



Customizing business-to-business (B2B) professional services: The role of intellectual capital and internal social capital[☆]



Sreedhar Madhavaram^{a,*}, Shelby D. Hunt^b

^a Cleveland State University, Department of Marketing, Monte Ahuja College of Business, 1860 E. 18th Street, BU 446, Cleveland, OH 44115, United States

^b The Jerry S. Rawls and P. W. Horn Professor of Marketing, Texas Tech University, Department of Marketing, Lubbock, TX 79409-2101, United States

ARTICLE INFO

Article history:

Received 14 January 2016

Received in revised form 3 January 2017

Accepted 13 January 2017

Available online xxxx

Keywords:

Customization

Business-to-business (B2B) professional services

Intellectual capital

Internal social capital

ABSTRACT

Business-to-business (B2B) professional service firms often develop highly customized offerings for their customers. Customizing B2B professional services is a knowledge intensive process that requires the coordinated efforts of individuals with specialized knowledge and skills. Drawing on customization and social capital theory, we develop and test an *intellectual capital* (IC) model of customizing B2B professional services that rests on two foundational premises. First, three different forms IC, that is, employees' knowledge of customers, employees' technical knowledge and abilities, and organizational creativity, make firms more effective at customizing B2B professional services. Second, *internal social capital* (ISC) is a precursor to the intellectual capital that enables firms to effectively produce customized B2B professional services. Analyses of data from key informants of 161 marketing research firms support our theses.

© 2017 Elsevier Inc. All rights reserved.

1. Introduction

Business-to-business (B2B) professional services are growing rapidly (La, Patterson, & Styles, 2009). Despite its growth, research on B2B professional services is limited. Extant research suggests that B2B professional services are characterized by complexity (de Brentani & Ragot, 1996), knowledge intensity (Wang & Ma, 2014), and the importance of specialized skills and knowledge (La et al., 2009), which has contributed to customization becoming central to value creation and a major concern of CEOs (BizEd, 2016; Chan, Yim, & Lam, 2010). Customized professional services (1) are highly tailored for one, specific customer, (2) involve many creative options, (3) address numerous individualized customer requirements, and (4) are produced in highly context-specific, environments (Burke, Rangaswamy, Wind, & Eliashberg, 1990). Many marketing research firms—the context of our study—have long produced customized marketing research offerings that are tailored to the specific knowledge needs of individual clients (Malhotra, 1996). However, no research specifically focuses on the customization of B2B professional services.

Customizing B2B professional services involves braiding together many tasks that (1) are knowledge intensive, (2) require the coordinated efforts of individuals with specialized knowledge and skills, (3) are

systemic (elements of the offerings depend on each other for development and performance), and (4) have emergent properties during development (unpredictable and unexpected events and interactions often occur). When B2B professional services firms produce high quality, customized offerings, such offerings can significantly impact the overall effectiveness and/or efficiency of the firms' customers. Consider, for example, marketing research firms. The client of a research firm may *successfully* develop, launch, and execute a marketing strategy when it is based on a *well-done*, customized, estimation study of a new product's market potential. In contrast, the client's marketing strategy may fail when it is based on a *poorly-done* study. Therefore, marketing research firms that are more effective in customizing market offerings to clients' specific needs may have marketplace positions of competitive advantage (Hunt, 2000; Hunt, Morgan, & Morgan, 1995.)

Most customization research focuses on the *mass* customization of B2C offerings (e.g., Gilmore & Pine, 1997; Liechty, Ramaswamy, & Cohen, 2001; Wind & Rangaswamy, 2001). In addition, while customization has been addressed in the contexts of co-creation of value (Kohtamäki, Partanen, & Moller, 2013), solution provision (Töllner, Blut, & Holzmüller, 2011), and problem solving (Aarikka-Stenroos & Jaakkola, 2012), no research explores what makes firms *better* at customization. Therefore, our research investigates why some B2B professional services firms are better than others in customization. Specifically, because customizing B2B market offerings is knowledge intensive and requires the coordinated efforts of individuals with specialized knowledge and skills, our research proposes that a model based on social capital theory can explain the differential effectiveness of firms in customizing market offerings.

[☆] We thank Dennis B. Arnett and Robert E. McDonald of Texas Tech University, and Marvin Washington of University of Alberta, for their helpful assistance on this research. We also thank the Graduate School, Texas Tech University, for financial support.

* Corresponding author.

E-mail addresses: s.madhavaram@csuohio.edu (S. Madhavaram), shelby.hunt@ttu.edu (S.D. Hunt).

The fundamental thesis of social capital theory is that social capital is a precursor to intellectual capital, which in turn, leads to competitive advantage (Nahapiet & Ghoshal, 1998). Accordingly, drawing on intellectual capital (hereafter, “IC”) research (e.g., Baxter & Matear, 2004) and social capital research (Hughes & Perrons, 2011; Wu, Lii, & Wang, 2015), we propose and test an IC model of customizing B2B professional services. Furthermore, we identify three distinct forms of IC that are critical to customizing B2B market offerings: employees’ knowledge of customers, employees’ technical knowledge and abilities, and organizational creativity. Our model rests on two foundational premises. First, the three different forms of IC that we identify are important for making firms more effective at customizing B2B professional services. Second, *internal social capital*, defined as the collection of actual and potential resources embedded within, available through, and derived from the firm’s internal network of relationships, is a precursor to IC. Therefore, our research provides insights into how B2B professional services firms can become more effective at customization.

We first discuss the foundations of our model and develop specific hypotheses. Second, we test the model using data from key informants of 161 marketing research firms. We then discuss our study’s contributions to B2B professional services marketing and its implications for theory and practice.

2. Model development

Our model, shown in Fig. 1, has three categories of concepts: (1) customization, (2) intellectual capital, and (3) internal social capital. We briefly overview each category and then propose formal hypotheses.

2.1. Customization

The search for competitive advantage drives B2B professional services firms to effectively customize their offerings. Although the concept of customization actually began with B2B products (Shapiro, 1977), most customization research is in the B2C context. As marketing is evolving toward a dominant logic in which knowledge and customization are considered to be fundamental sources of competitive advantage (Vargo & Lusch, 2004), the pursuit of effective customization can provide competitive advantages in B2B professional services.

2.2. Intellectual capital

“Intellectual capital” refers to “the knowledge and knowing capability of a social collectivity, such as an organization, intellectual community, or professional practice” (Nahapiet & Ghoshal, 1998, p.245) and benefits firms by positively influencing firm performance (Baxter & Matear, 2004). Rather than being unidimensional, intellectual capital research suggests that there are numerous forms of intellectual capital (Reed, Lubatkin, & Srinivasan, 2006). The customization and B2B marketing literatures lead us to propose three forms of intellectual capital that, we argue, can help firms in positively influencing their customization outcomes: (1) employees’ knowledge of customers, (2) employees’ technical knowledge and abilities, and (3) organizational creativity.

2.2.1. Employees’ knowledge of customers

Customer knowledge, that is, knowing customer needs, wants, and preferences, is essential for adopting customization as a business strategy (Tollin, 2002). In B2B markets, detailed customer knowledge is often considered a prerequisite to customizing market offerings (Stump, Athaide, & Joshi, 2002). Intimate knowledge of client firms can provide suppliers with opportunities to develop market offerings that better match customers’ requirements. Therefore:

Hypothesis 1. There is a positive relationship between a firm’s employees’ knowledge of customers and its effective customization of offerings.

2.2.2. Employees’ technical knowledge and abilities

Effectively customizing a B2B firm’s professional services’ offerings requires employees with specific knowledge and skills related to producing the offerings. Because B2B offerings are often systemic (elements of the offerings depend on each other for development and performance) and unpredictable and unexpected events often occur during the development process, employees’ technical knowledge and abilities assume critical proportions. For marketing research firms, Song and Parry’s (1997a, 1997b) work suggests that customizing research requires employees who have a technical proficiency in research methods. That is, to excel at customizing research offerings, marketing research firms’ employees must know how to create research designs, as well as how to gather, analyze, and interpret the meaning of data. Therefore:

Hypothesis 2. There is a positive relationship between a firm’s employees’ technical knowledge and abilities and its effective customization of offerings.

2.2.3. Organizational creativity

Customization requires innovative organizations, which requires organizations to be (1) flexible in responding to customers’ needs for individualized market offerings (Kotha, 1995) and (2) effective problem solvers (Spring & Dalrymple, 2000). Indeed, foundational knowledge resources have to come together in *novel or creative* assemblages to meet client firms’ particular requirements. “In social science research, the most widely used definition of creativity focuses on the meaningful novelty of some output (e.g., a painting, a chemical compound) relative to conventional practice in the domain to which it belongs (e.g., abstract art, adhesives)” (Andrews & Smith, 1996, p. 175). Accordingly, *organizational* creativity plays a major role in solving problems associated with customization. Therefore:

Hypothesis 3. There is a positive relationship between a firm’s organizational creativity and its effective customization of offerings.

2.3. Internal social capital

Both internal relations (internal social capital) and external relations (external social capital) can be beneficial to the firm (Adler & Kwon, 2002). Our focus is on internal social capital (ISC), which may be defined as the *collection* of actual and potential resources embedded within, available through, and derived from the internal network of relationships within the firm (Nahapiet & Ghoshal, 1998). Good communications and strong relationships among employees have long been acknowledged to be critical when B2B offerings are tailored to customer needs (Levitt, 1981).

For collaboration, and therefore effective customization, to take place, firms need a set of social resources embedded in internal relations. Consistent with Nahapiet and Ghoshal (1998) and Nielsen and Nielsen (2009), we argue that ISC influences positively the three distinct forms of IC (employees’ knowledge of customers, employees’ technical knowledge and abilities, and organizational creativity) that are critical to customizing B2B professional services. Furthermore, internal social capital may be viewed as a multidimensional construct. Social capital has structural, relational, and cognitive dimensions (Nahapiet & Ghoshal, 1998). Therefore, we investigate the interrelationships among the different variables belonging to the structural, relational, and cognitive dimensions.

2.3.1. Structural dimension

Nahapiet and Ghoshal (1998) note that structural embeddedness concerns the properties of the social system, the entire network of relations, and the patterns of individuals’ connections. Therefore, the structural dimension of social capital involves the extent to which in an

organization's employees are connected, the patterns of such connections, and the usefulness of such connections. Because “structural intensity” has been identified as an essential constituent of the structural dimension of social capital (Atuahene-Gima, 2002), we use it as representing the structural dimension of ISC.

2.3.2. Relational dimension

The term “relational embeddedness” describes the kind of relationships people have developed with each other through a history of interactions (Nahapiet & Ghoshal, 1998). Consistent with the relationship marketing literature (e.g., Morgan & Hunt, 1994), this research uses relational commitment and relational trust as key concepts that represent the relational dimension of social capital.

2.3.3. Cognitive dimension

Particularly important for creating IC is the cognitive dimension of social capital, which refers to those resources that provide shared representations, interpretations, and systems of meaning among parties (Cicourel, 1973). Thus, the cognitive dimension of social capital requires that employees possess a common language to share narratives. Like Tsai and Ghoshal (1998), our research uses the sharing of *common goals* as representing one of the components of the cognitive dimension of social capital. In the relationship marketing literature, researchers find that shared values are important for developing commitment and trust (Morgan & Hunt, 1994). This research uses *shared values* as representing the second important component of the cognitive dimension of social capital. Because the customization of B2B professional services requires employees with different knowledge and skills to work together, the exchange of information is essential. Therefore, this research uses *information exchange* as the third important component of the cognitive dimension of social capital.

In summary, for ISC, this study uses *structural intensity* as representing the structural dimension, *relational trust* and *relational commitment* as representing the relational dimension, and *common goals*, *shared values*, and *information exchange* as representing the cognitive dimension. We now discuss the relationships among the six relevant variables and the corresponding hypotheses (see Fig. 1).

2.3.4. Information exchange

For customization to work, there should be information exchange between firms' customer managers and capability managers (Pine, Peppers, & Rogers, 1995). Information exchange includes sharing technical data, objectives and goals, and knowledge of conflicts, trouble spots, or changing situations. Information exchange, by bringing together the skills and knowledge of numerous employees, fosters overall *firm* creativity, which, in turn, promotes effective customization. Therefore:

Hypothesis 4. There is a positive relationship between employees' information exchange (within the firm) and employees' knowledge of customers.

Hypothesis 5. There is a positive relationship between employees' information exchange (within the firm) and employees' technical knowledge and abilities.

Hypothesis 6. There is a positive relationship between employees' information exchange (within the firm) and organizational creativity.

2.3.5. Relational commitment

Customizing B2B market offerings requires cooperative behaviors among employees. Yilmaz and Hunt (2001) find that when employees are committed to *each other*, such relational commitment leads to cooperative behaviors. Furthermore, Selnes and Sallis (2003) find that relational commitment leads to relational learning through information exchange. Consequently, commitment among employees leads to

cooperation and the effective development of customized offerings. Therefore:

Hypothesis 7. There is a positive relationship between employees' *relational commitment* and employees' *information exchange* (within the firm).

2.3.6. Relational trust

Trust involves confidence in an exchange partner's reliability and integrity (Morgan & Hunt, 1994). When exchange partners believe that they will not be harmed, exploited, or put at risk by the actions of other exchange partners, they are more likely to exchange “information they otherwise would consider sensitive and [more likely to] ... create constructive, creative dialogues” (Selnes & Sallis, 2003, p.84). In our research, one employee's work often depends on technical knowledge abilities of other employees. Accordingly, confidence in other employees' reliability and integrity leads to commitment to one another and exchanging relevant information on customers and knowledge specific to customization. Therefore:

Hypothesis 8. There is a positive relationship between employees' *relational trust* and *information exchange* (within the firm).

Hypothesis 9. There is a positive relationship between employees' *relational trust* and *relational commitment*.

2.3.7. Structural intensity

Structural intensity, the frequency of contact and closeness of interactions among employees (Atuahene-Gima, 2002), can result in employees believing that an ongoing relationship with another is so important as to warrant maximum efforts in maintaining it. Because customization requires complex internal exchanges among employees, structural intensity can help employees bring their distinct knowledge and abilities together in order to effectively customize the firm's offerings. Indeed, employees can be great resources to each other when structural approaches are used to improve relational commitment (Mohrman, Finegold, & Klein, 2002). Therefore:

Hypothesis 10. There is a positive relationship between employees' *structural intensity* and *relational commitment*.

2.3.8. Common goals

A “shared language” provides employees with a common conceptual apparatus for working toward achieving the firm's objectives (Nahapiet & Ghoshal, 1998). Consequently, a shared language concerning the firm's goals can foster employees' trust in, and commitment to, mutual objectives. Because employees must systemically use their technical knowledge and capabilities to help each other effectively customize their offerings, common goals contribute to commitment and trust among employees. Therefore:

Hypothesis 11. There is a positive relationship between employees' *common goals* and *relational commitment*.

Hypothesis 12. There is a positive relationship between employees' *common goals* and *relational trust*.

2.3.9. Shared values

Employees “share values” when they have beliefs in common about the behaviors and policies that are important or unimportant, appropriate or inappropriate, right or wrong. Being *beliefs*, shared values are therefore cognitive in nature. The relationship marketing literature finds positive relationships between shared values and relational trust (Yilmaz & Hunt, 2001). Therefore:

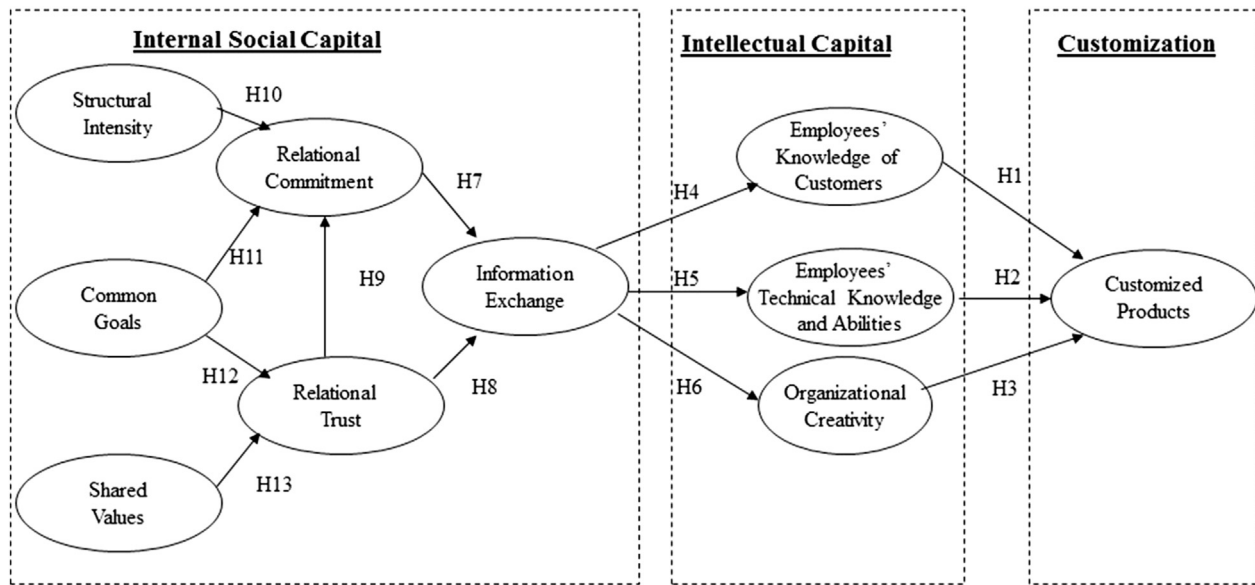


Fig. 1. An intellectual capital model of customizing B2B professional services.

Hypothesis 13. There is a positive relationship between employees' shared values and relational trust.

3. Method

We test our model using a sample comprised of members of the Marketing Research Association (MRA). We first discuss data collection, then questionnaire design and measures.

3.1. Data collection

The research design uses mail surveys to key informants from marketing research firms. Key informants can provide information at the aggregate or organizational unit of analysis by reporting on group or organizational properties (Seidler, 1974) and are chosen because they have special qualifications, such as a particular status in the firm or specialized knowledge (Phillips (1981). Informants become "key" because of their knowledge of the firm, familiarity with its environment, and access to strategic and financial information (Aguilar, 1967).

The Marketing Research Association (MRA) assisted us by providing a mailing list of their members. First, we contacted 2463 (nonacademic) members by traditional mail to (1) screen for whether their firm produced customized marketing research offerings and (2) request the member's participation in the study. Second, after receiving the 'willing to participate' responses from the respondents, when multiple respondents from the same firm agreed to participate, the questionnaire along with a cover letter and pre-paid return envelope, was subsequently sent only to the respondent whose official job title suggested that the member was most knowledgeable. Third, three weeks after the mailing of the questionnaire, another copy of the questionnaire and a reminder letter were mailed.

Overall, 350 MRA respondents (representing 350 different marketing research firms and departments) agreed to participate. After receiving the survey, 39 of the 350 respondents opted out, noting that (contrary to our original information) their firms were not involved with customized marketing research offerings. Of the remaining 311, 166 respondents returned completed surveys. However, five questionnaires were eliminated because of missing data, leaving 161 usable questionnaires, for a response rate of 52%.

3.2. Key informant characteristics

The questionnaire screened for respondents with low levels of knowledge through respondents' self-assessment of knowledgeability (Phillips, 1981). Respondents were queried on a seven point scale about the extent of their knowledge of their firm's marketing research practices and offerings. The mean score of 6.58 indicates that the respondents perceived themselves to be highly knowledgeable and, therefore, appropriate for the study's purposes. Furthermore, respondents' average experience with their firm was 12 years, which suggests appropriate, firm-level knowledge.

3.3. Sample characteristics

The resulting sample varies greatly in terms of firm and respondent characteristics. The firms vary greatly in terms of number of years in existence (<10, 21%; 11–20, 29%; 21–35, 31%; and >35, 17%), number of employees (<15, 28%; 16–50, 29%; 51–150, 19%; and >150, 23%), number of clients (<25, 30%; 26–50, 27%; 51–100, 14%; and >100, 18%), and revenue in millions (<1, 20%; 1.01–5, 23%; 5.01–20, 18%; and >20, 7%). Furthermore, the firms provide several different types of services (qualitative, 81%; quantitative, 89%; syndicated, 16%; standardized, 28%; fieldwork, 74%; coding and data entry, 66%; analytical, 61%; data analysis, 70%; and other, 28%). Also, the respondents (male, 47%; female, 53%) span a wide range of ages (<35, 20%; 36–45, 31%; 46–55, 31%; and >55, 18%).

3.4. Nonresponse bias

Potential nonresponse bias was assessed by comparing early and late respondents (Armstrong & Overton, 1977). No significant differences were found between early and late respondents for important constructs, such as customized offerings, trust, commitment, and respondent's knowledge level about their firm's marketing research practices and offerings.

3.5. Pretest

We pretested the survey with five marketing research experts (not in our MRA sample) who provided suggestions for improving the questionnaire. Although pretest respondents suggested some minor (though

Table 1
Measurement results.

Construct	Loading	Construct Reliability	Variance Extracted
Customized products (CP)		0.85	0.59
CP1	0.89		
CP2	0.79		
CP3	0.82		
CP4	0.52		
Relational trust (RT)		0.86	0.60
RT1	0.74		
RT2	0.80		
RT3	0.77		
RT4	0.79		
Relational commitment (RC)		0.94	0.79
RC1	0.91		
RC2	0.84		
RC3	0.93		
RC4	0.87		
Structural intensity (SI)		0.69	0.45
SI1	0.829		
SI2	0.75		
SI	0.33		
Shared values (SV)		0.92	0.78
SV1	0.94		
SV2	0.96		
SV3	0.74		
Common goals (CG)		0.83	0.62
CG1	0.70		
CG2	0.82		
CG3	0.84		
Employees' knowledge of customers (EKC)		0.81	0.59
ECK1	0.81		
ECK2	0.88		
ECK3	0.58		
Employees' technical knowledge and abilities (ETKA)		0.86	0.6
ETKA1	0.73		
ETKA2	0.68		
ETKA3	0.82		
ETKA4	0.86		
Information exchange (IE)		0.80	0.58
IE1	0.76		
IE2	0.76		
IE3	0.76		
Creativity (CR – Formatively measured)	0.90		

helpful) changes in the wording of some items and in the questionnaire's formatting, they indicated no problems with its length or the time required to complete it.

3.6. Measures

All the study's constructs were measured using items from existing scales that had been modified for the specific context of the research. A complete list of items and the sources of the scales is provided in [Appendix A](#).

Table 2
Correlation matrix.

	Mean	Std Dev	CP	RT	RC	SI	SV	CG	EKC	ETKA	IE	CR
CP	6.2	0.7	1									
RT	6.3	0.7	0.52	1								
RC	5.7	1.1	0.38	0.65	1							
SI	5.5	1.0	0.27	0.37	0.56	1						
SV	6.3	0.9	0.42	0.7	0.56	0.62	1					
CG	5.5	1.0	0.59	0.62	0.76	0.54	0.57	1				
EKC	5.6	1.1	0.40	0.26	0.29	0.49	0.23	0.46	1			
ETKA	5.7	1.0	0.3	0.34	0.42	0.53	0.27	0.55	0.46	1		
IE	5.6	1.0	0.37	0.50	0.65	0.75	0.491	0.75	0.57	0.70	1	
CR	4.9	0.9	0.14	0.09	0.19	0.14	0.064	0.28	0.25	0.25	0.28	1

Note: CP - Customized Products; RT - Relational Trust; RC - Relational Commitment; SI - Structural intensity; SV - Shared Values; CG - Common Goals; EKC - Employees' knowledge of customers; ETKA: Employees' Technical Knowledge and Abilities; IE - Information Exchange; and CR - Creativity.

3.7. Common method bias precautions and test

When the data on the major dependent variable and the independent variables come from the same source, [Podsakoff, MacKenzie, Lee, and Podsakoff \(2003\)](#) recommend that potential common method bias should be controlled by psychological separation of measures of the dependent and independent variables, protecting respondent anonymity, reducing evaluation apprehension, counterbalancing question order, and improving scale items. In developing the questionnaire, we followed their recommendations. We also checked for same source bias using Harman's single-factor test. Exploratory factor analysis using SAS did not reveal a single factor and, of the factors indicated, one general factor did not account for the majority of the covariance. Therefore, same source bias does not appear to be a problem. Next, following [Paulraj, Lado, and Chen \(2008\)](#), we used LISREL 8.7 to compare two measurement models – one including just the traits and factors and one that included a single unmeasured latent method factor. The results of the analyses show no indication of same source bias.

3.8. Measurement validation

Consistent with [Andrews and Smith \(1996\)](#), a separate measurement model was run and a summated scale was created for organizational creativity. The full measurement model, with eleven constructs and fifty items, was then assessed and respecified to improve model fit using five criteria: (1) insignificant loadings, (2) large, unexplained shared variance with other items, i.e., large modification indices, $MI > 3.84$, (3) large, shared common variance of items with other constructs' items, (4) large normalized residuals, $NR > 2$, and (5) underlying theory of the model and constructs. The full measurement model shows good fit: $\chi^2 = 696.38$, d.f. = 451, $p < 0.01$; comparative fit index (CFI) = 0.98; incremental fit index (IFI) = 0.98; and root mean square error of approximation (RMSEA) = 0.051 (see [Table 1](#)). Furthermore, the reliability, convergent validity, and discriminant validity were assessed for each of the constructs. As (1) a majority of the modification indices and residuals were below two and (2) the full measurement model has acceptable fit ([Ghosh, Dutta, & Stremersch, 2006](#)), the measures show satisfactory unidimensionality. Scale reliability can be assessed through the composite reliability and average variance extracted, with composite reliability values > 0.60 being desirable and values of average variance extracted > 0.50 being satisfactory ([Bagozzi & Yi, 1988](#); [Fornell & Larcker, 1981](#)). With the exception of structural intensity's average variance extracted being slightly under 0.50, the composite reliability and the average variance extracted of all scales are acceptable (see [Table 1](#)).

As to convergent validity, because all t-values for item loadings are significant at $p < 0.01$, convergent validity is satisfactory. Also, since no correlation between any two constructs, plus or minus twice the standard error, includes 1.0, discriminant validity is evident (see [Table 2](#)). Also, for each pair of constructs, we estimated both a single factor and

Table 3
Results of structural models.

Proposed model	
Path	Estimate
Direct effects	
EKC → CP (Hypothesis 1)	0.35***
ETKA → CP (Hypothesis 2)	0.20**
CR → CP (Hypothesis 3)	0.03(ns)
IE → EKC (Hypothesis 4)	0.75***
IE → ETKA (Hypothesis 5)	0.81***
IE → CR (Hypothesis 6)	0.47***
RC → IE (Hypothesis 7)	0.40***
RT → IE (Hypothesis 8)	0.12(ns)
RT → RC (Hypothesis 9)	0.33***
SI → RC (Hypothesis 10)	0.27***
CG → RC (Hypothesis 11)	0.64***
CG → RT (Hypothesis 12)	0.340***
SV → RT (Hypothesis 13)	0.40***
Indirect effects	
IE → CP	0.440***
RC → CP	0.11***
RT → CP	0.18***
SI → CP	0.05**
CG → CP	0.15***
SV → CP	0.04**

Note 1: CP - Customized Products; RT - Relational Trust; RC - Relational Commitment; SI - Structural intensity; SV - Shared Values; CG - Common Goals; ECK - Employees' Knowledge of Customers; ETKA: Employees' Technical Knowledge and Abilities; IE - Information Exchange; and CR - Creativity.
 Note 2: ***: $p < 0.01$, **: $p < 0.05$, *: $p < 0.1$, and ns: not significant.
 Note 3: SMC: Squared Multiple Correlation.

a two factors model. All single factor models exhibited poor fit and were rejected. To further assess discriminant validity, we examined the amount of variance extracted by each construct relative to the squared correlations between pairs of constructs. All the variance extracted estimates are greater than corresponding squared correlation estimates. We also checked for VIF for all the independent variables. The maximum

VIF was 2.82, which is substantially below the value of 10 that would indicate a potential problem.

4. Results

Our analysis of the proposed structural model allows exogenous variables to correlate (see Table 3). The hypothesized structural model shows a reasonable fit to the data: $\chi^2 = 811.54$, d.f. = 480, $p < 0.01$; comparative fit index (CFI) = 0.97; incremental fit index (IFI) = 0.97; and root mean square error of approximation (RMSEA) = 0.058. The proposed model explains 19% variance in customized offerings. As to the hypothesized paths, eleven out of thirteen paths (85%) have the correct direction of signs and significant t-values. Only hypotheses three and eight are not supported (see Fig. 2).

5. Discussion

We investigate why some B2B firms are better than others in customizing professional services for clients. Specifically, our model proposes that (1) the three different forms of IC make firms more effective at customizing B2B professional services, and (2) firms' ISC is an antecedent to the different forms of IC. The structural equation modeling results, using a sample of 161 marketing research firms, provide support for eleven out of the thirteen proposed relationships. Consistent with our first thesis, with the exception of the relationship between creativity and customized offerings, IC is positively related to firms' effectiveness in producing customized professional services. As to why the relationship between creativity and customized offerings is not significant, it is possible that firms that are highly creative may lose sight of client requirements, which, in turn, could result in no influence on customization effectiveness. Perhaps, customization may require a more deliberate approach, rather than a highly creative approach.

The findings are also consistent with the thesis that ISC is an antecedent to the different forms of IC. In investigating this thesis, this paper incorporates the multi-dimensional nature of ISC and explores the interrelationships among the variables belonging to the relational,

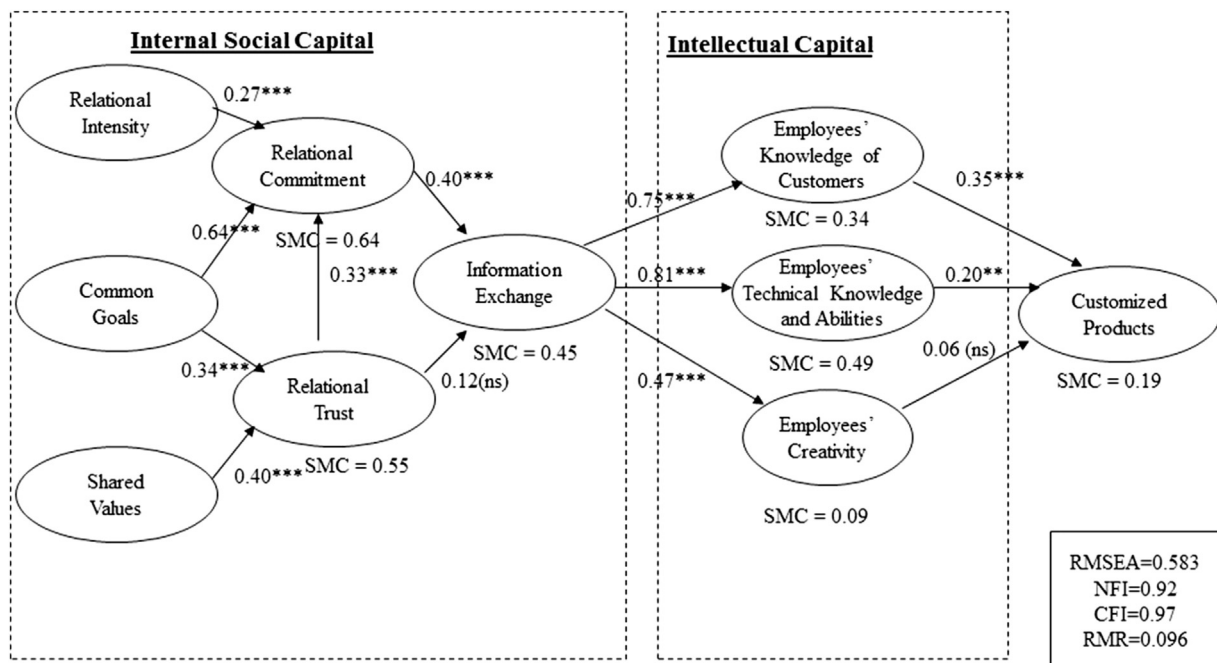


Fig. 2. Structural model with results.

structural, and cognitive dimensions. The structural model reveals that information exchange, a variable belonging to the cognitive dimension of ISC, is related positively to the three different forms of IC. That is, as customization of B2B market offerings requires complex internal exchanges among employees, information exchange can help firms in bolstering their IC. Furthermore, the relational dimension, as captured in relational trust and relational commitment, can facilitate information exchange and cooperative behaviors. However, while relational trust does not directly influence information exchange, it does influence information exchange through relational commitment. That is, trust by itself may not be enough to facilitate information exchange unless mediated by relational commitment.

Structural intensity represents the structural dimension of ISC and, as proposed, is related positively to relational commitment and relational trust. That is, if the organizational structure facilitates the connectedness of employees, they become more committed to, and trusting of, each other. Similarly, the model also shows that (1) shared values and common goals are related positively to relational trust and (2) common goals is positively related to relational commitment. These two constructs represent the cognitive dimension of ISC and, as proposed, are related positively to the relational dimension. Furthermore, these two constructs have a positive, indirect influence on information exchange (another part of the cognitive dimension) through relational trust and relational commitment. That is, shared values and common goals can facilitate information exchange when employees trust each other and are committed to each other. The results also indicate that all the indirect effects on customization are significant, supports the robustness model specification.

5.1. Implications for theory and practice

This study contributes to theory in several ways. First, in contrast to previous research, this study investigates the customization of B2B professional services, an area not previously explored and a potential source of competitive advantage. Although customization has been acknowledged as critical (e.g., Burke et al., 1990; Malhotra, 1996), this study is the first step into exploring customization of B2B professional services. Accordingly, new insights into why some firms are more effective than others in customizing their B2B professional services are provided. Second, drawing from the IC and customization literatures, this study introduces three different forms of IC (employees' knowledge of customers, employees' technical knowledge and abilities, and organizational creativity) that can potentially be resources that help firms customize their B2B professional services more effectively than their competitors. Consistent with and building on Reed et al. (2006), this research introduces and investigates the impact of different forms of IC on customization. The different forms of IC investigated in this paper lend specificity and credence to the IC literature and encourages future researchers to investigate *specific forms* of IC in their research.

Third, this study investigates the role of ISC as a precursor to IC. Our findings support the view that ISC has, indeed, a role to play in creating IC, which supports the thesis that social capital is not a constituent, but a *facilitator*, of IC. Previous research has tended to ignore the interrelationships among the various constituents of ISC. Therefore, building on Adler and Kwon (2002) and Nahapiet and Ghoshal (1998), this study identifies specific variables that correspond to the multiple dimensions of ISC and investigates the interrelationships among the different variables belonging to the structural, relational, and cognitive dimensions. Fourth, we extend social capital and relationship marketing research in that our study investigates all *three* dimensions of social capital: structural, cognitive, and relational. The results show that relationships exist among the different constructs belonging to different dimensions of ISC. This is one of the first empirical papers to include multiple

constructs and multiple of dimensions of social capital. Future researchers should take this further by expanding on the constructs belonging to the structural, cognitive, and relational dimensions of social capital. Fifth, we propose that the model has potential for being generalizable to other B2B contexts (both goods and services) that involve customized market offerings.

This study contributes to practice in four major ways. First, because different forms of IC can help firms customize their market offerings more effectively than their competitors, firms can begin to develop their IC for customization using this research as a starting point. For example, intimate knowledge of customer requirements, marketing research related knowledge in terms of instrument development, analysis techniques, and interpretation ability, and ability to develop creative research solutions can greatly facilitate customizing research services. Second, firms considering the IC concept should focus on specific forms of IC that could increase their marketplace competitiveness. That is, firms could undertake an IC audit to determine which forms of IC are deficient and then committing resources to acquiring or developing them. Third, firms should also focus on combinations of relevant forms of IC that contribute to their performance. For example, software development firms could look at specific forms of software development IC that can make them more effective than competitors. Fourth, as ISC is indeed a precursor to IC, our results suggest ways for firms to develop ISC: (1) develop organizational structures and policies that promote high levels of connectivity among employees and (2) provide an organizational environment that is conducive to developing shared values, common goals, and information exchange.

5.2. Limitations and future research

First, this study measured customization only from the suppliers' perspective. Exploratory research at the beginning of our study showed that it would be impossible for us to get the suppliers' customers' views as to how effective each firm in our sample was at customizing marketing research offerings. However, other researchers might have access to dyadic data that includes both B2B firms that produce customized offerings and their respective customers. Such dyadic data would be a useful extension of our study. Second, this study uses marketing research firms as a context. Although the model is proposed as generalizable to other contexts, some of the results could be specific to marketing research firms. Therefore, our findings would be usefully replicated and extended in other contexts, such as advertising agencies, sales promotion firms, and industrial goods' manufacturers.

Third, our study focuses on ISC. Worth exploring would be whether (or how) *external* social capital influences customization. Fourth, this study included six variables as representing the three different dimensions of social capital. Exploring other relevant variables and corresponding interrelationships might prove worthwhile. Fifth, this study's sample is solely from U.S. firms. Replicating the study using firms in other countries would be desirable. Sixth, this study used single informants for getting responses for organizational level variables. Future research might investigate multiple respondents from organizations. Seventh, future research could also look at how firms gather information, transform it into knowledge, and utilize this knowledge to achieve desirable customization outcomes. Finally, this study's cross sectional design limits causality inferences. Therefore, longitudinal research on the customization of B2B market offerings in general and B2B professional services in particular, would be desirable.

In B2B marketing, the customization of offerings offers firms a valuable opportunity for achieving competitive advantages. Our study contributes to this emerging area of research, but more theory development and testing is clearly required.

Appendix A. Measures

Note: Items in bold were retained after the measurement model analysis. All scales, except those noted, are 7 point, disagree/agree. (*R): Item was reverse-scored.

Structural intensity (Sources: Atuahene-Gima, 2002; Kale, Singh, & Perlmutter, 2000):

In my organization:

- 1. ... employees have frequent business interactions with each other
- 2. ... because of frequent interactions, employees can be described as a tightly knit group
- 3. ... employees frequently interact in social settings
- 4. ... reciprocity is important in employees' relationships with each other

Shared Values (Source: Morgan & Hunt, 1994):

In my organization, employees:

- 1. ... have similar values
- 2. ... place similar importance on integrity
- 3. ... place similar importance on honesty
- 4. ... have similar beliefs about ethical research practices

Common goals (Sources: Tsai & Ghoshal, 1998; Hyatt & Ruddy, 1997):

Employees in my organization:

- 1. ... actively participate in defining the organization's goals
- 2. ... have accepted our organization's goals as their own
- 3. ... work actively at supporting the achievement of our organization's goals
- 4. ... are enthusiastic about pursuing the collective goals and missions of the organization
- 5. ... have a similar or organizational vision

Relational trust (Sources: Morgan & Hunt, 1994; Yilmaz & Hunt, 2001):

Employees in my organization consider other employees as people who:

- 1. ... are honest
- 2. ... can be counted on to do what is right
- 3. ... are faithful
- 4. ... have confidence in each other
- 5. ... have high integrity
- 6. ... are not reliable (*R)
- 7. ... are capable
- 8. ... are competent
- 9. ... are trustworthy

Relational commitment (Source: Morgan & Hunt, 1994):

Employees in my organization view their relationships with other employees:

- 1. ... as something that they are very committed to
- 2. ... as very important
- 3. ... as something that the employees intend to maintain indefinitely
- 4. ... as something that they really care about
- 5. ... as something that they are willing to expend significant efforts to maintain

Customized products (Sources: Cooper, 1979; Perdue & Summers, 1991; Stump et al., 2002; and Zahay & Griffin, 2003):

Our research products:

- 1. ... are well customized to our customer needs
- 2. ... adapted to help our customers solve specific problems
- 3. ... fit well with our customers' requirements

- 4. ... are tailor-made for our customers

5. ... offer well-tailored features for customers

Employees' knowledge of customers (Source: Li & Calentone, 1998):

With reference to our firm's customers (clients), we:

- 1. ... have thorough knowledge of their needs
- 2. ... are regularly in touch with them to learn their needs
- 3. ... regularly gather valuable information
- 4. ... fully understand their businesses

Employees' technical knowledge and abilities (Sources: Jap, 1999; Song & Parry, 1997a, 1997b):

Employees in my organization:

- 1. ... have good marketing research skills
- 2. ... have highly specialized research knowledge
- 3. ... have a wide variety of capabilities that contribute to our efforts at research product development
- 4. ... are, overall, highly knowledgeable about marketing research

Employees' information exchange (Sources: Mohr & Spekman, 1994; Selnes & Sallis, 2003):

Employees in my organization exchange information:

- 1. ... related to changes in clients' needs, preferences, and behaviors
- 2. ... quickly, as unexpected client problems arise
- 3. ... related to changes in research know-how
- 4. ... on successful and unsuccessful research products
- 5. ... on changes needed in organizational strategies and policies

Meaningfulness (Source: Andrews & Smith, 1996):

Our marketing research products tend to be:

Trendsetting **Warmed Over** (*R)
1 2 3 4 5 6 7

Average..... **Revolutionary**
1 2 3 4 5 6 7

Nothing special **An industry model**
1 2 3 4 5 6 7

Novelty (Sources: Gatignon & Xuereb, 1997; Moorman, 1995; and Cooper, 1979):

Our research products:

- 1. ... overall, are similar to our main competitors' research products (*R)
- 2. ... in general, tend to be very different from our competitors' research products
- 3. ... are not substantially different from one customer to the other (*R)
- 4. ... in general, are highly creative, compared to our competitors' efforts
- 5. ... tend to be very ordinary (*R)

References

Aarikka-Stenroos, L., & Jaakkola, E. (2012). Value co-creation in knowledge intensive business services: A dyadic perspective on the joint problem solving process. *Industrial Marketing Management*, 41, 15–26.
 Adler, P. S., & Kwon, S.-W. (2002). Social capital: Prospects for a new concept. *Academy of Management Review*, 27(1), 17–40.

- Aguilar, F. J. (1967). *Scanning the business environment*. New York: Macmillan Co.
- Andrews, J., & Smith, D. C. (1996). In search of the marketing imagination: Factors affecting the creativity of marketing programs for mature products. *Journal of Marketing Research*, 33(May), 174–187.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 14(August), 396–402.
- Atuahene-Gima, K. (2002). *The social capital of the top marketing team, inter-firm market learning capability, and business performance: A test of a mediating model*. (MSI Working Paper Series).
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94.
- Baxter, R., & Matear, S. (2004). Measuring intangible value in business-to-business buyer-seller relationships: An intellectual capital perspective. *Industrial Marketing Management*, 33, 491–500.
- BizEd (2016). *Top 4 CEO concerns*. 18.BizEd July/August.
- Burke, R. R., Rangaswamy, A., Wind, J., & Eliashberg, J. (1990). A knowledge based system for advertising design. *Marketing Science*, 9(3), 212–229.
- Chan, K. W., Yim, C. K., & Lam, S. S. K. (2010). Is customer participation in value creation a double-edged sword? Evidence from professional financial services across cultures. *Journal of Marketing*, 74(May), 48–64.
- Cicourel, A. V. (1973). *Cognitive sociology*. Harmondsworth, England: Penguin Books.
- Cooper, R. G. (1979). The dimensions of industrial new product success and failure. *Journal of Marketing*, 43(Summer), 93–103.
- de Brentani, U., & Ragot, E. (1996). Developing new business-to-business professional services: What factors impact performance? *Industrial Marketing Management*, 25, 517–530.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Gatignon, H., & Xuereb, J. -M. (1997). Strategic orientation of the firm and new product performance. *Journal of Marketing Research*, 34(February), 77–90.
- Ghosh, M., Dutta, S., & Stremersch, S. (2006). Customizing complex products: When should the vendor take control? *Journal of Marketing Research*, 43(November), 664–679.
- Gilmore, J. H., & Pine, J. B. (1997). The four faces of mass customization. *Harvard Business Review*, 75(1), 91–101.
- Hunt, S. D. (2000). *A general theory of competition: Resources, competences, productivity, economic growth*. Thousand Oaks, CA: Sage Publications.
- Hunt, S. D., Morgan, & Morgan, R. M. (1995). The comparative advantage theory of competition. *Journal of Marketing*, 59(April), 1–15.
- Hyatt, D. E., & Ruddy, T. M. (1997). An examination of the relationship between work group characteristics and performance: Once more into the breach. *Personnel Psychology*, 50(3), 553–585.
- Hughes, M., & Perrons, R. K. (2011). Shaping and re-shaping social capital in buyer-supplier relationships. *Journal of Business Research*, 64, 164–171.
- Jap, S. D. (1999). Pie-expansion efforts: Collaboration processes in buyer-supplier relationships. *Journal of Marketing Research*, 36(November), 461–475.
- Kale, P., Singh, H., & Perlmutter, H. (2000). Learning and protection of proprietary assets in strategic alliances: Building relational capital. *Strategic Management Journal*, 21(3), 217–237.
- Kohtamäki, M., Partanen, J., & Moller, K. (2013). Making a profit with R&D services – The critical role of relational capital. *Industrial Marketing Management*, 42, 71–81.
- Kotha, S. (1995). Mass customization: Implementing the emerging paradigm for competitive advantage. *Strategic Management Journal*, 16(5), 21–42.
- La, V., Patterson, P., & Styles, C. (2009). Client-perceived performance and value in professional B2B services: An international perspective. *Journal of the International Business Studies*, 40, 274–300.
- Li, T., & Calentone, R. (1998). The impact of market knowledge competence on new product advantage: Conceptualization and empirical examination. *Journal of Marketing*, 62(October), 13–29.
- Levitt, T. (1981). Marketing intangible products and product intangibles. *Harvard Business Review*, 59(3), 94–102.
- Liechty, J., Ramaswamy, V., & Cohen, S. H. (2001). Choice menus for mass customization: An experimental approach for analyzing customer demand with an application to a web-based information service. *Journal of Marketing Research*, 38(May), 183–196.
- Malhotra, N. K. (1996). *Marketing research – An applied orientation*. NJ: Prentice Hall.
- Mohr, J., & Spekman, R. (1994). Characteristics of partnership success: Partnership attributes, communication behavior, and conflict resolution techniques. *Strategic Management Journal*, 15(2), 135–152.
- Mohrman, S. A., Finegold, D., & Klein, J. A. (2002). Designing the knowledge enterprise: Beyond programs and tools. *Organizational Dynamics*, 31(2), 134–140.
- Moorman, C. (1995). Organizational market information processes: Cultural antecedents and new product outcomes. *Journal of Marketing Research*, 32(3), 318–335.
- Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(July), 20–38.
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242–266.
- Nielsen, B. B., & Nielsen, S. (2009). Learning and innovation in international strategic alliances: An empirical test of the role of trust and tacitness. *Journal of Management Studies*, 46, 1031–1056.
- Paulraj, A., Lado, A. A., & Chen, I. J. (2008). Inter-organizational communication as a relational competency: Antecedents and performance outcomes in collaborative buyer-supplier relationships. *Journal of Operations Management*, 26(1), 45–64.
- Perdue, B. C., & Summers, J. O. (1991). Purchasing agents' use of negotiation strategies. *Journal of Marketing Research*, 28(May), 175–189.
- Phillips, L. W. (1981). Assessing measurement error in key informant reports: A methodological note on organizational analysis in marketing. *Journal of Marketing Research*, 18(November), 395–415.
- Pine, B. J., Peppers, D., & Rogers, M. (1995). *Do you want to keep your customers forever?* Harvard Business Review, 103–114 (March–April).
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. -Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Reed, K. K., Lubatkin, M., & Srinivasan, N. (2006). Proposing and testing an intellectual capital-based view of the firm. *Journal of Management Studies*, 43(4), 867–893.
- Seidler, J. (1974). On using informants: A technique for collecting quantitative data and controlling for measurement error in organization analysis. *American Sociological Review*, 39, 816–831.
- Selnes, F., & Sallis, J. (2003). Promoting relational learning. *Journal of Marketing*, 67(July), 80–95.
- Shapiro, B. P. (1977). Product policy in different types of industrial companies. *HBS teaching note 9-577-074*.
- Song, M. X., & Parry, M. E. (1997a). The determinants of Japanese new product successes. *Journal of Marketing Research*, 34(February), 64–76.
- Song, M. X., & Parry, M. E. (1997b). A cross-national comparative study of new product development processes: Japan and the United States. *Journal of Marketing*, 61(April), 1–18.
- Spring, M., & Dalrymple, J. F. (2000). Product customization and manufacturing strategy. *International Journal of Operations & Production Management*, 20(4), 441–467.
- Stump, R. L., Athaide, G. A., & Joshi, A. W. (2002). Managing seller-buyer new product development relationships for customized products: A contingency model based on transaction cost analysis and empirical test. *The Journal of Product Innovation Management*, 19(6), 439–454.
- Tollin, K. (2002). Customization as a business strategy – A barrier to customer integration in product development? *Total Quality Management*, 13(4), 427–439.
- Töllner, A., Blut, M., & Holzmüller, H. H. (2011). Customer solutions in the capital goods industry: Examining the impact of the buying center. *Industrial Marketing Management*, 40(5), 712–722.
- Tsai, W., & Ghoshal, S. (1998). Social capital and value creation: The role of intrafirm networks. *Academy of Management Journal*, 41(4), 464–476.
- Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68(1), 1–18.
- Wang, Y., & Ma, S. (2014). How customer participation influences co-creation outcomes when faced with different ambiguities in the professional service industry. *AMA Summer Educators' Proceedings, 2014*, B5–B13.
- Wind, Y., & Rangaswamy, A. (2001). Customization: The next revolution in mass customization. *Journal of Interactive Marketing*, 15(1), 13–32.
- Wu, L. -W., Lii, Y. -S., & Wang, C. -Y. (2015). Managing innovation through co-production in interfirm partnering. *Journal of Business Research*, 68, 2248–2253.
- Yilmaz, C., & Hunt, S. D. (2001). Salesperson cooperation: The influence of relational, task, organizational, and personal factors. *Journal of the Academy of Marketing Science*, 29(4), 335–357.
- Zahay, D., & Griffin, A. (2003). Information antecedents of personalization and customization in business-to-business service markets. *Journal of Database Marketing*, 10(3), 255–271.