence * Clan	-0.142	0.101	-0.030	**-0.274***
Employee IT competence * Hierarchy	0.032	-0.012	0.141	0.075
Employee IT competence * Market	0.095	**0.332****†	-0.292	-0.239
Relational IT competence * Adhocracy	**-0.634****†	0.078	-0.207	-0.162
Relational IT competence * Clan	**0.520****†	-0.215	**0.322***†	0.171
Relational IT competence * Hierarchy	-0.056	-0.066	0.023	-0.08
Relational IT competence * Market	**0.555****†	0.118	0.162	0.198
Technical IT competence * Adhocracy	0.097	**0.533***†	-0.031	-0.121
Technical IT competence * Clan	-0.146	-0.192	-0.129	0.286
Technical IT competence * Hierarchy	**-0.166***	-0.055	-0.130	0.059
Technical IT competence * Market	0.058	**-0.704***** †	-0.021	0.115
Adjusted R-squared	0.412	0.142	0.442	0.279
F	5.982***	2.173***	6.943***	3.905***

The ***, **, *, represent a significant at *p*-value < 0.01, 0.05, 0.10, respectively. † Variance inflation factors between 5 and 20.
Abbreviations of the variables: POPS = Productions and operations, MBP = Market-based performance.

Table 3. Regression results

5 Discussion

Our study aimed to answer the well-documented but scarcely studied research question: *How does organizational culture influence the impact of IT capability on organizational performance?*

To answer the question, we separately surveyed managers of for-profit as well as not-for-profit organizations. We found that the impact of the interaction between organizational culture and IT capability can affect organizational performance both positively and negatively. For instance, IT alignment competence impacted for-profit and not-for-profit organizations positively; however, its interaction with a hierarchical culture type yielded negative results for not-for-profit organizations.

Other significant interactions between organizational resources and IT capability were found when examining relational IT competence combined with a clan and market culture type. Both combinations had a positive impact on productions and operations in both sectors. However, organizations that have adhocracy as dominant culture type in combination with relational IT competence, may attain negative results for their productions and operations. This finding may be explained by inefficacies that arise when vendors are managed in an ad hoc manner. The interaction between adhocracy and technical IT competence had a positively impact on market-based performance for for-profit organizations. The latter could be related to agility that is achieved when both adhocracy and technical IT competence interact (Lu & Ramamurthy (2011). From the perspective of IT capability, the findings show that interactions between organizational culture and IT alignment competence are not significant for FPs, and interactions with technical IT competence are not significant for NFPs. Similarly, interactions with employee IT competence are only significant on an organization's market-based performance, while interactions with RITC are only significant on productions and operations. We believe more research is needed to understand the intricacies of the interactions and their impact on organizational performance.

The findings of our study have several preliminary implications for both practitioners and scholars. Managers who seek to leverage their IT should understand that benefits of IT are not reaped in isolation. In other words, merely investing or nurturing a certain type of IT competence does not necessarily lead to superior organizational performance. Rather, a holistic view of *business value of IT* is needed, where the impact of IT with organizational characteristics may not be neglected. For instance, not-for-profit business and IT managers should explicitly consider the impact of legacy systems, for instance, on their cooperation with vendors in order to reap benefits. Also, for both for-profit as well as not-for-profit organizations, more knowledgeable and capable IT employees may lead to more organizational benefits.

5.1 Limitations and future research

Our study has a few limitations, but can also be extended in some areas. Our survey is conducted in The Netherlands, which may limit the ability to generalize our results. Instead of relying on one respondent per organization, we recommend scholars to survey both IT and business managers. Moreover, the survey sample of for-profit organizations was not completely random. These organizations were contacted through the professional network of part-time Master students. Nevertheless, our sample included 100+ unique organizations per sector and a reasonable variation of organizations within a sector (Table 1).

Additionally, assessing the impact of organizational culture solely through quantitative measures may not uncover cultural phenomena. Further research could consider a mixed method approach to assess the influence of organizational culture on organizational performance. Furthermore, since our data represent a snapshot in time, it is difficult to infer a causal relationship between constructs. A longitudinal study might reveal that the interactions may have a positive impact that becomes apparent after a specific period of time. Lastly, we relied on perceived measures. Perceptual measures offered a diagnostic explanation of how effective IT was used, while accounting-based measures, offered a more standardized alternative (Davern & Wilkin, 2010). It desirable to combine perceptual and accounting-based measures to advance our understanding of business value of IT (Davern & Wilkin, 2010).

6 Contribution

Our preliminary results demonstrate that the impact of the interaction between IT capability and organizational culture does matter for organizational performance. Our initial analysis demonstrates that organizational culture provide additional insight regarding which type of IT competence is most likely to result in higher business value (Cao et al., 2011). Empirical support for the impact of the interaction between organizational culture and IT capability on organizational performance of different industries has been scarce (Cao et al., 2011; Chae et al., 2014).

References

Aier, S. (2014). The role of organizational culture for grounding, management, guidance and effectiveness of enterprise architecture principle. Information Systems and e-Business Management, 12(1), 43-70.

Avision, D. E., & Myers, M. D. (1995). Information systems and anthropology: and anthropological perspective on IT and organizational culture. Information Technology & People, 8(3), 43-56.

Bharadwaj, A. S. (2000). Resource-based perspective on information technology capability and firm performance: An empirical investigation. MIS Quarterly, 24(1), 169-196.

Boyne, G. (2002). Public and private management: what is the difference? Journal of Management Studies, 39(1), 97-122.

Brislin, R. W. (1970). Back-translation for cross- cultural research. Journal of cross-cultural psychology, 1(3), 185-216.

Chae, H. C., Koh, C. E., & Prybutok, V. R. (2014). Information Technology Capability and Firm Performance: Contradictory Findings and Their Possible Causes. MIS Quarterly, 38(1), 305-326.

Cameron, K. S., Quinn, R. E., DeGraff, J., & Thakor, A. (2014). Competing values leadership. Northampton, USA: Edward Elgar Publishing Limited.

Cao, G. (2010). A four- dimensional view of IT business value. Systems Research and Behavioral Science, 27(3), 267-284.

Cao, G., Wiengarten, F., & Humphreys, P. (2011). Towards a contingency resource-based view of IT business value. Systemic Practice and Action Research, 24(1), 85-106.

Davern, M., & Wilkin, C. (2010). Towards an integrated view of IT value measurement. International Journal of Accounting Information Systems, 11(1), 42-60.

Drnevich, P. L., & Croson, D. C. (2013). Information technology and business – level strategy: Toward an integrated theoretical perspective. MIS Quarterly, 37(2), 483-509.

Fink, L. (2011). How do IT capabilities create strategic value? Toward greater integration of insights from reductionistic and holistic approaches. Journal of Information Systems, 20(1), 16-33.

Fornell, C., & Larcker, D. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research, 18(1), 39-50.

Gerow, J. E., Grover, V., Thatcher, J., & Roth, P. L. (2014). Looking Toward The Future of IT-Business Strategy Alignment through the Past: A Meta-Analysis. MIS Quarterly, 38(4), 1159-1186.

Hackler, D., & Saxton, G. D. (2007). The strategic use of information technology by nonprofit organizations: Increasing capacity and untapped potential. Public Administration Review, 67(3), 474-487.

Hak, T., Van der Veer, K., & Jansen, H. (2004). The Three-Step Test-Interview (TSTI): An observational instrument for pretesting self-completion questionnaires. Survey Research Methods, 2(3), 143-150.

Harper, G. R., & Utley, D. R. (2001). Organizational culture and successful information technology implementation. Engineering Management Journal, 13(2), 11-15.

Hendriks, P. H. J. (2004). Assessing the role of culture in knowledge sharing, In Proceedings of Fifth European Conference in Organization, Knowledge, Learning and Capabilities (OKLC 2004), Innsbruk.

Henri, J.-F. (2006). Organizational culture and performance measurement systems. *Accounting, organizations and society, 31*(1), 77-103.

Hu, L.-t., & Bentler, P. M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. Structural Equation Modeling, 6(1), 1-55.

Iivari, J., & Huisman, M. (2007). The relationship between organizational culture and the deployment of systems development methodologies. MIS Quarterly, 31(1), 35-58.

Kappos, A., & Rivard, S. (2008). A three-perspective model of culture, information systems, and their development and use. MIS Quarterly, 32(3), 601-634.

Kim, G., Shin, B., Kim, K. K., & Lee, H. G. (2011). IT Capabilities, Process-Oriented Dynamic Capabilities, and Firm Financial Performance. Journal of the Association for Information Systems, 12(7), 487-517.

Kline, R. B. (2011). Principles and practice of structural equation modeling. New York: The Guilford Press.

Kohli, R., & Devaraj, S. (2003). Measuring information technology payoff: A meta-analysis of structural variables in firm-level empirical research. Information Systems Research, 14(2), 127-145.

Leidner, D., & Kayworth, T. (2006). Review: a review of culture in information systems research: toward a theory of information technology culture conflict. MIS Quarterly, 30(2), 357-399.

Lepak, D. P., & Snell, S. A. (2002). Examining the human resource architecture: The relationships among human capital, employment, and human resource configurations. *Journal of Management, 28*(4), 517-543.

Livari, J., & Livari, N. (2011). The relationship between organizational culture and the deployment of agile methods. Information and Software Technology, 53(5), 509-520.

Lopez-Nicolas, C., & Meroño-Cerdán, Á. L. (2009). The impact of organizational culture on the use of ICT for knowledge management. Electronic Markets, 19(4), 211.

Lu, Y., & Ramamurthy, K. (2011). Understanding the link between information technology capability and organizational agility: An empirical examination. MIS Quarterly, 35(4), 931-954.

Melville, B. N., Kraemer, K., & Gurbaxani, V. (2004). Review: Information technology and organizational performance: An integrative model of IT business value. MIS Quarterly, 28(2), 283-322.

Naranjo-Valencia, J. C., Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation or imitation? The role of organizational culture. Management Decision, 49(1), 55-72.

Podsakoff, M. P., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. Annual review of psychology, 539-569.

Rainey, H., & Bozeman, B. (1976). Comparing public and private organizations. Public administration review, 36(2), 233-244.

Ravichandran, T., & Lertwongsatien, C. (2005). Effect of information systems resources and capabilities on firm performance: A resource-based perspective. Journal of management information systems, 21(4), 237-276.

Rocheleau, B., & Wu, L. (2002). Public Versus Private Information Systems Do They Differ in Important Ways? A Review and Empirical Test. American review of public administration, 32(4), 379-397.

Ruppel, C., & Harrington, S. (2001). Sharing knowledge through intranets: A study of organizational culture and intranet implementation. IEEE transactions on professional communication, 44(1), 37-52.

Schein, E. H. (1984). Coming to a new awareness of organizational culture. MIT Sloan, 25(2), 3-16.

Tallon, P. P., Kraemer, K. L., & Gurbaxani, V. (2000). Executives' perceptions of the business value of information technology: a process-oriented approach. Journal of Management Information Systems, 16(4), 145-173.

Wade, M., & Hulland, J. (2004). Review: The resource-based view and information systems research: Review, extension, and suggestions for future research. MIS Quarterly, 28(1), 107-142.

Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. F. (1977). Assessing reliability and stability in panel models. Sociological methodology, 8(1), 84-136.

Wiengarten, F., Humphreys, P., Cao, G., & McHugh, M. (2012). xploring the important role of organizational factors in IT business value: Taking a contingency perspective on the resource- based view. International Journal of Management Reviews, 15(1), 1-17.

Wixom, B. H., & Todd, P. A. (2005). A theoretical integration of user satisfaction and technology acceptance. *Information systems research, 16*(1), 85-102.