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Editorial

It is my pleasure to present the inaugural issue of the *Journal of Academy of Business and Emerging Markets.* It has five excellent articles and a book review. In the lead article, *Fantazy and Mukerji* from Canada examine the sequential relationships among the six factors: the strategic purchasing (SP) to supply chain capabilities in terms of (bilateral communications and information sharing, supplier relationships and involvement, and the number of partners and level of trust and organization financial performance (FP) and non-financial performance (NFP). Using data from UAE and employing Structured Equation Modeling, findings show that SP has a significant positive effect on supply chain capabilities, and the supply chain capabilities have a strong positive effect on FP. However, SP and supply chain capabilities have moderate effects on NFP and strong effect on FP. This points out that the organizations in UAE are likely to emphasize SP and supply chain capabilities to achieve FP. Conversely, the moderate relationship with NFP shows less concern for NFP in emerging markets such as UAE.

In the next article, *Fekpe and Fiagbey* explore the role of information technology deployment and supply chain performance in the emerging market of Ghana in Africa. This study used empirical data to investigate the relationship between IT deployment and supply chain performance of manufacturing firms in a developing economy. A survey research method and purposive sampling were employed to gather data. A quantitative research approach was adopted to analyse data using Partial Least Squares-Structural Equation Modelling (PLS-SEM) to explore the relationships among the constructs. It is found that there is a statistically significant positive relationship between IT-Use and supply chain performance. Furthermore, collaboration acts as a mediating variable that significantly impacts the IT-Use and supply chain performance relationship. The research emphasizes the importance of collaboration among supply chain partners and IT deployment in improving supply chain performance of manufacturing firms in less developed countries especially where some of the partners are located in foreign countries. Effective IT-Use is expected to address some of the challenges of collaboration and uncertainties regarding delivery of supplies through more effective and efficient information flow.

In the following article, *Nakagawa and Sasaki* explain how affordability and sociability contribute to knowledge flow from emerging markets to advanced countries. In rapidly growing emerging markets that exhibit a significant amount of heterogeneity, innovation activities by multinational corporations undergo a substantial transformation. This phenomenon can be summarized by the appearance of frugal innovation (innovation for emerging markets) and reverse innovation (innovation from emerging markets) to the rest of the world). Although each of them is discussed individually, a few studies have investigated what kind of innovation specific to emerging markets is transferred to the multinationals' headquarters. Using the communications theory, the authors explore the intrinsic value of the information as the main determinant of its transfer, and the aspect of frugal innovation-related projects for emerging markets of Japanese multinationals. Their findings indicate that sociality determines the fundamental level of transfer, and affordability moderates it positively.

In the emerging markets of South Africa, *Eposi, Potgieter and Pelser* examine implementation and compliance of the newly developed Supply Chain Management (SCM) Policy by the South African government for the public sector. The aim of this study was to research policy compliance by local municipalities in the North West province of South Africa. The mixed method research design was employed to obtain the primary data required in addition to the secondary data incorporated. The findings revealed only partial compliance with the SCM policy by all five of the municipalities included in the study. Municipalities face a set of serious challenges and a set of propositions are made to enable municipalities to improve their SCM policy compliance.

In the final article, *Estaban* explores the relationship between democracy (measured by the Freedom in the World index (FIW) and cultural values (measured by employing Hofstede's Cultural Dimensions). The *r*esults from the linear regression indicate the presence of a number of cultures with affinity toward the values associated with the popular imagery of what constitutes democratic rule. These analyses resulted in the identification of positive outliers—countries with low affinity to democratic values but higher than expected democracy scores. Some points of interest are suggested in relation to the identified outliers and their comparison with *Cultural Neighbors*—countries with physical or historical bonds. Finally, through simple correlation, some connections are proposed between the measured items in order to identify critical cultural elements for democracy and democratization.

In the book review section, Ferasso reviews the book titled Foundation of Mixed Methods Research authored by Teddlie C & Tashakkori A and published by Sage, Thousand Oaks.

I do hope you would find the inaugural issue useful. As always, your comments are most welcome.

Most respectfully,

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An empirical study of the relationships among strategic purchasing, supply chain capabilities and performance: SEM approach

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The purpose of the study is to examine the sequential relationships among the six factors: the strategic purchasing (SP) to supply chain capabilities in terms of (bilateral communications and information sharing, supplier relationships and involvement, and the number of partners and level of trust and organization financial performance (FP) and non-financial performance (NFP). Using data from UAE and employing Structured Equation Modeling, findings show that SP has a significant positive effect on supply chain capabilities, and the supply chain capabilities have a strong positive effect on FP. However, SP and supply chain capabilities have moderate effects on NFP and strong effect on FP. This points out that the organizations in UAE are likely to emphasize SP and supply chain capabilities to achieve FP. Conversely, the moderate relationship with NFP highlights that the organizations show less concern for NFP in emerging markets such as UAE.

Keywords: SEM, strategic purchasing, supply chain, performance

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Introduction

Prior to oil crises in early 70s, managers viewed purchasing as a sedentary function role in the business organization (Ammer 1989). However, the major turning point of purchasing strategy started when the significance of the bargaining power began to impact the competitiveness in industry. Since the 80s, organizations started shifting their attitude towards purchasing's role in business strategy. During this period purchasing was considered as supportive function certifying that supplier quality met the production standards. Extant literature indicates a movement toward integrating purchasing into the business's strategic planning process. Today a number of firms realized the ability of purchasing that impacts strategic planning has increased (Carter & Narasimhan 1996). Carter and Narasimhan (1996) noted that "the difference today is that the ability of purchasing to impact strategic planning has increased." Several organizations such as Honda, Ford Motor Company and Siemens Medical system have benefited from strategically-managed purchasing activities (Chenlung et al. 2013, Pressey et al. 2009).

Recently, organizations began to adopt supply chain management (SCM) practices to improve their performance. When SCM was gaining attention in both practice and the academic literature, the concept of strategic purchasing (SP) has also been expanding. Accordingly, the role of purchasing function has changed significantly—from a transactions-oriented function to a higher strategic level function with an emphasis on SCM (Stanley & Wisner 2001). Cousins (2005) contended that purchasing function has been

recently viewed as a main activity that adds value to the process and is considered strategically essential to the success of supply chain organizations. Further, SP means considering the purchasing function to be equally important with other basic functions within the organization such as operations, finance, and marketing (McIvor et al. 1997). It is evident that purchasing is integral to supply chain management (Fantazy et al. 2010, Novack & Simco 1991).

Even though SP and SCM are integral to each other, only a few studies have investigated the impact of SP on supply chain capabilities. For example, some studies that investigated the impact of purchasing on supply chain performance were limited to the manufacturing industry in developed countries (Chen et al. 2004). We expect to see if there are regional distinctions in developing and emerging markets (DCEM); for example, the Middle East. Hence we propose to examine the link among SP, supply management capabilities, and financial and non-financial performance (FP and NFP) in the United Arab Emirate (UAE) manufacturing industry. We use Structural Equation Modeling (SEM) in the LISREL statistical software as it provides a robust basis for empirically verifying relationships.

We make both conceptual and empirical contributions. First, this research extends the existing supply chain literature by suggesting that SP in DCEM face more challenges to SP than supply chains operating in developed countries. Second, due to the highly uncertain business environments and organizational structure that can be found in emerging markets, companies in those countries play an even more important role in supporting and leading supply chain learning efforts, elevating purchasing function, and developing processes to build more SP practices within their supply chains. The empirical contribution relates to the three main findings. First, this research explores the comprehensive multidimensional measures of SP, bilateral communications and information sharing, supplier relationships and involvement, level of trust, financial and non-financial performance as conceptualized in the literature and provides empirical evidence that SP and supply chain capabilities that enhance organizational performance (financial and non-financial) are essential because the SP development involves complex practices that require substantial collaboration from all its members. Second, this research examined the direct relationship between SP and FP and NFP, which were limitations of previous frameworks. Finally, it appears that this research is the first to test the relationships among SP, supply chain capabilities, and performance.

In the following sections, we develop a synthesis of the recent literature to provide a conceptual foundation for the framework, explain the research model and hypotheses, outline the research methodology of the empirical study, present the LISREL research structural model, provide results and data analysis, and present a discussion and implication of the research study. Finally, we conclude with the limitations of the study and directions for further research.

Literature Review

Literature shows that the issue of SP has been extensively discussed in theory. Consequently, the purchasing and supply management practice–performance link has undergone successful but limited empirical investigation exists. Although most studies report a positive relationship between SP practices and firm financial performance, it remains unclear whether and to what extent SP practices relate to supply chain capabilities and non-financial performance (Hesping & Schiele 2015, Yeung et al. 2015, Zimmermann & Foerstl 2014). Carr (2000) empirically evaluated SP practices in Taiwan which included three factors in this model: purchasing risk taking, purchasing knowledge and skills, and strategic purchasing. Their findings indicate that purchasing risk-taking impacts purchasing knowledge and skills and purchasing knowledge and skills and SP for high performing firms are stronger than for low performing firms. Similarly, Chen et al. (2004) proposed a model of strategic supply management and argued that SP can stimulate sustainable competitive advantage by enabling firms to: (1) foster close

working relationships with a limited number of suppliers; (2) promote open communication among supply-chain partners; and (3) develop long-term strategic relationship orientation to achieve mutual gains. The results of the US-based study provide support for the links between SP, supply management, customer responsiveness, and financial performance of the buying firm.

On the other hand, Paulraj et al. (2006) did not examine strategic purchasing model per se; they highlighted the growing importance of SCM that led to an increasing recognition of the strategic role of purchasing, which has recently evolved and expanded from buying to procurement and supply management. The authors characterized firms into three strategic purchasing stages the strategic focus, strategic involvement of the purchasing function and the status and visibility of the purchasing professionals. The study provides support for the importance of SP by showing that, by moving towards the more advanced stages, firms at the emerging stage of SP can achieve better supply integration. The finding of this study further revealed that SP can have a significant impact on supply chain performance for both buyer and supplier firms. Ogden et al. (2007) explored antecedents associated with SP from the existing literature; purchasing's skills, knowledge, and professionalism, purchasing's status within the organisation, and purchasing's sophistication in managing external relationships in the North American and European countries. The results indicate that differences exist among several countries within these three SP factors, and that purchasing departments with greater strategic position have higher scores on these factors than other purchasing departments. Sanchez-Rodriguez (2009) developed and tested a model that shows the relationships between SP and supplier development as constructs that could have the potential to contribute to create value for the buying firm in terms of better purchasing performance. SP impacts directly on purchasing performance and indirect impact of purchasing performance through supplier development. Thrulogachantar and Zailani (2010) conducted a study in Malaysia to examine the impact of purchasing strategies as a key component function in organizations contribution on manufacturing performance. The results of the study revealed that purchasing strategies have significant positive impact on manufacturing performance which comprises the competitive priorities of the firms in terms of quality, cost, cycle time, new product introduction time line, delivery speed and dependability and finally, customization responsiveness performance.

Karjalainen and Salmi (2013) conducted a comparative empirical study to identify the similarities and differences between the continental purchasing strategies and tools of companies in Western Europe and North America. Their findings indicate that European companies value price reduction and total cost as strategic objectives whereas North American companies emphasize compliance with social and ethical guidelines. The study also reported that, both groups place little emphasis on environmental objectives. However, in terms of tools, North American buyers have higher utilization of electronic tools in purchasing and in communicating with suppliers, while European buyers appear to more extensively use purchasing tools associated with rating and auditing suppliers. In another study, Hartmann et al. (2012) conducted an empirical study of purchasing and supply management of U.S. major manufacturing companies across the eight industry sectors. They found that strategic purchasing and supply management has a direct effect on financial success, which in turn indirectly affects financial performance through three operational performances (cost, quality, and innovation performance). Chen-Lung et al. (2013) examined the effects of purchasing activities and the purchasing function's involvement with corporate strategy on manufacturing competitiveness. The results suggested that the intensity and efficacy of purchasing activities and strategic involvement vary between Asia and Western Europe/USA. The samples adequately fit the purchasing model, but the Asian samples do not. The findings suggested that national differences matter in implementing purchasing activities.

Hesping and Schiele (2015) presented a conceptual framework claiming it is the state of the art in the purchasing strategy literature. In an effort to conceptualize the research field, this study extended existing stages of strategy development in purchasing by developing a comprehensive framework integrating sourcing categories and sourcing levels as levels of analysis. The proposed framework has been structured

as a hierarchical framework fostering a multi-stage understanding of strategy development in purchasing. The authors used a hierarchy of stages that emerges when general strategy is disaggregated into executable and controllable activities. They have suggested five levels of strategies: (1) firm strategy; (2) purchasing strategy as a particular functional strategy; (3) category strategies for the multitude of supply markets; (4) effectuation by a set of tactical sourcing levers; and (5) strategies for each supplier within a sourcing category. Based on earlier SP literature, Yeung et al. (2015) underlined that SP has direct and indirect positive associations with suppliers' performance. They argued that an inequity perception may affect transaction-cost calculus and lead to alliance failure if overlooked. Findings indicate that negative inequity perceptions exist from buyer's perspective and the strategic purchasing—quality perception assumption should be augmented to the basic transaction cost economics framework. Given the discussion, we investigate the issue of SP further and develop and test relationship among the variables selected from prior studies in the context of emerging markets.

Hypotheses Development

Figure 1 represents the conceptual framework linking SP with supply management capabilities and performance. In recent years, practitioners and academics have adopted a long-term relationship approach to explain how buyer-supplier relationships can be a source of competitive advantage (Rodríguez 2009). Strategic purchasing is creating an effective supply chain that requires that all players within the chain should be linked and they work toward achieving customer needs (Carr & Pearson 2002, Carr & Smeltzer (1997). This would necessitate developing a strategic plan for individual customers (buyers), and consequently realign the supply chain's capabilities to fit the end customer demand. Equally, the buying firm's supply management tasks should be strategically adjusted to match the overall goals and business strategies of the supply chain. This suggests that SP should precede the adoption of supply management capabilities, including bilateral communications and information sharing (BC_IS) (Chen et al. 2004), supplier relationships and involvement (SR_I) (Seth et al. 2006), the number of supply chain partners, and the level of trust (NP_LT) among partners (Paulraj et al. 2008).





Three components of the manufacturing supply chain have been identified from the literature on SP. These components have been combined to develop a framework and seven related hypotheses of FP and NFP from the SP perspective though the supply management capabilities identified in our study is not exhaustive. Other capability dimensions that are of great interest – such as collaboration, agility, resource sharing, and knowledge and joint learning (Cao et al. 2010) – are not included due to the length of the survey and the concerns regarding the parsimony of this research. The three components and their

relevant hypotheses are shown in Figure 1 and discussed in the following sections. SP is the first component identified from the supply chain perspective. Most studies have highlighted the strategic nature of the purchasing strategy (Chenlung et al. 2013, Fantazy et al. 2010, Karjalainen & Salmi 2013). They have argued that purchasing has a crucial role in the management of a firm's resources, developing from a buying function to becoming a strategic partner in the supply chain (Ellram & Carr 1994). We join other researchers to support the argument that purchasing cannot take a place in the firm's strategy until it is viewed as strategic.

Our first hypothesis is concerned with the relationship between SP and BC_IS. Carr and Smeltzer (1999) have shown that firms with SP are more likely to be able to achieve information integration in addition to relational integration. Kraljic (1983) suggests that a SP focus is conducive to BC_IS throughout the supply chain. The link between SP and bilateral communications is well established in the literature. Empirical studies and theoretical studies support the link between SP and BC_IS. One of the empirical studies that examined the relationship between SP and bilateral communications was conducted by Paulraj et al. (2006). Studies have shown that having SP sustains BC_IS, which is critical to achieving effective integration throughout the supply chain (Cox 1996, Fantazy et al. 2010). The literature also suggests a theoretical relationship between SP and bilateral communications and provide support for the existence of a contingency-based relationship between SP and the BC_IS adopted by a firm (Chen et al. 2004, Spekman et al. 1995). So we propose to test the following hypothesis:

H1. Strategic purchasing has a positive effect in the development of purchaser-supplier bilateral communication and information sharing.

The second hypothesis deals with the interaction between the SP and SR_I. The importance of strategic relationships with suppliers has grown in prominence since purchasing has become more strategic in nature (Carr & Pearson 2002, Rodriguez 2009). A long-term relationship is an extended cooperative arrangement between two or more independent firms that engage in business activities for mutual economic gains (Smith et al. 1995). Our second hypothesis is based on the premise that a supply chain is a cooperative or close relationship. A cooperative or close relationship implies an ongoing relationship between two firms involving a commitment over an extended time period, a mutual sharing of information, and the risks and rewards from this relationship (Ellram & Hendrick 1995). Through maintaining such close and long-term relationships among the firms and their suppliers, SP enables the cultivation of greater commitment and trust, which are central to the supply chain objectives. Studies support the link between SP and SR_I. Some of the empirical studies examined the relationship between SP and SR_I were by (Paulraj & Chen 2005, Rodriguez 2009). The literature has also suggested a theoretical relationship between SP and SR_I (Chen and Paulraj, 2004). Hence we hypothesize that:

H2. Strategic purchasing has a positive effect in the development of close relationships with suppliers and their involvement.

The third hypothesis deals with the relationship between SP and the NP_LT. The level of trust increases the willingness of parties to make relationship-specific investments such as human and information systems, which can be leveraged for advantage in the marketplace (Dyer 1997, Hesping & Schiele 2015). Development of partnership and building a high level of trust involve behavioral and economic issues such as trust and asset specificity (Aulakh & Gencturk 2000). Close relationships with suppliers, where trust and cooperation is vital, rather than competition and opportunism, is thus recommended as an avenue for value creation. Studies support the link between SP and NP_LT. For example, the empirical study by Golicic and Mentzer (2006) on examination of relationship magnitude in terms of trust, partnership commitment,

and dependence as independent variables contributes to the relationship value. So we propose to test the following hypothesis:

H3. Strategic purchasing has a positive effect in the development of purchaser and supplier partnership and in building a high level of trust.

The fourth hypothesis examines the relationship between supply chain capabilities and FP and NFP. Supply chain capabilities and SP enhance supply chain performance (Carr & Smeltzer 1999, Hartmann et al. 2012). This hypothesis specifically deals with the relationship between BC_IS and FP and NFP. With appropriate BC_IS, it is possible to enhance performance in terms of reduced costs and improved customer service levels. Therefore, integrating effective supply chain performance. So we test the following hypotheses:

H4a. The level of bilateral communication and information sharing between purchaser and supplier has a positive effect on financial performance (net profit).

H4b. The level of bilateral communication and information sharing between purchaser and supplier has a positive effect on non-financial performance (customer satisfaction).

Next, we examine the relationships between SR_I and performance (FP and NFP). Several authors have emphasized the importance of supplier involvement in the supply chain (Karjalainen & Salmi 2013, Song & DiBenedetto 2008). Strategic purchasing has been identified as a critical antecedent of supplier involvement in the buyer's new product development process (Rodriguez 2009). Similarly, supplier development has also been acknowledged to be a critical element of collaborative buyer-supplier relationships and has been identified as playing a critical role in improving a supplier's capabilities and performance (Krause et al. 1999, Krause et al. 2000). So we propose the following hypotheses:

H5a. The close relationships with suppliers and their involvement has a positive effect on financial performance (net profit).

H5b. The close relationships with suppliers and their involvement has a positive effect on non-financial performance (customer satisfaction).

Other aspects in the research model are the relationships between supply chain partnership and building a high level of trust and performance. In this hypothesis we examine the relationships between NP_LT and performance (FP and NFP).Through maintaining close and long-term relationships among firms and their suppliers, aligning supply chain capabilities cultivates greater commitment and trust, which are essential to the supply chain performance (Madhok & Tallman 1998). Reducing the number of supply bases representing the maintenance of collaborative relationships and having fewer high quality suppliers are also distinctive features of modern buyer-supplier relationships (Helper 1991). Strategic supplier alliances and partnerships can become competitive advantages through the development of long-term mutually beneficial relationships that improve overall performance (Kannan & Tan 2003). Handfield and Bechtel (2002) found that greater trust with key suppliers can improve supply chain performance in terms of responsiveness. So we propose the following hypotheses:

H6a. Partnership and building high levels of trust have a positive effect on financial performance (net profit). H6b. Partnership and building high levels of trust have a positive effect on non-financial performance (customer satisfaction). The final hypotheses examine the direct relationship between SP and FP and NFP. According to the research model, supply chain capabilities play a mediating role between strategic purchasing and performance. The direct effects of SP on performance have been put forward by several researchers (Hesping & Schiele 2015, Rodríguez 2009). SP practices that are well developed, appropriately implemented, and controlled have a positive effect on a firm's performance (Bracker et al. 1988). Therefore, the participation of purchasing in the strategic planning practice of the company (e.g. strategic purchasing) should also have a positive effect on the performance. Thus, we expect that strategic purchasing efforts should lead to increased performance both directly and indirectly, mediated by supply chain capabilities. So we propose to test the following hypotheses:

H7a. Strategic purchasing has a direct positive impact on supply chain financial performance H7b. Strategic purchasing has a direct positive impact on supply chain non-financial performance

Methodology

The questionnaire was divided into seven main sections: organizational information, SP, BC_I, SR_I, NP_LT, FP, and NFP. Table 1 lists factor loading (from Exploratory Factor Analysis (EFA) values using varimax rotation technique), standard errors, t-value, and the measurements of internal reliability (Cronbach's alpha (α) values) of all constructs in this research model. All the variables were measured on a 7-point scale where 1=*Strongly Disagree*, 7=*Strongly Agree*.

Operational Measures of the Variables

Organizational information. This section collects information on the profiles of the organizations. Information collected includes firm name, address, respondent's position within the organization, type of business, number of employees in the organization, approximate turnover, and whether the organization is certified to ISO 9000.

Strategic purchasing (SP). The 10-item scale to measure SP was designed with reference to the strategic supply management model (Carr & Smeltzer 1999, Lawson et al. 2009, Paulraj & Chen 2005). Respondents were asked to indicate the key SP practices in the managing supply chain.

Bilateral Communications & Information Sharing (BC_IS). A 7-item scale was designed to measure BC_IS with reference to the strategic supply management model (Carr & Smeltzer 1999, Paulraj & Chen 2005). This section is related to the level of BC_IS between the firms and their supply chain partners. The EFA reveals that five out of seven items loaded highly (i.e. convergence).

Supplier relationships and involvement (SR_I). A 9-item scale was used to measure the relationship between supply chain partners (Paulraj et al. 2008). The criteria were concerned with several key practices related to managing supplier relationship. Seven out of nine items loaded highly.

Number of Partners and Level of Trust (NP_LT). A 5-item scale was used to measure the number of supply chain partners and level of trust (NP_LT) with reference to the key practices related to managing supply chain partnerships (Ryu et al. 2009). All items loaded highly.

Financial Performance (FP). A 3-item scale (1=Very weak, 7=*Excellent*) was used to measure a firm's financial performance. Respondents were asked to rate overall financial performance in terms of net profit, return on investment, and sales growth (Cao & Zhang 2011, Fantazy et al. 2009, Gunasekaran 2004). All items loaded highly.

Non-Financial Performance (NFP). Non-financial performance realted to customer satisfaction, a 5-item scale (1=Very weak, 7=*Excellent*) adopted from Gunasekaran (2004) and Chang et al. (2003). The five items used to measure NFP are: waiting time (length of time needed before being served), level of customer-perceived value of the service, level of service systems to meet particular customer needs, staff knowledge to respond to customers request, and safety and protection of customer transactions.

Items and	•	F	actor loading		Standard	t- value	Internal
Underlying Factors			-		Error		Consistency (α)
Factor 1: Strategic	1	SP1	.66	✓	.08	8.28	.87
Purchasing (SP)	2	SP2	.66	\checkmark	.05	11.27	
	3	SP4	.63	\checkmark	.11	5.69	
	4	SP7	.62	\checkmark	.06	9.39	
	5	SP8	.60	\checkmark	.05	10.31	
	6	SP6	.60	\checkmark	.06	11.69	
	7	SP9	.45	х	-	-	
	8	SP3	.43	х	-	-	
	9	SP10	0	х	-	-	
	10	SP5	0	х	-	-	
Factor 2: Bilateral	1	BC_IS3	.65	\checkmark	.06	9.71	.90
Communications	2	BC_IS2	.61	\checkmark	.05	11.30	
& Information	3	BC_IS4	.59	\checkmark	.07	7.58	
Sharing (BC_IS)	4	BC_IS6	.58	\checkmark	.09	5.98	
	5	BC_IS1	.52	\checkmark	.06	8.75	
	6	BC_IS5	0	х	-	-	
	7	BC_IS7	0	х	-	-	
Factor 3: Supplier	1	SR_I4	.67	\checkmark	.08	8.25	.85
Relationships &	2	SR_I1	.65	\checkmark	.06	9.54	
involvement (SR_I)	3	SR_16	.65	\checkmark	.06	10.76	
	4	SR_I7	.65	\checkmark	.05	12.45	
	5	SR_I3	.65	\checkmark	.10	6.43	
	6	SR_I2	.64	\checkmark	.08	7.78	
	7	SR_15	.64	\checkmark	.10	5.99	
	8	SR_I8	.31	х	-	-	
	9	SR_19	.34	х	-	-	
Factor 4: Number	1	NP_LT5	.68	\checkmark	.08	8.09	.71
of Supply Chain	2	NP_LT1	.64	\checkmark	.06	9.65	
Partners and Level	3	NP_LT4	.59	\checkmark	.10	5.87	
of Trust (NP_LT)	4	NP_LT2	.53	\checkmark	.07	6.82	
	5	NP_LT3	.52	\checkmark	.07	7.23	
Factor 5: Financial	1	FP1	.73	\checkmark	.10	6.98	.82
Performance (FP)	2	FP2	.63	\checkmark	.11	5.35	
	3	FP3	.51	\checkmark	.07	6.82	
Factor 6: Non-	1	NFP4	.69	\checkmark	.06	10.34	.71
Financial	2	NFP5	.63	\checkmark	.11	5.72	
Performance (NFP)	3	NFP2	.59	\checkmark	.10	5.98	
	4	NFP1	.57	\checkmark	.06	8.92	
	5	NFP3	.53	\checkmark	.08	6.57	

Table 1. Factor Loading, Standard Error, t-value and Internal consistency (α)

Data Collection

The sample was drawn from the Purchasing Manager Classified Business Directory (PMCBD) member list on a cross-industry basis. The range of industries covered in the sample included high uncertainty business environments (computers, furniture, autos, garments, etc.) as well as more stable businesses such as transportation machinery and medical supplies. The PMCBD general member list was further screened to select only executive-level purchasing professionals at the Senior Manager or Vice-Presidential level. Studies have shown that high-ranking respondents tend to be more reliable sources of information than their subordinates (Philips 1981). A self-administrated survey instrument was delivered to the selected 1,200 companies along with a cover letter and prepaid return envelope. To maintain anonymity, the questionnaire asked no personal information, other than the position of the respondent in the company. The cover letter briefly explained the objective of the study and the researcher gave assurance that the responses will be kept strictly confidential. The survey was delivered to the senior management (CEO/President/Chairman, and Vice President) of the manufacturing companies that are located in the UAE region. In this study, the size of a company is measured by the number of employees. Overall, we received 356 useful responses, out of which 212 responses (59.5 percent) were from small-sized companies, 130 responses (36.5 percent) from medium-sized companies, and 14 responses (3.9 percent) from large-sized companies. Therefore, the responses from large-sized companies were excluded in data analysis. Consequently, the analysis is based a sample size of 342 companies. More than 52% of the responses (180 out of 342 were filled by the manager of the participating companies).

Non-Response Bias

Armstrong and Overton (1977) have suggested considering the responses of late respondents as nonrespondents to determine the non-response bias. In this research study, 75 surveys were randomly selected from the first and last wave of completed surveys received. The mean strategic purchasing score of the first 75 surveys was 2.54 whereas it was 2.25 for the last 75 surveys. The t-test results comparing the two groups revealed no statistically significant differences across them for any of the variables studied in this research. The t-test does not completely rule out the existence of non-response bias (Krause et al. 1998). Therefore, the chi-square test was conducted by comparing the size of the companies of those that responded and those that did not respond. The results confirmed that there is no difference in terms of size of the companies that responded and those that did not respond, which indicates that non-response is not an issue in this study.

Data Analysis

In order to test the construct validity of the variables in the study, an EFA was conducted using principal components and varimax rotation. Table 1 reports each extracted factor with corresponding loadings (\geq 0.5). All factor loadings indicate that the measurement variables had a high loading value in their corresponding variable and a low loading value in the other factors. The research model presented in Figure 1 was tested using the SEM LISREL 8.50. It is a multivariate analysis methodology for empirically examining sets of relationships represented in the form of linear causal models (Bollen & Long 1993, Joreskog & Sorbom 2001). Structural equation is an appropriate statistical technique for testing a model that is hypothesized a priori and which assesses the relationships among latent constructs that are measured by multiple scale items where at least one construct is both a dependent and an independent variable (Hair et al. 1995). Mathematically, the SEM decomposes the empirical correlations or co-variances among the measured variables to estimate the path coefficients in the path diagram. Before testing the research model, it is important to check the model identification to obtain the correct estimate of the parameter values. It is important to calculate the number of parameters to be estimated by the model and the observed variables. The calculation shows that the strategic purchasing structural model is overidentified. With 31 observed variables, there are (31*32)/2=496 observations. The number of parameters

to be estimated is 73, including the variances of 31 variables (6 exogenous and 25 indigenous variables that are the disturbance), 31 direct loading on each latent variable, and a total of 11 direct effects. Thus, the model degrees of freedom are 496-73=423 (see Figure 2, df=423). Since the number of observations is greater than the number of parameters to be estimated, we conclude that the strategic purchasing structural model is over-identified and can be tested statistically.



Figure 2. The Strategic Purchasing Structural Model

SP Structural Model Goodness of Fit

Over-identified structural models with more observations than parameters to be estimated usually do not fit the data perfectly (Kline 2004). Therefore, there is a need to measure the degree of fit of such models. The model presented in Figure. 2 shows a good fit of SP, SCM capabilities, and performance to the empirical data. The overall fit of the structural model was assessed with the same set of multiple fit indexes as those of the measurement models with the following results: the observed chi-square was χ^2 =825.15 and the degree of freedom df=423. The goodness-of-fit Indices—the NFI, the NNFI, CFI, and others—obtained by the LISREL program are presented in Table 2.

Table 2. Goodness-	of-Fit Statistics for	Strategic Purchasin	g Structural Model

Measures	Cutoff Value	Actual
Root Mean Square Error Approximation RMSEA	<.08	.04
Goodness of Fit Index GFI	>.90	.99
Adjusted Goodness-of-Fit Index AGFI	>.80	.91
Normed Fit Index NFI	>.90	.98
Non-Normed Fit Index NNFI	>.90	.99
Comparative Fit Index CFI	>.90	.99

Results

The first group of hypothesis deals with the relationships between the SP and supply chain capability dimensions. To test hypotheses H1, H2, and H3, the regression results and the standardized path coefficients representing the direct effects of SP on supply chain capabilities (BC_IS, SR_I, and NP_LT) are shown in Table 3. The results from the regression analysis indicated that all three hypotheses were supported. All of the correlations were significant at different levels and were in the predicted direction. Hypothesis H1, which dealt with the relationship between SP and bilateral communication and information sharing, was tested using the results from the strategic purchasing path model (Table 3, Figure 2). The path coefficient for SP and BC_IS was .59 (p<.01), indicating that SP has a positive impact on BC_IS. The path coefficients for the other remaining two hypotheses were found to have positive impacts on SR_I (.46, p<.01) and NP_LT (.36, p<.01). The second group of hypotheses deals with the relationships between supply chain capability dimensions and supply chain performance. To test hypotheses H4a, H4b, H5a, H5b, H6a, and H6b, the regression results and the standardized path coefficients representing the direct effects of supply chain capability dimensions on supply chain performance (FP and NFP) are shown in Table 4. The results from the regression analysis indicated that all the six hypotheses were positively and significantly supported in the predicted directions.

Table 5. Direct Encets of Strategie Farenasing on Suppry chain capability Dimension					
	Sup				
	BC_IS (H1)	SR_I (H2)	NP_LT (H3)		
Strategic	.59***	.46**	.36***	Path coefficient	
Purchasing SP	.16	.18	.06	Standard Error	
	3.57	2.50	5.45	t-Statistics	

Table 3. Direct	Effects of Strategic	: Purchasing c	on Supply Chai	n Capability	/ Dimensions

*** (p<.01). ** (p<.05). * (p<.10). N=342

Hypotheses H4a and H4b, which dealt with the relationship between BC_IS and FP and NFP, were tested using the results from the strategic purchasing path model. The path coefficient for BC_IS and FP was .43 (p<.01) indicating that BC_IS has a positive impact on FP. The path coefficient for the BC_IS and NFP was .28 (p<.01).

	Supply Chair	_	
	Financial	Non-Financial	
	Performance (FP)	Performance (NFP)	
Supply Chain Capabilities			
Bilateral Communications	.43***	.28**	Path coefficient
& Information Sharing	.16	.10	Standard Error
(BC_IS) (H4a and H4b)	2.60	2.80	t-Statistics
Supplier Relationships &	.50***	.23***	Path coefficient
Involvement (SR_I) (H5a	.18	.07	Standard Error
and H5b)	2.77	3.28	t-Statistics
Number of Partners and	.30*	.31***	Path coefficient
Level of Trust (NP_LT)	.16	.08	Standard Error
(H6a and H6b)	1.80	3.78	t-Statistics

 Table 4. Direct Effects of Supply Chain Capability Dimensions on Performance

*** (p<.01). ** (p<.05). * (p<.10). N=342

Hypotheses H5a and H5b, which dealt with the relationship between supplier relationships and involvement and supply chain FP and NFP, were tested using the results from the strategic purchasing path model. The path coefficient for SR_I and FP (.50, p < .01) indicates that SR_I has a positive impact on FP. The path coefficient for the SR_I and NFP was .23 (p < .01). Hypotheses H6a and H6b, which dealt with the relationships between the number of supply chain partners and the level of trust and supply chain FP and NFP, were tested using the results from the strategic purchasing path model (Table 4, Figure 2). The path coefficient for NP_LT and FP was .30 (p < .01), and for NP_LT and NFP was .31 (p < .01).

To test H7a and H7b, the regression results and the standardized path coefficients representing the direct relationship between SP and performance are shown in Table 5. Our tests on Hypothesis H7a provide support for the existing theory on the relationship between SP and performance. The path coefficient for SP was .35 which has a significant (p<.01) positive relationship with FP. On the other hand, the path coefficient (.20) for SP has relatively less significant (p<.05) relationship with FP. SP has achieved high rates on FP and lower rates on NFP. SP has an impact on FP.

Table 5. Direct Effects	of Strategic Purchasing	on Performance
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	Supply Cha		
	Financial Performance		
	(FP) (H7a)	(NFP) (H7b)	
Strategic	.35***	.20**	Path coefficient
Purchasing SP	.10	.10	Standard Error
	3.43	2.00	t-Statistics

*** (p<.01). ** (p<.05). * (p<.10). N=342

Discussion and Implication for Managers

Purchasing has a strategic role in SCM. This is relevant in the context of a developing country such as UAE in which organizations operate in a challenging economic and sociocultural environment. In our study, strategic purchasing was linked to three supply chain capabilities in terms of bilateral communications and information sharing, supplier relationships and involvement, number of partners and level of trust and organization financial performance and organization non-financial performance.

The significant effect of SP on BC_IS suggests that purchasing managers in emerging markets such as UAE realize the importance of two-way communication in enhancing trust, cooperation, and the importance of sharing information. BC_IS is vital as it is the foundation upon which ideas and processes are being implemented. An understanding of these information sharing enablers helps organizations capitalize on them and positively influence their performance capability. This implies that timely exchange of information through effective communication will improve the performance of organizations.

The role of SR_I in the success of businesses cannot be ignored. The early involvement of suppliers is an essential ingredient to support through the initial phases of product design contributions, quality considerations, and technology suggestions. Purchasing managers in emerging markets are aware of the importance of building good relations with their suppliers. In the past, organizations regarded their suppliers as adversaries and dealt with them on the basis of prices. However, the positive relationships indicated that purchasing managers appreciate strategic cooperation and supplier involvement. Our study supports the view that firms that focus on strategic supplier relationships and involvement achieve greater long-term benefits from their efforts than firms adopting the non-strategic approach (Krause et al. 1998). Therefore, long-term value creation is one of the main organizational objectives of businesses, and SP and SR_I lead to improved performance in the buying firm (customer). Therefore, managers should understand the SP and supplier relationships and involvement and how they are related. Good supplier relations provide benefits such as supplier flexibility in terms of accepting changes in delivery schedules, quality, and quantities.

In the case of the number of partners and the level of trust (NP_LT), the positive association between SP and NP_LT implies that purchasing managers recognize the importance of building an effective supply base to the success of their organizations. One possible explanation for this recognition is that some organizations in emerging markets such as UAE may only be able to source and procure supplies from certain suppliers who have the necessary expertise or access to resources or quality of goods demanded by the buying organization. For example, purchasing minerals is determined by geographical endowments, and organizations that have rights to those deposits are the only organizations a buyer may deal with. SP involves the highest level of strength of relationship within which the supply chain partners integrate their major consumer processes to achieve their common, desired goals based upon mutual trust (Claro et al. 2006, Spekman et al. 1999).

Further, the positive impact of SP on the number of partners and level of trust can be realized in the UAE context. For example, supply may permit the purchasing department to spread risk by expanding its supply base. Therefore, dealing with large number of the supplier's base does not necessarily mean having more suppliers. It may mean fewer but better quality suppliers. Better collaboration may be achieved by broadening the supply base. The trend in a supply chain is to have fewer suppliers and to build better relationships with those suppliers and maintain a high level of trust. For example, many retailers in the UK have reduced the numbers of suppliers. Bookstores have reduced the numbers of publishers. The relationship between SP and performance has been researched from the resource-based and supply chain perspectives. For instance, Carr and Smeltzer (1997) reported the positive effect of SP on performance. The findings of our study support the notion of the positive association between SP and performance that is frequently cited in the literature, although it appears that SP has higher impact on FP than NFP. Supply chains managers need to develop SP to achieve NFP. Positive but moderate of SP and supply chain capabilities with NFP shows that there is a room to better leverage the SP approach for achieving NFP at the inter-supply chain level in UAE. Further, there is possibility to better employ the SP and supply chain capabilities to achieve NFP which could be a source of competitive advantage in terms of high performance achievement. Although, there is no specific explanations in the literature related to the moderate relationship between SP and NFP, it may be that managers in emerging markets may not realize the importance of NFP in the same proportion as they perceive FP. The moderating relationship could be due to cultural issues and style of leadership in the country. Nevertheless, the positive relationship implies that purchasing managers recognize the importance of considering both FP and NFP. The findings of our study show that SP should get more attentions from the supply chain managers in emerging markets, which will in turn improve both FP and NFP.

Direction for Further Research

Further research can be carried out to extend our research model and explore the measures of strategic purchasing, supply chain capabilities, and performance, and incorporate other supply chain capability constructs that were not included in this research such as agility, flexibility, cooperation, and joint knowledge and learning in the research model. Environmental uncertainty and competition pressure may moderate the contribution of supply chain capabilities. Therefore, it may be beneficial to examine the moderation effects of environmental uncertainty and competition pressure in dynamic environments and provide insights for organizations to manage supply chains in competitive environments.

References

Ammer DS 1989. Top management's view of the purchasing function. Journal of Supply Chain

Management, 25(1), 16-21.

- Armstrong JS & Overton TS 1977. Estimating non-response bias in mail surveys. Journal of Marketing Research, 14(August), 396-402.
- Aulakh PS & Gencturk EF 2000. International principal-agent relationships: Control, governance and performance. Industrial Marketing Management, 29(6), 521-38.
- Bollen K & Long J 1993. Testing structural equation models. Newbury Park, CA: Sage.
- Bracker JS, Keats BW & Pearson JN 1988. Planning and financial performance among small firms in growth industry. Strategic Management Journal, 9(6), 591-603.
- Cao M & Zhangc Q 2011. Supply chain collaboration: Impact on collaborative advantage and firm performance. Journal of Operations Management, 29(3), 163-80.
- Cao M, Vonderembseb MA, Zhangc Q & Nathan RTS 2010. Supply chain collaboration: conceptualization and instrument development. International Journal of Production Research, 48(22), 6613-35.
- Carr A & Pearson J 2002. The impact of purchasing and supplier involvement on strategic purchasing and its impact on firm's performance. International Journal of Operations and Production Management, 22(9), 1032–1053.
- Carr AS & Smeltzer LR 1997. An empirically based operational definition of strategic purchasing. European Journal of Purchasing & Supply Management, 3(4), 199-207.
- Carr AS & Smeltzer LR 1999. The relationship of strategic purchasing to supply chain management. European Journal of Purchasing and Supply Management, 5(1), 43-51.
- Carr AS, Leong GK & Sheu C 2000. A study of purchasing practices in Taiwan. International Journal of Operations & Production Management, 20(12), 1427-45.
- Carter JR & Narasimhan R 1996. Is purchasing really strategic? International Journal of Purchasing and Materials Management, 32(1), 20-28.
- Chang SC, Chen-Lung Y, Hsin-Chia C & Chwen S 2003. Manufacturing flexibility and business strategy: an empirical study of small and medium sized firms. International. Journal of Production Economics, 83(1), 13–26.
- Chen IJ, Paulraj A & Lado A 2004. Strategic purchasing, supply management and firm performance. Journal of Operations Management, 22(5), 505-23.
- Chenlung Y, Lin R-J, Krumwiede D, Stickel E & Shen C 2013. Efficacy of purchasing activities and strategic involvement: An international comparison. International Journal of Operations & Production Management, 33(1), 49-68.
- Claro D, Claro P & Hagelaar G 2006. Coordinating collaborative joint efforts with suppliers: The effects of trust, transaction specific investment and information networks in the Dutch Flower Industry. Supply Chain Management: An International Journal, 11(3), 216-24.
- Cox A1996. Relational competence and strategic procurement management, European Journal of Purchasing & Supply Management, 2(1), 57-70.
- Dyer JH 1997. Effective inter-firm collaboration: how firms minimize transaction costs and maximize transaction value. Strategic Management Journal, 18 (7), 535-56.
- Ellram LM & Carr A 1994. Strategic purchasing: a history and review of the literature. International Journal of Purchasing & Materials Management, 30(2), 10-22.
- Ellram LM & Hendrick TE 1995. Partnering characteristics: A dyadic perspective. Journal of Business Logistics 16(1), 41-64.
- Fantazy K, Kumar V & Kumar U 2009. An empirical study of the relationships among strategy, flexibility, and performance in the supply chain context. Supply Chain Management: An International Journal 14(3), 177–88.
- Fantazy K, Kumar V & Kumar U 2010. Supply management practices and performance in the Canadian hospitality industry. International Journal of Hospitality Management 29(4), 685-693
- Fitsgerald KR 1997. Purchasing at Harley links supply with design. Purchasing, 122(2), 56-7.

- Golicic S & Mentzer JT 2006. An empirical examination of relationship magnitude. Journal of Business Logistics, 27(1), 81-108.
- Gunasekaran A 2004. Supply chain management: Theory and applications. European Journal of Operational Research, 159(2), 265-68.
- Hair JF, Anderson RE, Tatham RL & Black WC 1995. Multivariate Data Analysis. Englewood Cliffs: Prentice-Hall.
- Handfield RB & Bechtel C 2002. The role of trust and relationship structure in improving supply chain responsiveness. Industrial Marketing Management, 31(4), 367-82.
- Hartmann E, Kerkfeld D & Henke M 2012.Top and bottom line relevance of purchasing and supply management. Journal of Purchasing Supply Management, 18(1), 22–34.
- Helper SR 1991. How much has really changed between us automakers and their suppliers. Sloan Management Review, 32(4), 15-28.
- Hesping, FH & Schiele H 2015. Purchasing strategy development: A multi-level review Journal of Purchasing & Supply Management 21(2) 38-150.
- Joreskog KG & Sorbom D 2001. LISREL 8: User's Reference Guide. Lincolnwood, IL: Scientific Software International.
- Kannan VR & Tan KC 2003. Attitudes of US and European managers to suppliers' selection and assessment and implications for business performance. Benchmarking: An International Journal, 10(5), 472-89.
- Karjalainen K & Salmi A 2013. Continental differences in purchasing strategies and tools. International Business Review, 22(1), 112–125.
- Kline RB 2004. Principles and practice of structural equation modeling. New York: Guilford Press.
- Kraljic P 1983. Purchasing must become supply management. Harvard Business Review, 61(5), 109-117.
- Krause D, Handfield RB & Scannell TV 1998. An empirical investigation of supplier development: Reactive and strategic processes. Journal of Operations Management, 17(1), 39-58.
- Krause DR, Ragatz GL & Hughley S 1999. Supplier development for the minority supplier's perspective. Journal of Supply Chain Management, 35(4), 33-41.
- Krause DR, Scannell TV & Calantone RJ 2000. A structural analysis of the effectiveness of buying firms' strategies to improve supplier performance. Decision Sciences, 31(1), 33-55.
- Lawson B, Paul D, Cousinsb RB, Handfield C & Petersend KJ 2009. Strategic purchasing, supply management practices and buyer performance improvement: An empirical study of UK manufacturing organizations. International Journal of Production Research, 47(10), 2649-2667.
- Madhok A & Tallman SB 1998. Resources, transactions and rents: Managing value through interfirm collaborative relationships. Organization Science, 9(3), 326-39.
- McIvor R, Humphreys P & McAleer E 1997. The evolution of the purchasing function. Strategic Change, 6(3), 165-79.
- Novack RA & Simco SW 1991. The industrial procurement process: A supply chain perspective. Journal of Business Logistics, 12(1), 145-67.
- Ogden JA, Rossetti CL & Thomas E 2007. An exploratory cross-country comparison of strategic purchasing. Journal of Purchasing and Supply Management, 13(1), 2-16.
- Paulraj A & Chen I 2005. Strategic supply management and dyadic quality performance: A path analytical model. The Journal of Supply Chain Management, 2(3), 4-18.
- Paulraj A, Chen JI & Flynn J 2006. Levels of strategic purchasing: Impact on supply integration and performance. Journal of Purchasing & Supply Management, 12 (3), 107-122.
- Paulraj A, Lado AA & Chen IJ 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.

- Philips LW 1981. Assessing measurement error in key informants' reports. Journal of Marketing Research, 28(4), 395–415.
- Pressey AD, Winklhofer HM & Tzokas NX 2009. Purchasing practices in small to medium-sized enterprises: An examination of strategic purchasing adoption, supplier evaluation and supplier capabilities. Journal of purchasing and supply management, 15(4), 214-26.
- Rodríguez CS 2009. Effect of strategic purchasing on supplier development and performance: A structural model. Journal of Business & Industrial Marketing, 24(3/4), 161-72.
- Ryu I, So SH & Koo C 2009. The role of partnership in supply chain performance. Industrial Management & Data Systems, 109(4), 496-514.
- Sánchez-Rodríguez C. 2009. Effect of strategic purchasing on supplier development and performance: a structural model. Journal of Business & Industrial Marketing, 24(3), 161-72.
- Seth N, Deshmukh SG & Vrat P 2006. A framework for measurement of quality of service in supply chains. Supply Chain Management: An International Journal, 11(1), 82-94.
- Smith KG, Carroll SJ & Ashford SJ 1995. Intra- and inter-organizational cooperation toward a research agenda. Academy of Management Journal, 38(1), 7-23.
- Song M & Di Benedetto CA 2008. Supplier's Involvement and Success of Radical New Product Development in new ventures. Journal of Operations Management, 26(1), 1-22.
- Spekman R, Kamuff J & Spear J 1999. Towards more effective sourcing and supplier management. European Journal of Purchasing and Supply Management, 5(2), 103-16.
- Spekman RE, Stewart DW & Johnston WJ 1995. An empirical investigation of the formation and implications of the organizational buyer's strategic and tactical roles. Journal of Business to Business Marketing, 2(4), 37-63.
- Stanley LL & Wisner JD 2001. Service quality along the supply chain: Implications for purchasing. Journal of Operations Management, 19(3), 287–306.
- Thrulogachantar P & Zailani S 2010. The influence of purchasing strategies on manufacturing performance: An empirical study in Malaysia. Journal of Manufacturing Technology Management, 22(5), 641-63.
- Yeung K, Cheng TCE & Lee PKC 2015. Buyers' perceptions on the impact of strategic purchasing on dyadic quality performances. International Journal of Production Economics, 168, 321-330.
- Zimmermann F & Foerstl K 2014. A meta-analysis of the "purchasing and supply management practiceperformance link." Journal of Supply Chain Management, 50(3), 37-54.

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Information technology deployment and supply chain performance: Evidence from emerging economy

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This study used empirical data to investigate the relationship between IT deployment and supply chain performance of manufacturing firms in a developing economy. A survey research method and purposive sampling were employed to gather data from 85 companies. A quantitative research approach was adopted to analyze data using Partial Least Squares-Structural Equation Modelling (PLS-SEM) to explore the relationships among the constructs. It is found that there is a statistically significant positive relationship between IT-Use and supply chain performance. Furthermore, collaboration acts as a mediating variable that significantly impacts the IT-Use and supply chain performance of collaboration among supply chain partners and IT deployment in improving supply chain performance of manufacturing firms in less developed countries especially where some of the partners are located in foreign countries. Effective IT-Use is expected to address some of the challenges of collaboration and uncertainties regarding delivery of supplies through more effective and efficient information flow.

Keywords: developing country, information technology, manufacturing industry, supply chain performance

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Introduction

Information flow is potentially the biggest driver of supply chain performance and it provides the foundation for other supply chain processes, transactions, and decisions. Information acquisition and sharing do not only allow firms to reduce costs, increase responsiveness and gain competitive advantage, but they also prevent supply chain disruptions by allowing potential supply chain risks and interruptions to be identified, assessed and quantified (Wakolbinger & Cruz 2011). Information flow can be managed and facilitated through the use of information technology (IT). The role of IT is to facilitate coordination and integration of supply chain capabilities efficiently and effectively by securing and analyzing information essential to decision making at all stages of a supply chain (Chandler & Munday 2016, Chopra & Meindl 2016). In addition, the quality of information is equally important in assessing the effectiveness of information sharing on supply chain decision making (Marinagia et al. 2015).

The systematic process of measuring the effectiveness and efficiency of supply chain operations and ensuring continuous improvement in supply chain processes is termed supply chain performance (Sundram et al. 2016). IT plays the important role of promoting integration and coordination among

supply chain partners such that customer demands are successfully met. Although studies have been conducted on the impact of IT-Use on the performance of firms and supply chains, there have been mixed arguments regarding its impacts. Some researchers (e.g. Campo et al. 2010, Sanders 2007, Yang 2014) found a positive relationship between IT deployment and supply chain performance (SCP) while others (e.g. Ghobakhloo et al. 2014, Kim et al. 2015) noted that IT implementation has no effect on SC performance. Some studies (e.g. Campo et al. 2010, Devaraj et al. 2007, Sanders 2007) suggest that though there may be no direct benefits of IT-Use on performance, there exists an indirect relationship between IT-Use and supply chain performance. Most of these studies were conducted on operating environments in developed economies which tend to be more advanced in their appreciation and deployment of IT.

Implementing IT is known to contribute to effective and efficient information flow in any supply chain. There is also evidence that different types of IT have been implemented to various supply chain processes including planning, sourcing, making, delivering, and return. However, quantitative assessment of the relationships between the use of IT and SCP especially in emerging economies has not been explored and documented in the literature. Supply chains in emerging economies typically have global partners where lack of interoperability of technologies can be information flow or communication barriers to local partners with low end technology applications. This study examines the impact of IT-Use on supply chain performance of manufacturing companies in an emerging economy where manufacturing is not the backbone of the economy. The study investigates the direct and indirect relationships between IT-Use and supply chain performance and the mediating effect of collaboration, a factor that enhances the relationship.

Literature Review

There are several definitions for supply chain in the literature. Chopra and Meindl (2016) defined a supply chain as consisting of all parties directly or indirectly involved in fulfilling customer requests and includes the manufacturer, suppliers, transporters, warehouses, retailers and customers. Supply chain integration is a performance improvement approach that develops seamless linkages between the various levels and functions within a supply chain to optimize customer service. Information is the most important flow in supply chain management and it is facilitated by information technology.

In response to the conflicting arguments regarding the impacts of IT deployment on SCP, attempts have been made to establish direct and indirect relationships between some IT variables and SCP. For example, Campo et al. (2010) provided evidence of a positive indirect relationship between specific use of IT and a firm's perceived performance through information sharing and satisfaction obtained from the relationship with the provider. Using path analysis, Yang (2014) observed that strong associations exist between the IT capability of manufacturing firms and their operational collaboration with suppliers and their supply chain agility and performance.

Importance of Information Technology (IT) in Supply Chains

IT has become a unique tool for improving the effectiveness of supply chains especially because every supply chain activity thrives on information. Given the complexity of supply chains especially global supply chains with multiple partners, IT facilitates the development and management of these relationships and interfaces. IT implementation offers benefits such as increased productivity and efficiency, increased performance, quick movement of information between supply chain partners, visibility through more timely and accurate information, cost reduction, amongst others (e.g. Davis-Sramek et al. 2010, Sabherwal & Jeyaraj 2015, Tang & Zimmerman 2013).

Complexities associated with globalization and the need to improve supply chain visibility to remain competitive and profitable require end-to-end supply chain visibility capabilities among supply chain partners. Supply chain visibility is the key enabler that requires the need to implement advanced and innovative IT. The supply chain control tower is one such concept that is an agile cloud platform focusing on providing end-to-end supply chain visibility and control by integrating and extending existing Enterprise Resource Planning (ERP), Warehouse Management System (WMS), and Transportation Management System (TMS with suppliers, manufacturers, 3PLs, and other partners. The concept of the "control tower" is increasingly becoming prevalent in supply chain management and that means having the ability to track deliveries in real time, which in return helps make the delivery process more efficient (Bhosle et al. 2011).

Supply Chain Performance (SCP)

Chang et al. (2013) defined supply chain performance as the evaluation of supply chain management using both tangible and intangible factors. It has been shown that productivity and performance of supply chains are increased with the use of IT. This is because IT enables supply chains to share large quantities of quality information on both tactical and strategic operations thereby affecting inventory velocity, delivery time, responsiveness, costs and product development cycle time in a positive way (Ramayah et al. 2008).

Collaboration in a supply chain optimizes SCP through improved production planning and demand forecasts and ensures the delivery of the right product at the right time to the right location with reduced inventories, avoidance of stock-outs, and improved customer service (Li et al. 2014). Firms such as Nokia, Procter and Gamble, Toyota and Zara have been able to achieve competitive advantages over rival firms through collaboration (Kim & Lee 2010). Through IT enabled collaboration, supply chains can achieve improvements in cost efficiencies such as lower inventory costs, accuracy in ordering, shipping and receiving, and reduction in labor costs (Collins et al. 2010). Information sharing is vital in linking supply chain partners hence for supply chains to be successful, it is important for partner firms to share timely and quality information to coordinate intra- and inter-organizational business activities (Wong et al. 2012).

Theoretical Foundation and Conceptual Framework

Theoretical Foundation

A supply chain can be considered as a network of autonomous firms that are linked together for the purposes of creating products and services (Hearnshaw & Wilson 2013). Supply chain network is thus defined as a supply-product-distribution network where suppliers, manufacturers and distributors are dependent on each other in the areas of strategy, resources, capacity and information (Zeng & Xiao 2014). As a result of this interdependence, firms no longer compete individually but in the form of supply chain networks and the most successful firms are those which better coordinate their cooperative or collaborative partnerships in order to provide better, faster and closer service to end users (Xu et al. 2016).

The network theory is one of the grand theories for purchasing and supply management. The theory describes the relationships between companies in the same supply chain i.e., suppliers, manufacturers, customers or buyers (Wellenbrock 2013). The theory contributes to an understanding of the dynamics of how interacting firms in a supply chain or network adapt their processes and systems to each other through exchange processes and how they can establish mutual and strong relations through close and long-term cooperation or collaboration (Halldorsson et al. 2007). The network theory provides techniques for analyzing structure in a system of interacting agents or partners, represented as a network. Jao-Hong and Chih-Huei (2014) suggest that in order to increase performance for the firm and its entire supply chain, partners in supply chain must maintain collaborative relationships with each other. IT use enhances cooperative relationships and potentially increases the level of collaboration and degree of interaction among firms (Carr 2016).

Hypotheses Development

As noted earlier, there are conflicting arguments regarding the impacts of IT implementation on supply chain performance. This study examines the direct and indirect effects of IT-Use on supply chain performance. Based on the literature review and theoretical background the following hypotheses emerge.

Information Technology (IT) Use

Supply chain performance is substantially improved through the exchange of timely and accurate information among supply chain partners. Through this exchange, manufacturers are better able to align demand with production, suppliers have better visibility and flexibility, and distributors have better accuracy in establishing transportation plans while retailers can increase sales (Yee 2005). IT makes this exchange possible by linking supply chains and making operations easier and faster.

Hall and Saygin (2012) suggest that the performance of any firm or supply chain is dependent on the ability to coordinate activities within the supply chain and IT facilitates the necessary communication, coordination, and collaboration among supply chain partners. The adoption and use of IT is regarded as a source of competitive advantage that can result in superior market performance in terms of sales growth, market development and market share – all of which contribute to the performance of the entire supply chain (Kim & Lee 2010). Campo et al. (2010), Sanders (2007) and Yang (2014) found a positive relationship between IT deployment and SCP. It is therefore hypothesized as follows:

H1. IT-Use has a statistically positive direct relationship with supply chain performance.

Collaboration

Collaboration can be defined as a process by which tasks are jointly performed by two or more organizations in order to obtain collective results (Carneiro et al. 2013). It is an inter-organizational relationship in which supply chain partners share information and responsibilities to achieve common goals and objectives in order to create competitive advantage (Montoya-Torres & Ortiz-Vargas 2014). Collaboration offers many benefits including improved demand forecasts and inventory management (Li 2012). IT has been identified as an essential factor for facilitating the flow of information to enable collaboration among supply chain partners (Aparecida de Mattos & Laurindo 2015). Collins et al. (2010) and Wong et al. (2012) noted that IT enables collaboration among supply chain partners. IT-enabled collaboration enhances strategic partnership that often results in increased SCP. It is therefore hypothesized as follows:

H2. IT-Use positively influences collaboration among supply chain partners.

Supply Chain Performance

Performance measurement is necessary in providing feedback regarding customer requirements, company and supplier capabilities, and probable success of collaboration. The performance of supply chains is multi-dimensional and selecting the appropriate performance measures for a given supply chain presents challenges. A number of frameworks and models for measuring supply chain performance such as by Gunasekaran et al. (2004) and Shepherd and Gunter (2006) have been proposed. One particular performance model that has become increasingly popular is the Supply Chain Operations and Reference (SCOR) model. The model identifies five major metrics for measuring supply chain performance namely (1) reliability, (2) responsiveness, (3) flexibility, (4) cost, and (5) asset management factors (Coyle et al. 2013). This research uses the SCOR model to develop indicators that measure SC performance. It is therefore hypothesized as follows:

H3. The direct relationship between IT-Use and supply chain performance is mediated by supply chain

collaboration.

Conceptual Framework

The conceptual framework shown in Figure 1 is thus grounded on the network theory. In this framework, collaboration acts as a mediating variable to explain how and why there is a relationship between the dependent (supply chain performance) and independent (IT use) variables. The mediating analysis helps understand the degree to which the mediating variable influences the relationship between the independent and dependent variables.



Figure 1. Conceptual Framework

Source: Adapted from Camo et al. (2010)

Variables

Based on the conceptual model, the following variables are defined:

Independent Variable (IT-Use)- this variable measures IT-Use i.e. types of technologies, the extent of use, and use for supply chain activities including procurement, placing and receiving orders, checking order status, responding to request for prices and tariffs, billing and paying for orders.

Dependent Variable (Supply Chain Performance) – supply chain performance is measured based on the SCOR model and in terms of cash-to-cash cycle time, return on supply chain fixed assets, return on working capital, customer complaints and compliance with regulations.

Mediating Variable (Supply Chain Collaboration) – this variable measures supply chain collaboration in terms of the use of IT in performing collaborative activities, developing demand and sales forecast through supply chain coordination, sharing planning information and data with supply chain members, fostering communication and cooperation among supply chain partners and sharing risks with supply chain partners (Kim & Lee 2010, Li et al. 2014).

The hypotheses are tested to investigate the following relationships:

 $SCP = \alpha_0 + \alpha_1 * SCCOL + \alpha_2 * ITUSE + \epsilon$

SCCOL = $\beta_0 + \beta_1 * ITUSE + \epsilon$

where SCP is supply chain performance; SCCOL is supply chain collaboration; ITUSE is IT use or deployment; α_0 , and β_0 are the intercepts; α_1 , α_2 , β_1 and β_2 are the regression coefficients for the latent variables; ϵ is the residual error.

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Methodology

Research Design and Data Collection

A quantitative research approach was employed where a structural equation model was used. This approach is suitable because this an emprical research where numerical data and statistical procedures were used to measure, analyse and examine the relationships among variables. A survey method was used in collecting primary data. The sample population comprised small and medium sized manufacturing companies in the capital region of Ghana (GSS 2015), which is assumed to be representative of the situation in the country. Small and Medium Sized enterprises (SMEs) is the focus of this study because they provide about 85 per cent of manufacturing employment, contribute about 70 percent to Ghana's GDP, and therefore have catalytic impacts on economic growth, income, and employment (GSS 2015). Undoubtedly, SMEs have contributed immensely to income, employment generation and, ultimately, economic growth of the country.

Purposive sampling was used in selecting the companies to be surveyed. With this sampling approach, it was possible to obtain information from samples that are more readily accessible and willing to respond to the questionnaire. A total of 85 companies were surveyed. The data collection instrument was a semi-structured questionnaire divided into four sections: (1) IT-Use, (2) information sharing, (3) collaboration, and (4) supply chain performance. The data collection instrument was self-administered after pre-testing with a few firms to ensure validity, clarity, and ease of comprehension of the questions. Respondents comprised employees in supply chain management positions as well as other departments with adequate knowledge on the use of IT in firm's operations. Out of the 85 firms surveyed only 65 valid responses were retrieved and analyzed, representing about 77 percent response rate.

Table 1 presents the extent of use of various information technologies by the firms surveyed. It would be noted that information technologies that are used by all firms surveyed to varying degrees for communication and exchange of information among supply chain partners are the internet, email and computer networks. Telephone and fax machines are also used by almost all firms surveyed (about 95 percent). However, a high percentage, 25 to 52 percent of firms rarely use advanced IT tools such as ERP, GPS tracker, bar codes, and TMS.

Information Technology	Used (%)				
information rechnology	Not	Moderately	Frequently	Always	
Internet	0	7	20	73	
Email and Computer Networks	0	5	24	69	
Telephone and Fax Machines	4	18	27	51	
Inventory Management System (IMS)	15	15	27	40	
Transportation Management System (TMS)	25	16	16	38	
Warehouse Management System (WMS)	18	20	20	36	
Enterprise Resource Planning (ERP)	33	20	11	27	
Electronic Data Interchange (EDI)	24	31	13	18	
GPS Tracker	38	16	18	15	
Bar Codes	49	9	22	7	
RFID	51	18	4	4	
Other (unspecified)	27	2	4	9	

Table 1. Extent of IT Use among Manufacturing Firms

Data Analysis

The Structural Equation Model (SEM) was employed to investigate the relationship and impact of IT-Use on supply chain performance. Structural equation modelling is a combination of path analysis, factor analysis, and regression modelling (McQuitty & Wolf 2013). Partial Least Squares - Structural Equation Modeling (PLS-SEM) approach was employed. The choice of the PLS-SEM analytical tool is based on the recognition that PLS is a soft modeling approach to SEM with no assumptions about data distribution, and flexible on sample size even when models are highly complex (Vinzi et al. 2010). According to Hair et al. (2014a) PLS-SEM is an OLS regression-based method and it operates much like the multiple regression analyses. Hair et al. (2014b) noted that increasing popularity of PLS-SEM in recent years can be attributed to the method's ability to handle problematic modeling issues encountered in social sciences research such as unusual data characteristics (e.g. non-normal data), small sample sizes, and highly complex models. This research applied the PLS-SEM approach to a supply chain management issue. The SmartPLS 3.0 software application was used in this research.

Findings

Analysis of the PLS-SEM outputs involves two steps: (1) evaluation of the measurement model, and (2) evaluation of the structural model - These are discussed in the following sections.

Evaluation of Measurement Model

Evaluating the measurement model involves determining the convergent validities of the indicator variables, their constructs as well as the internal consistency reliability. Internal reliabilities are indicated by the outer loadings of the indicators. This characteristic, also known as indicator reliability (Hair et al. 2014a), identifies indicators that are important to characterizing the various constructs. Figure 2 is a schematic presentation of the output of the PLS algorithm. The figure shows indicators with outer loadings of at least .70 i.e. the associated indicators have much in common (Fornell & Larcker 1981). Each question on the data collection form represents an indicator. Therefore, indicators with outer loadings of at least .70 are questions that are relevant to characterize the variables in the model.



FIGURE 2. PLS-SEM MODEL OUTPUT (PLS ALGORITHM)

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Internal Consistency Reliability

Internal consistency reliability measured using Cronbach's alpha (CA), provides an estimate of the reliability of the measurement models based on the inter-correlations of the observed indicator variables (Henseler et al. 2009). According to Nunally and Bernstein (1994), composite reliability (CR) values between .70 and 0.90 are considered satisfactory. As shown in Table 2, the CA and CR values are within the .70 to .90 acceptable range and are indicative of sufficient internal consistency. These values confirm that the indicators of the constructs used in the survey instrument are consistent and produced reliable data.

Convergent Validity

Convergent validity is the extent to which a measure correlates positively with alternative measures of the same construct. This characteristic is known as indicator reliability and requires that all outer loadings of indicators should be statistically significant at a minimum (Hair et al. 2014a). This is measured by the Average Variance Extracted (AVE), which is the portion of the data that is explained by each one of the constructs, respective to their groups of variables or how much, on average the variables correlate positively with their respective constructs. An AVE>.50 indicates that on average, the construct explains more than half of the variance of its indicators (Hair et al. 2014a, Henseler et al. 2009, Vinzi et al. 2010). The results indicate that the observed values are all greater than the threshold of .50 (Table 2). This means the constructs explain more than half of the variance of their indicators. Therefore, the model converges to a satisfactory result and the convergent validity has been achieved.

Tuble E. Convergence and Con	Tuble 2. Convergence and consistency renability						
Construct	Average Variance Extracted (AVE)	Composite Reliability (CR)	Cronbach's Alpha (CA)	R ²			
Collaboration	.64	.89	.86	.33			
IT-Use	.53	.88	.85				
Supply Chain Performance	.59	.88	.83	.34			

Table 2. Convergence and Consistency Reliability

Discriminant Validity

Discriminant validity measures the extent to which a construct is truly distinct from other constructs and implies that a construct is unique and captures phenomena not represented by other constructs in the model (Hair et al. 2014a). This is measured by the cross loadings (Henseler et al. 2009) or by the Fornell-Larcker criterion. The square root of each construct's AVE should be greater than its highest correlation with other constructs (Fornell-Larcker 1981). The results presented in Table 3 show that this criterion has been met.

Table 3. Fornell-Larcker Criterion

Fornell-Larcker Criterion	Collaboration	IT-Use	Supply Chain Performance						
Collaboration	.80								
IT-Use	.58	.73							
Supply Chain Performance	.54	.49	.77						

Note: Numbers on diagonal are square roots of AVEs; off-diagonal numbers are inter-construct correlations.

In summary, the variables in the adjusted model are valid and consistent in characterizing the constructs they represent. Having determined that the measurement model meets the evaluation criteria, the next step is to evaluate the structural model to determine its accuracy and predictive capability.

Evaluation of Structural Model

The first metric for evaluating the structural model is the Pearson coefficients (R^2). The R^2 measures the variance in the endogenous variables that is explained by the structural model. According to Chin (1998), R^2 =.19 shows a weak effect; R^2 =.33 shows a moderate effect and R^2 =.67 shows a substantial effect. The R^2 values for the two models are .33 and .34 respectively. These values are within the moderate bracket. According to Cohen (1988), R^2 =.02 is considered to be having a little effect, R^2 =.13 as a medium effect, and R^2 =.26 as having a large effect. The LVs have large effects using Cohen (1998) criteria.

The predictive capabilities of the adjusted models were also evaluated by examining the change in R^2 using Cohen's indicator or the effect size (f²) and Cross-validated Redundancy or Stone-Geisser indicator (Q²). The effect size measures the impact of each predictor variable on the dependent variable. The Stone-Geisser indicator also measures a model's predictive relevance. It shows whether the model accurately predicts the data points of indicators in reflective measurement models of endogenous constructs (Hair et al., 2014a). According to Hair et al. (2014a), f² and Q² values for dependent variables should be greater than 0 and values of .02, .15, and .35 are considered as small, medium or large predictive relevance respectively. The results indicate that f² values range from .07 to .49 implying that the independent variables have small to large impact and are useful in predicting the dependent variables. The results also show Q² values of .17 and .18 respectively. Based on the Q² and f² values, it can be concluded that the models have accurate predictive capabilities. The direct impact of IT-Use on SCP is less than the indirect impact through Collaboration. Both models do have acceptable predictive capabilities.

The final step in evaluating the structural model is to examine the significance of the relationships established based on sign, magnitude, and significance of the path coefficients generated from the PLS analysis. These coefficients represent the hypothesized relationships linking the constructs in the models. The path coefficients of the constructs were tested to determine if they are statistically significant using the p-values and Student's t-test. The analysis is based on 5 percent significance level (i.e. $p \le .05$) therefore, the critical region for the t -test is between -1.96 and +1.96. Table 4 shows the values of the t-test as well as their corresponding p-values at 5 percent significance level.

21					
Construct	Original Sample	Sample Mean	Standard Deviation	t-statistics	<i>p</i> -values
Collaboration \rightarrow SCP	.38	.38	.14	2.71	.00
IT-Use \rightarrow Collaboration	.57	.59	.09	6.08	.00
$IT-Use \rightarrow SCP$.27	.28	.12	2.24	.02

Table 4. Results of Hypotheses Testing

The path coefficients clearly show that IT-Use is positively related to SCP; IT-Use and Collaboration; and Collaboration and SCP, and statistically significant at 95 percent confidence level; i.e. $p \le .05$. In relative terms however, the relationship between IT-Use and Collaboration is stronger than the direct relationship between IT-Use and SCP. Therefore, hypotheses *H1* and *H2* are accepted implying that, IT-Use directly impacts SCP and positively influences collaboration among supply chain partners.

Mediation Analysis

According to Hair et al. (2014a) in order to establish mediation, the direct effect must first be significant if the mediator variable is not included in the model. A significant relationship indicates that the mediator may absorb some of this effect or the entire effect. As noted earlier all three direct path relationships are statistically significant at 95 percent confidence level. In order to establish that Collaboration construct is indeed a mediating variable between IT-Use and SCP, a mediation analysis was necessary. The mediating variable may absorb some or the entire effect be it an increase or a decrease. This was achieved through the Bootstrapping algorithm in Smart PLS 3.0 software.

For there to be a mediating effect, the mediator variable is included in the PLS path model and the significance of the indirect effect P_a*P_b assessed. For the indirect effect to be significant each individual path P_a and P_b must be significant (Hair et al. 2014a). The following results were obtained:

- IT-Use is positively related to collaboration ($P_a = \beta_1 = .57$, t = 6.08, p = .00)
- Collaboration is positively related to SCP ($P_b = \beta_2 = .38$, t = 2.73, p = .00)
- IT-Use is positively related to SCP ($P_c = \beta_3 = .27$, t = 2.27, p = .02)

Hence, the indirect effect is also significant indicating that the mediator variable (collaboration) absorbs some of the direct effect. To determine how much the mediator variable absorbs, the variance accounted for (VAF) is determined. According to Hair et al. (2014a), VAF determines the size of the indirect effect in relation to the total effect and is calculated using the formula:

 $P_{M} = (P_{a} * P_{b}) / ((P_{a} * P_{b}) + P_{c})$

The results show a VAF of .44 or 44 percent suggesting partial mediation. According to Hair et al. (2014a), VAF value between 20 and 80 percent indicates a partial mediation and a value of over 80 percent indicates a full mediation.

Discussion

The results from the PLS-SEM analysis established that there is a strong statistically significant positive relationship between IT-Use and SCP, supporting the first hypothesis (*H1*). This is consistent with earlier studies (e.g. Davis-Sramek et al. 2010, Kamaruddin & Udin 2009, Sabherwal & Jeyaraj 2015, Wakolbinger & Cruz 2011) which found that the IT-Use makes it possible to obtain and exchange accurate and timely information in the supply chain hence providing benefits in the form of better visibility, reduced costs, increased productivity, and increased performance of the supply chain.

It is also noted that IT-Use has a greater effect on collaboration than its direct effect on SCP as indicated by the higher path coefficient. Therefore, the second hypothesis (*H2*) which proposes a positive link between IT-Use and collaboration is supported. This clearly indicates that IT-Use among partners in a supply chain facilitates integration and collaboration. An integrated supply chain is known to enhance performance and collaboration flow with suppliers and customers greatly facilitates collaboration and reduces delays and costs which ultimately results in productivity and supply chain performance in general. The effective use of appropriate IT in all supply chain processes therefore improves collaboration and SCP. Aparecida de Mattos and Laurindo (2015) also identified IT as an essential factor for facilitating the flow of information to enable collaboration among supply chain partners.

From the mediating analysis, hypothesis *H3* which examines the mediating role of collaboration on SCP is also supported. Even though there is a direct relationship between IT-Use and SCP, the effect of IT-Use on SCP is influenced by the degree of collaboration among the partners in the supply chain. Collaboration has been demonstrated to be a mediating variable and has partial impact on the IT-Use – supply chain performance relationship. SCP is enhanced by a high degree of collaboration among supply chain partners. The positive relationship between Collaboration and SCP could also be attributed in part to the fact that collaboration eliminates inefficiencies and boosts performance. This finding is particularly important for manufacturing firms in less developing economies some of which depend on foreign suppliers. In such supply chains, effective collaboration is a key to performance and survival in a market where local products compete with imported finished products. This is consistent with the study

conducted by Sanders (2007) which observed that the use of IT impacts performance directly and indirectly with the relationship being mediated by inter and intra-organizational collaboration.

Furthermore, the use of IT increases collaboration among supply chain partners which leads to improvement in SCP. This finding is consistent with those by other researchers. For example, Lockamy III and McCormack, (2004) noted that collaboration has a direct impact on SCP; García-Alcara et al. (2017) found that IT has a positive direct impact on the economic performance of supply chains; Zhang et al., (2016) also found that IT-Use among supply chain firms has a positive direct relationship with supply chain performance; Sanders (2005) showed that IT alignment between suppliers and buyers has a direct positive impact on both strategic and operational performance measures.

Conclusion and Recommendations

This study investigated the impact of IT deployment on the supply chain performance of small and medium scale manufacturing firms in Ghana. The PLS-SEM approach was used to examine the direct relationship between IT and supply chain performance and an indirect relationship between both variables through the mediating role of collaboration. It is concluded that there is a statistically significant positive direct relationship between IT-Use and supply chain performance when measured in terms of SCOR performance attributes. An increase in IT-Use is expected to improve supply chain performance. Collaboration acts as a mediating variable where the effect of IT-Use on SCP is influenced by the degree of collaboration among the partners in the supply chain. The results indicate that IT-Use has more significant influence on collaboration than on SCP and collaboration has more significant influence on SCP than IT-Use.

It is concluded that the use of IT contributes to supply chain performance both directly and indirectly through collaboration between supply chain partners. It is further concluded that collaboration is a necessary condition for IT-Use to have marked SCP improvements. It is recommended that manufacturing firms, particularly in less developed economies, invest in some level of IT to facilitate the flow of timely and accurate information at every stage of the supply chain to develop their strategic alliances with their supply chain partners and ultimately improve performance of their supply chains.

Contribution

This study contributes to existing literature by using empirical data to demonstrate the direct and indirect relationship between IT-Use and performance of manufacturing industry supply chains in the developing country. The study established that collaboration acts as a mediator variable in the IT-Use – supply chain performance relationship. Theoretically, the research demonstrates the application of PLS-SEM to analyze supply chain variables that cannot be directly measured. Practically, the research demonstrates the importance of collaboration among supply chain partners and IT deployment in improving supply chain performance of manufacturing firms in less developed countries especially where some of the partners are located in foreign countries.

Limitations and Suggestions for Future Research

The study focused on the manufacturing industry in a developing economy. Extension of the findings to the service, retail and other industries and other operating environments may be limited. It is recommended that similar studies be conducted on other industries to validate the findings.

References

- Aparecida de Mattos C & Laurindo FJB 2015. Collaborative platforms for supply chain integration: Trajectory, assimilation of platforms and results. Journal of Technology Management & Innovation, 10(2,) 79-92.
- Bhosle G, Kumar P, Griffin-Cryan B, van Doesburg R, Sparks M & Paton A 2011. Supply chain control Tower. Retrieved from https://www.capgemini.com/wp-content/uploads/2017/07/ Global_Supply_Chain_Control_Towers.pdf (Accessed January 20, 2020).
- Campo S, Rubio N & Yague MJ 2010. Information technology use and firm's perceived performance in supply chain management. Journal of Business-to-Business Marketing, 17, 336-364.
- Carr AS 2016. Relationships among information technology, organizational cooperation and supply chain performance. Journal of Managerial Issues, 28(3/4), 171-190.
- Carneiro LM, Soares AL, Patricio R, Azevedo AL & De Sousa JP 2013. Case studies on collaboration, technology and performance factors in business networks. International Journal of Computer Integrated Manufacturing, 26(1-2), 101-116.
- Chandler D & Munday R 2016. A dictionary of media and communication. From http://www.oxfordreference.com/search?q=information+technology&searchBtn=Search&isQuickSearc h=true Accessed 3 June 2016)
- Chang HH, Tsai Y-C & Hsu C-H 2013. E-procurement and supply chain performance. Supply Chain Management: An International Journal, 18(1), 34-51.
- Chin WW 1998. The partial least squares approach to structural equation modelling. In Marcoulides, G.A. (Ed.), Modern methods for business research. Mahwah, NJ: Lawrence Erlbaum Associates, pp. 295–358.
- Chopra S & Meindl P 2016. Supply chain management: strategy, planning and operation. NY: Pearson Education.
- Cohen J 1988. Statistical power analysis for the behavioral sciences. NJ, USA Lawrence Erlbaum.
- Collins JD, Worthington, W.J., Reyes, P.M. & Romero, M. 2010. Knowledge management, supply chain technologies, and firm performance. Management Research Review, 33(10), 947-960.
- Coyle JJ, Langley Jr CJ, Novack RA & Gibson BJ 2013. Managing supply chain management: A logistics approach. UK: South –Western Cengage Learning.
- Davis-Sramek B, Germain R & Iyer K 2010. Supply chain technology: The role of environment in predicting performance. Journal of the Academy of Marketing Science, 38, 42-55.
- Devaraj S, Krajewski L & Wei JC 2007. Impact of eBusiness technologies on operational performance: The role of production information integration in the supply chain. Journal of Operations Management, 25(6), 1199-1216.
- Fornell C & Larcker DF 1981. Evaluating structural equation models with unobservable variables and measurement errors. Journal of Marketing Research, 18(1), 39-50.
- García-Alcaraz JL, Maldonado-Macías AA, Alor-Hernández G & Sánchez-Ramírez C 2017. The impact of information and communication technologies (ICT) on agility, operating and economical performance of supply chain. Advances in Production Engineering and Management, 12(1), 29-40.
- Ghana Statistical Service. 2015. Integrated business establishment survey: summary report, available at http://www.statsghana.gov.gh/docfiles/IBES_Questionnaires/IBES%201%20reports/SUMMARY%20REP ORT_FINAL_FINAL_24-5-16.pdf (Accessed 20 September 2016).
- Ghobakhloo M, Tang SH, Sabouri MS & Zulkifli N 2014. The impact of information system-enabled supply chain process integration on business performance: a resource-based analysis. International Journal of Information Technology and Decision Making, 13(5), 1075-1113.
- Gunasekaran A, Patel C & McGaughey RE 2004. A framework for supply chain performance measurement. International Journal of Production Economics, 87(3), 333-347.

- Hair JF, Hult GTM, Ringle CM & Sarstedt M 2014a. A primer on partial least squares structural equation modelling PLS-SEM. USA: Sage.
- Hair JF, Sarstedt M & Kuppelwieser VG 2014b. Partial least squares structural equation modeling (PLS-SEM). European Business Review, 26(2), 106-121.
- Hal, DC & Saygin C 2012. Impact of information sharing on supply chain performance. International Journal of Advanced Manufacturing Technology, 58, 397-409.
- Halldorsson A, Kotzab H, Mikkola JH & Skjott-Larsen T 2007. Complementary theories to supply chain management. Supply Chain Management: An International Journal, 12(4), 284-296.
- Hearnshaw EJS & Wilson MMJ 2013. A complex network approach to supply chain network theory. International Journal of Operations & Production Management, 33(4), 442-469.
- Henseler J, Ringle CM & Sinkovics RR 2009. The use of partial least squares path modelling in international marketing. Advances in International Marketing, 8(20), 277-319.
- Jao-Hong C & Chih-Huei T 2014. Interorganizational cooperation and supply chain performance in the context of third party logistics services. Asia Pacific Management Review, 19(4), 375-390.
- Kamaruddin NK & Udin ZM 2009. Supply chain technology adoption in Malaysian automotive suppliers. Journal of Manufacturing Technology Management, 20(3), 385-403.
- Kim D & Lee RP 2010. Systems collaboration and strategic collaboration: Their impacts on supply chain responsiveness and market performance. Decision Sciences, 41(4), 955-981.
- Kim G, Lin WT & Simpson NC 2015. Evaluating the performance of US manufacturing and service operations in the presence of IT: A Bayesian stochastic production frontier approach. International Journal of Production Research, 53(18), 5500-5523.
- Li L 2012. Effects of enterprise technology on supply chain collaboration: Analysis of China-linked supply chain. Enterprise Information Systems, 6(1), 55-77.
- Li L, Zhang L & Willamowska-Korsak M 2014. The effects of collaboration on build-to-order supply chains: With a comparison of BTO, MTO and MTS. Information Technology and Management, 15, 69-79.
- Lockamy III A & McCormack K 2004. Linking SCOR planning practices to supply chain performance. International Journal of Operations & Production Management, 24(12), 1192-1218.
- Marinagia C, Trivellasb P & Reklitisc P 2015. Information quality and supply chain performance: The mediating role of information sharing. Procedia Social and Behavioral Sciences, 175, 473-479.
- McQuitty S & Wolf M 2013. Structural equation modelling: A practical introduction. Journal of African Business, 14(1), 58-69.
- Montoya-Torres JR & Ortiz-Vargas DA 2014. Collaboration and information sharing in dyadic supply chains: A literature review over the period 2000–2012. Estudios Gerenciales, 30), 343-354.
- Nunally JC & Bernstein I 1994. Psychometric theory. New York: McGraw-Hill.
- Ramayah T, Sang T, Omar R & Dahlan N 2008. Impact of information technology (it) tools, partner relationship and supply chain performance. Asian Academy of Management Journal, 13(2), 33-55.
- Sabherwal R & Jeyaraj A 2015. Information technology impacts on firm performance: An extension of Kohli and Devaraj (2003). MIS Quarterly, 39(4), 809-836.
- Sanders NR 2005. IT alignment in supply chain relationships: A study of supplier benefits. Journal of Supply Chain Management, 41(2), 4-13.
- Sanders NR 2007. An empirical study of the impact of e-business technologies on organizational collaboration and performance. Journal of Operations Management, 25(6), 1332-1347.
- Shepherd C & Gunter H 2006. Measuring supply chain performance: Current research and future directions. International Journal of Productivity and Performance Management, 55(3-4), 242-258.
- Sundram VPK, Chandran VGR & Bhatti MA 2016. Supply chain practices and performance: The indirect effects of supply chain integration. Benchmarking: An International Journal, 23(6), 1445-1471.
- Tang CS & Zimmerman J 2013. Information and communication technology for managing supply chain risks. Communications of the ACM, 56(7), 27-29.
- Vinzi VE, Chin WW, Henseler J & Wang H 2010. Handbook of partial least squares: Concepts, methods and applications. Berlin: Springer-Verlag.
- Wakolbinger T & Cruz JM 2011. Supply chain disruption risk management through strategic information acquisition and sharing and risk-sharing contracts. International Journal of Production Research, 49(13), 4063-4084.
- Wellenbrock M 2013. Theoretical basis of supply management: The network theory in supply management. 1st BA Bachelor Thesis Conference, University of Twente, Enschede, The Netherlands.
- Wong CWY, Lai K-H & Cheng TCE 2012. Value of information integration to supply chain management: Roles of internal and external contingencies. Journal of Management Information Systems, 28(3), 161-199.
- Xu N, Liu J, Li D & Wang J 2016. Research on evolutionary mechanism of agile supply chain network via complex network theory. Mathematical Problems in Engineering, 1-9.
- Yang J 2014. Supply chain agility: Securing performance for Chinese manufacturers. International Journal of Production Economics, 150, 104-113.
- Yee S-T 2005. Impact analysis of customized demand information sharing on supply chain performance. International Journal of Production Research, 43(16), 3353-3373.
- Zeng Y & Xiao R 2014. Modelling of cluster supply network with cascading failure spread and its vulnerability analysis. International Journal of Production Research, 52(23), 6938-6953.
- Zhang X, Van Donk DP & Van der Vaart T 2016. The different impact of inter-organizational and intraorganizational ICT on supply chain performance. International Journal of Operations & Production Management, 36(7), 803-824.

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Affordability, sociability and the reverse knowledge flow from emerging markets

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In rapidly growing emerging markets that exhibit a significant amount of heterogeneity, innovation activities by multinational corporations undergo a substantial transformation. This phenomenon can be summarized by the appearance of frugal innovation (innovation for emerging markets) and reverse innovation (innovation from emerging markets to the rest of the world). Although each of them is discussed individually, a few studies have investigated what kind of innovation specific to emerging markets is transferred to the multinationals' headquarters. Using the communications theory, we explore the intrinsic value of the information as the main determinant of its transfer, and the aspect of frugal innovation that is valuable for multinational's headquarters. Our findings indicate that sociality determines the fundamental level of transfer, and affordability moderates it positively. We examined it with using data from innovation projects for emerging markets of Japanese multinationals.

Keywords: affordability, emerging markets, innovation, knowledge

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Introduction

This research is a study of the relationship between two trends characterizing multinational corporation's activities in emerging countries: Frugal innovation, and reverse innovation. Backed by recent rapid growth of emerging market, research attention has been focused on innovation activities in emerging countries. Furthermore, numerous researches have revealed that new types of innovation have occurred there for obtaining local markets. Those types are termed as frugal innovation (Bhatti 2013, Sharma & Iyer 2012, Zeschky et al. 2014), bricolage (Ernst et al. 2015), grassroots innovation (Brem & Wolfram, 2014), jugaad (Cappelli et al. 2010), etc. Here, we will simply coin those innovations for emerging markets as frugal innovation.

Scholars have also found that there is another characteristic of innovative activities in the emerging market. Innovation occurred at emerging markets have sometimes been transferred to the rest of the world to revolve or improve multinational corporation's strategy. Such an innovation from the emerging market is termed as reverse innovation (Govindarajan & Trimble 2013, Zedtwitz et al. 2015). Ideas from heterogeneous emerging countries would sometimes become a clue for strategic change.

Although there are many studies on both types of innovations, and sometimes scholars use these two concepts interchangeably and use them without distinction, these are different phenomena. One describes developing a new product/service for emerging markets whereas the other is the transfer of it

to other areas. Furthermore, past studies haven't yet considered the relationship between them. Thus, in this study we try to make a bridge between the two concepts.

The value of our study lies in its clarification of what aspect of innovation for emerging markets can also be applicable to other regions. Here we identify two central features of innovation for emerging markets: Affordability, and sociality. We know both are important for the success in emerging markets, but we do not know which could be also important in other regions. Using the new product project data of Japanese multinationals, this paper examines that sociality is the primary item that determines the degree of transfer, whereas the affordability is the secondary one that further enhances the impact of sociality.

Literature Review about Innovation in Emerging Markets

After recent rapid growth of emerging countries, much attention has been paid to emerging market research. Emerging markets are fundamentally different from developed markets in many respects. One of the central differences between these two markets lies in the income level (Prahalad 2005, Zeschky et al. 2014). Emerging markets are characterized by low-income, limited affordability, and strong cost-consciousness. The other typical characteristics of them is resource constraints, which means shortage and limited availability of resources (Baker & Nelson 2005). As is often the case, emerging market lacks basic facilities such as infrastructure and talented human resources. In these situations, it is difficult for MNCs to develop products which have deployed in their home developed market (Prahalad 2005). Further, emerging market are also known as institutional voids which mean the absence of specialized intermediaries, regulatory systems, and contract-enforcing mechanisms in emerging markets (Khanna et al. 2005).

As these characteristics are remarkable, not only practitioners but also scholars have started to pay attention to the product innovation that intends to adapt to emerging markets. It is no longer easy for MNCs to succeed in emerging market by simply importing their existent products or making copy of them in the emerging countries. They need to deal with it by changing the nature of their product. In fact, many MNCs have been struggling to change and localize their product development activities in the emerging market (Williamson 2010, Zeschky et al. 2014). And now both scholars and practitioners have recognized that they require significantly different nature of product innovation to capture the emerging market needs (Prahalad 2005, Sharma & Iyer 2012, Zeschky et al. 2014).

Innovation FOR Emerging Markets, Innovation FROM Emerging Markets

Reflecting those research progress, many innovation researchers seek to conceptualize these new types of innovation for obtaining emerging markets. Although there are many conceptualizations of innovation in emerging markets (Cappelli et al. 2010, Prahalad & Mashelkar 2010, Zeschky et al. 2011), we can summarize that such innovation can be characterized by affordability, sociality, and utilization of available technology (Pisoni et al. 2018).

The first character of the product innovation for emerging markets is the affordability for low-income customers (Brem & Wolfram 2014, Ernst et al. 2015). Thus, those innovations for emerging markets are often referred to as frugal innovation. The large portion of emerging markets is characterized as low income, which means customers feel difficulty in purchasing required products. Because their biggest issue is price, sometimes *good enough* innovation which means sufficiently low-cost and reliable would be effective (Ernst et al. 2015). To catch these segments, innovation needs to include a cost reduction aspect while also offering value to them (Anderson & Markides 2007, Dubiel & Ernst 2013).

The second character is social problem-solving. There are many institutional voids in emerging markets, and thus social problems often occur (Prahalad 2005). This is the reason why sometimes products which only reduce the cost of existing products tend to fail. These local specific needs are

strongly related to the constraints emerging market have been confronting. As stated above, emerging countries often suffer from not only affordable constraints of customer, but also resource constraints and institutional constraints. Social innovation which provides solutions to these situations are one measure to satisfy their needs. Thus, frugal innovation has aspect of social innovation (Khanna & Palepu 2010).

The third is the utilization of existing technology. In the usual case of innovation in developed countries, technological novelty is regarded as one of the important factors to realize a valuable, unique user experience (Eppinger & Ulrich 2015, Kahn 2012). However, in emerging markets, the use of available, existing technology by *bricolage* is rather effective in solving local problems (Ernst et al. 2015, Petrick & Juntiwasarakij 2011, Sharma & Iyer 2012). It takes less cost, less efforts, and less time than introducing sophisticated technology and it often make it easier to adapt to local situation of emerging markets.

Although these characteristics refer to the nature of innovation for capturing the emerging market, there are still other research streams which shed light on different aspect of innovation activity in emerging countries. That is called as *reverse innovation* which refers the reverse transfer of product and knowledge from emerging countries to developed market (Govindarajan & Ramamurti 2011). Ideas generated in emerging markets are often novel for developed-country multinationals, and they are sometimes applicable to other regions too (Huang & Li 2019). Thus, many MNCs now started to try to utilize innovation spawn from emerging countries to overall global operations (Malodia et al. 2020).

Although past studies have investigated more in-depth about those two features of innovation in emerging markets, there exists an important research gap: few studies have considered the relationships between frugal innovation and reverse knowledge flow (Kolk et al. 2014, Pisoni et al. 2018). As past studies indicated, because innovation FOR emerging markets has several specificities like affordability and sociality that are new for developed country multinationals, it can become the innovation FROM emerging markets that make changes in their global operation (Godindarajan & Trimble 2013, Malodia et al. 2020). Thus, we think it is quite valuable to investigate which character of innovation for emerging markets facilitates the transfer and utilization of it within the multinationals. If we can specify the nature of innovation in emerging markets that is likely to be transferred, it can result in the specification of the nature of innovation that contributes to the development of both emerging markets (Leliveld & Knorringa 2018). In this sense, to investigate the relationships between the nature of innovation for emerging markets and the transfer of that innovation to other areas are worth tackling for both academia and business practice.

Theory and Hypotheses

Conceptual Framework: Communications Theory

To consider the impact of affordability and sociality on the degree of knowledge transfer, we use communication theory as the theoretical framework. Communication theory regards knowledge transfer as information flow from sender to receiver (Gibson & Williams 1990, Gupta & Govindarajan 2000, Krone et al. 1987, Szulanski 1996). According to this theory, communication process is composed from mainly two different elements: the content, and the sender-receiver relation. The content of information is the chief element of communication and the value of the content for the receiver firstly determines the degree of knowledge flow from the sender to him/her. When the receiver recognizes that the information is quite important for him/her, he/she makes more effort to obtain it correctly from the sender. The sender-receiver relationship is the secondary determinant of the knowledge flow; its conditions facilitate or inhibit the transfer. When the sender and the receiver have a friendly relationship, a well-developed communication channel, or a shared value and norms, they can exchange their knowledge smoothly (Gupta & Govindarajan 2000, Tsai & Ghoshal 1998). This communication perspective of knowledge transfer is useful for our analysis. We can put the nature of innovation in emerging markets as the content

of information, and the local subsidiary and its headquarter as a sender and a receiver. Then, by considering the value of the innovation for the headquarters, we can examine the impact of the nature of innovation on the degree of transfer after controlling the relationship between the local subsidiary and the headquarters.

Drawing on the communication theory, we develop a model that the nature of innovation in emerging markets determines the level of transfer from emerging market. As explained above, we can define the characters of innovation in emerging markets by three items: sociality, affordability, and the utilization of available technology as depicted in Figure 1.



Figure 1. Hypothesized Model of the Frugality and Reverse Transfer of Innovation

We consider the effect of chief characteristics of innovation in emerging markets - affordability and sociality. As explained above, both features enhance the possibility of successful innovation in emerging markets. Affordability helps the product to reach a large number of customers (Anderson & Markides 2007, Dubiel & Ernst 2013, Lee et al. 2011) and sociality captures the essential needs of people: it contributes to solving local social problems that people face (Prahalad 2005). Both are effective from the viewpoint of marketing for emerging markets, but given a good thought, there is a decisive difference between the two. That is, the sociality, social problem-solving is the essential value for the customers, and the affordability is the means to make that value reachable to more customers.

We assume that the sociality is the chief value of the innovation in emerging markets. Fundamentally, innovation is the problem-solving for the customer (Eppinger & Ulrich 2015). In that sense, the product that improves the situation of the customer who faces the serious social constraints or problems should be inherently the central activities of the company located in emerging markets. Further, if the company tries to apply that innovation to other markets than the original one, the key issue must become the value for the customer of that area. Whether the product can be accepted or not is determined by the level of problem-solving for the customer. In fact, some researchers strongly claimed that these social aspects of innovation, providing radical solutions to pressing needs of society, is critically important for frugal innovation (Brem & Wolfram 2014, Prahalad & Mashelkar 2010).

Social innovation would be also important for enhancing reverse activity from emerging countries to developed countries. As London & Hart (2004) points out that it is not a rare occasion that social and environmental issues are common in both emergent and developed counties. The commonality of the

social problem is not the only reason for the importance of emerging market in sociality of innovation. Emerging market, especially bottom pf the pyramid (BOP) segment is a source of breakthrough (Prahalad 2012). As this segment confronts the pressing social needs, it provides abundant opportunities for experimentation. If the innovation meets the requirement of base of pyramid in emerging counties, it is possible for MNCs to provide solutions to some of the developed countries' most pressing social and environmental problems. According to these arguments, if the product innovation entails social nature, the value of it would increase for MNCs to introduce it to the developed market. Thus, we can hypothesize as follows:

H1. The level of sociality of a new product have positive association with the degree of reverse knowledge flow toward the headquarters.

Next, affordability is not the central value of the innovation but the supplemental element that makes customers accessible to the product. Because the emerging markets are characterized by low-income, the affordability of the product often becomes important factor of success (Anderson & Markides 2007, Dubiel & Ernst 2013, Lee et al. 2011). But in terms of the possibility of reverse transfer to headquarters, we can assume that the affordability itself does not heighten it. This is because the affordable innovation is not always valuable for the developed market. One reason for this is related to sources of affordability. The nature of low cost is sometimes rooted on locally-embedded sources such as low cost of resources and workforce in emerging market. In these situations, the reproduction of these low cost is difficult in developed countries. Similarly, Arslan et al. (2016) proposed that locally-embedded knowledge is difficult for reverse knowledge transfer because of its relevance and stickiness. These low-cost sources are stick to local context and sometimes irrelevant to developed markets. Thus, affordability of innovation itself would not be valuable for headquarter of MNCs. This leads to decreasing the possibility of reverse transfer. Thus,

H2. The level of affordability of a new product is not associated with the degree of reverse knowledge flow toward the headquarters.

Even while affordability singly cannot be regarded as valuable to transfer to headquarters in the developed country, we can assume that affordability enhances the value of social product, and thus it acts as a positive moderator between sociality and the level of transfer to headquarters. If the product that tackles the social problem becomes more inexpensive, the more customers can enjoy that benefit (Bhatti 2013). In other words, cheaper social innovation is more likely to be accepted and adopted in more places. As a result, it can be more powerful in solving social issues in the world (Cappelli et al. 2010, Govindarajan & Ramamurti 2011). Although affordable products can be just cheap goods in developed market, the affordable and social products do provide smart solutions to social problems. Thus, we can assume that the headquarters of multinational corporations recognize the affordable social products and transfer them to several markets because it has greater potential to solve social issues. Based on above discussion, we can be hypothesized as follows:

H3. The interaction of the level of affordability and the sociality has positive association with the degree of reverse knowledge flow toward the headquarters.

Finally, we consider the technological aspect. A quite wide range of technology is available in product innovation in emerging markets, from bricolage to a very sophisticated one. A bricolage often brings a good result because it can solving problem in an inexpensive way (Cappelli et al. 2010, Ernst et al. 2015). On the other hand, novel technology sometimes can also achieve low cost solution even in poverty areas. As Zeschky et al. (2014) show, innovations that introduce new technology, new product architecture, or

novel use of existent technology sometimes enable entirely new applications at much lower price points than existing solutions. To summarize, both obsolete and novel technology can be valuable for emerging markets as long as it improves the customer's quality of life. In other words, the essential value of the new product developed in emerging markets does not lie in the way of problem-solving (technology), but the outcome of it (sociality).

From the headquarters' point of view, if a new technology is successfully introduced into the market, they are likely to have a motivation to expand it to other countries. However, it is equally meaningful for headquarters to be able to meet new market needs with existing technology. Given these aspects, it can be said that the both advanced technology products and the obsolete technology ones are meaningful to transfer; however, it is not clear which one should be given a priority. Thus, we can hypothesize as follow:

H4. The level of technological novelty of a new product is not associated with the degree of reverse knowledge flow toward the headquarters.

Methodology

Sample and Procedure

We collected data through a questionnaire survey mailed during January-September 2017. We chose Japanese overseas subsidiaries located in emerging markets as defined and listed in both International Monetary Fund (2016) and Standard & Poor (2017). Among the countries corresponding to this IMF's and S&P's classification, we did a random sampling from the *Toyo Keizai* Overseas Japanese company database 2016 (Toyo Keizai 2016) to develop a mailing list, which is often used for surveys of Japanese companies (Delios & Henisz 2000, Nakagawa et al. 2017, Nakamura et al. 1996). We focused on the manufacturing sector because some of our questions about the development project can be applied only to manufacturing like production cost or product engineering (Eppinger & Ulrich 2015).

Our unit of analysis is the new product development project held in that subsidiaries that targeted its local market. Following Ernst et al. (2015), we adopted a two-stage sampling procedure to measure the performance and project management approach correctly to avoid the risk of common method variances (Podsakoff et al. 2003). We made two questionnaires, one for senior managers who can assess the consequences of the new product, and another for project managers who know the actual situation of the development project.

Company Pr	rofile					Project Profile	
Country		Industry		Established Ye	ear	Project Duration	(Months)
Thailand	10	Chemical	13	1960s	1	1 - 6	17
China	7	Electronics	13	1970s	7	7 -12	15
Indonesia	6	Machinery	10	1980s	5	13 - 18	4
Vietnam	6	Automotive	8	1990s	25	19 - 24	10
Brazil	5	Metal	4	2000s	14	25 - 36	5
Taiwan	5	Daily Consumer	4			37 - 48	1
Malaysia	4	Goods		Employees		_	
India	2			30 – 99	9	Project Participa	nts
Mexico	2			100 – 299	14	1 - 4	17
Philippines	2			300 – 499	9	5 - 9	12
Czech	1			500 – 999	13	10 - 19	15
Hungary	1			1000 - 1999	5	20 - 49	5
Pakistan	1			2000 - 4000	2	50 - 200	3

Table 1. Sample Characteristics

n=52

At first, we mailed questionnaires to 1159 subsidiaries of Japanese corporations in emerging markets as defined above. They were written in three languages: Japanese, Chinese and English and were sent to the presidents or other top-level representatives of the foreign subsidiaries. Strict confidentiality was enforced to minimize the pressure for providing correct answers. After sending several reminders, we received responses from 167 (14%) companies and 155 (13%) out of them were available. The net response rate of 13% is considered excellent compared to the usual response rates of from 6% to 16% in international surveys (Harzing 1997). Among available 155 responses, 52 companies answered that they did at least one new product project in the past five years. Thus we used those 52 responses as our sample. As past studies reported (Anderson & Markides 2007, Brem & Wolfman 2014, Laperche & Lefebvre 2012, Zedtwitz et al. 2015). Many MNCs from developed countries still did not place a new product development function in emerging markets (now they were starting). Based on those reports, the result that about one third of all responses carried out new product development seemed reasonable. Table 1 reports sample characteristics.

Measures

Dependent Variable

Reverse knowledge flow. Based on the past studies (Brem & Wolfman 2014, Govindarajan & Trimble 2013, Gupta & Govindarajan 2000), we developed a measure for *reverse knowledge flow* that consists of three items: (1) transfer of the product itself to the parent company, (2) transfer of some technologies or partial design to the parent company, and (3) transfer of know-how to realize new product effectively. We asked those questions to the subsidiary top managers and they answered on a seven-point scale ranging from 1 being *not at all* to 7 being *a very great deal*. The scale has a Cronbach's alpha 0.78, indicating a reliable internal consistency.

Independent Variables

The nature of a new product. As we discussed before, the features of innovation for emerging markets could be described by three dimensions: Affordability, sociality, and technological novelty (Brem & Wolfman 2014, Hossain 2016). Although there is no established scale for them, we originally developed it based on the existing conceptual, case-based and statistical studies. We asked project managers to rate the project's objectives on six questions: (1) To decrease manufacturing cost, (2) to lower product price compared to the competitor's product, (3) to solve local social problems, (4) to respond to local societal need, (5) to introduce sophisticated technology, and (6) to improve product technical specifications.

The first and second questions are about the *affordability*. Based on Govindarajan & Trimble (2013)'s case-based discussion and Ernst et al (2015)'s statistical operationalization, we asked how the project targeted to lower the cost to make it affordable and beneficial to the lower-income segment. The third and fourth questions are for estimating the degree of *sociality*. Drawing on the conceptual works of Brem & Wolfman (2014) and Bhatti (2013), project managers were asked to provide to what extent his/her project targeted local societal problem or specific need. Finally, in the fifth and sixth questions, we asked the degree of *technological novelty* because it represents a style of problem solving ranging from bricolage or jugaad to newly-developed technology-based solution (Brem & Wolfman 2014, Ernst et al. 2015). We used the average number of correspondent items as the score of *affordability, sociality,* and *technological novelty* to zero. All variables are mean-centered to avoid the occurrence of multicollinearity in investigating interaction terms.

In order to check the discriminant validity of those constructs, we executed confirmatory factor analysis (CFA) for all six items of project objective questions. As a result, we obtained satisfactory model fit: c²/df=7.61/6 (p=.26), RMSEA=.07, and CFI=.97. Furthermore, as for internal consistency, the values of Cronbach's alpha were .68 for frugality, .75 for sociality, and .71 for technology. Hence we confirmed our measures can properly grasp the three dimensions of a new product project objective.

Control Variables

Following communications theory (Krone et al. 1987), the content of knowledge and the condition of channel are the key determinants of knowledge flow between a sender and a receiver. Thus, to estimate the influence of the types of product innovation on the degree of transfer, we need to control the condition of the channel.

Parent company involvement (parent involvement). We assume that the critical determinant of the communication channel condition is the direct linkage between sender and receiver (Krone et al. 1987). Regarding the new product project held in the foreign subsidiaries, it can be captured by the extent of collaboration in development process with its parent company. Thus we measured the degree of parent involvement in that project as the indicator of the direct channel condition. Drawing on the standard process of new product project in manufacturing sector (Eppinger & Ulrich 2015), we asked project managers in local subsidiaries about the degree of participation of parent company in each project phase: (1) concept development, (2) determining product features, (3) product engineering, (4) manufacturing engineering and preparation and (5) market launch strategy. Responses were received on a five point Likert scale ranging from (1) Not at all (subsidiary developed solely) to (5) parent company developed alone, based on the past studies (Nohria & Ghoshal 1994, Roth & Morrison 1992). A Cronbach's alpha of .91 is obtained for this scale.

Socialization. Sharing the same organizational culture between parent company and its subsidiaries, namely organizational socialization improves the quality and quantities of communications (Gupta & Govindarajan 2000). When people share the same culture, they feel a sense of unity and it fosters reciprocal communication and knowledge flows (Li 2005, Tsai & Ghoshal 1998). Following those previous studies, a five-item construct was formulated to capture the degree of socialization. The items were: (1) shared mission and vision; (2) the same organizational culture as the parent corporation; (3) the same business practices as the parent corporation; (4) the similar way of doing business to the parent corporation; and (5) the same rule and policies as the parent corporation. These items were assessed on a seven-point Likert scale (1=strongly disagree, 4=Neither agree nor disagree, 7=strongly agree). A high score means that the focal subsidiary has the same organizational culture as the parent corporation. A Cronbach's alpha value of .91 was obtained for this scale.

Subsidiary importance. The quality of communication was determined by the cognitive importance of the counterpart. If a person recognizes his/her counterpart has an important information for his/her own success, he/she carefully listen to what that counterpart says (Krone et al. 1987). Thus, we operationalized subsidiary importance as recognized by its parent company by five items: Sales, profit and loss, future business expansion, capability building and president's overall evaluation, following Rugman and Verbeke (1992). They assessed overall multinational corporation management on a five-point Likert scale (1=Not important at all, 5=Very important). A Cronbach's alpha value of .82 was obtained for this scale.

To calculate the effects of those variables based on communications theory, we controlled the effect of *subsidiary age*, *size*, and *industrial area* since the subsidiary's local experiences and its competitive environment are fundamental determinants of its behavioral pattern (Paterson & Brock 2002). We measured subsidiary size as the number of employees in thousands and age as the number of years since the subsidiary was established. As for industrial category, we used Japanese industrial classification code to classify the subsidiary's business domain (The numbers of observations are: Chemical=13, electronics=13, machinery=10, automotive=8, metal=4, daily consumer goods=4).

Measurement Assessment

We investigate common method variance issue in the questionnaire survey. Therefore, we employed twostage sampling in which the performance indices and some control items were asked to the subsidiary president at first, then the independent variables regarding the project objective, organization and procedure were discussed with the product project managers. In addition, within questionnaire, we introduced some inverted variables to prevent a respondent from giving answers in the unchanged atmosphere. Thus we believe common method variance is seldom likely to occur. Further, we can confirm that there is no serious risk of common method variance as evident by the Harman's single factor test suggested by Podsakoff et al. (2003). We performed exploratory factor analysis including all items of reverse knowledge flow, affordability, sociality and technological novelty. The factor analysis showed four factors with Eigen-values greater than one, and the first factor accounts for 21 percent of the total variance. That is, there is no evidence of unidimensionality in our data.

We also examine non-response bias as our response rate is relatively low though it falls into allowance range (Harzing 1999). In addition, we felt risk that poorly-performed companies tended to deny responses. To avoid that problem, we consciously emphasized that our survey was to capture the whole situation of emerging market business and new product for it, and strict confidentiality of private information while explaining our survey's objective. Further, we checked some statistics to test the bias. We collected not only product development performance data but also the company's financial performance data in order to check whether the good performer tended to respond or not. Both were asked to evaluate the three items (revenue, profit and manager's overall evaluation) on seven-point Likert scale ranging from (1=Performed very poorly, 7=Performed very well). Their averages/standard-deviation were 4.77/1.15 for newly developed products and 4.78/1.47 for the subsidiary. They show that observations do not concentrate on high performance area, and rather scattered around an average of the moderate number. In addition, we checked the sample's representativeness by comparing the value of the descriptive statistics with those of non-respondents from the population (listed in Toyo Keizai 2016), and found no significant differences among them.

Table 2. Descriptive St	ausues		relatio		ependen	it and it	luepent	Jent van	lables		
Variables	Mean	SD	1	2	3	4	5	6	7	8	
1. Rev Knowledge Flow	2.50	1.28	1								
2. Affordability	0	1.37	.17	1							
3. Sociality	0	1.60	.22	.23	1						
4. Tech. Novelty	0	1.18	.18	.22	.34	1					
5. Parent involvement	3.08	1.20	.32	.34	08	.12	1				
6. Socialization	4.55	1.22	.18	.13	.09	.33	.36	1			
7. Sub. Importance	4.01	.75	.27	.20	15	.05	.06	04	1		
8. Sub. Age	22.01	10.65	.24	.22	04	.04	.30	.42	.32	1	
9. Sub. Size ('1000)	.54	.68	.14	08	01	01	.16	.15	.16	.14	

 Table 2. Descriptive Statistics and Correlations for Dependent and Independent Variables

n=52. Frugality, Sociality and Technological sophistication are mean centered to zero

Finally, we checked the averages, standard deviations, and correlations for all variables to confirm whether they have reasonable number or not. The results are shown in Table 2. Each variable has moderate level of averages and enough variations. The correlations also show that there is no serious collinearity among the independent variables. None correlation surpasses .5.

Results

We employed hierarchical OLS regression analysis to estimate the influences of the independent and control variables on reverse knowledge flow. The results are shown in Table 3. At first, let us look at single effect of independent variables. As for *affordability*, we cannot say that it has any significant impact on *reverse knowledge flow* (p>.1 both in Model 2 and 5). On the other hand, *sociality* has significantly positive impact on it (Beta=.23, p<.05 in Model 3, and Beta=.24, p<.05 in Model 5). Regarding the degree of *technological novelty*, we cannot find any significant impact on reverse knowledge flow (p>.1 both in Model 4 and 5). Thus, we can say that our Hypotheses 1, 2 and 4 are supported. In terms of interaction effects, we found that *affordability* * *sociality* had significantly positive influence on *reverse knowledge flow* (Beta=.15, p<.05 in Model 6). Hence, we can say that *H3* is supported. That is, frugality of innovation promotes the transfer of social products to the parent company.

Dependent Var	Dependent Variable: Reverse Knowledge flow											
	Model	1	Model	2	Model	3	Model4		Model	5	Model	6
	Beta	SE	Beta	SE	Beta	SE.	Beta	SE	Beta	SE	Beta	SE
Intercept	-1.37	1.21	-1.32	1.30	-1.31	1.17	-1.15	1.24	-1.45	1.30	-1.55	1.27
Sociality					.23*	.10			.24*	.11	.28*	.11
Affordability			10	.14					14	.14	18	.13
Technological							.12	.15	.01	.16	.04	.15
Novelty												
Sociality *											.15*	.07
Affordability												
Parent	.28+	.15	.33+	.16	.32*	.15	.27†	.15	.39*	.16	.37*	.16
Involvement												
Socialization	.06	.16	.06	.16	00	.15	.01	.17	02	.17	.02	.16
Subsidiary	.46†	.25	.50+	.25	.41+	.24	.44†	.25	.46†	.25	.49*	.24
Importance												
Sub. Age	01	.01	.01	.01	01	.01	01	.01	02	.01	01	.01
Sub. Size	.03	.26	.00	.26	.04	.25	.05	.26	.00	.26	.05	.25
(Thousands)												
Industry	No		No		No		No		No		No	
Dummy												
Model												
statistics												
Adjusted R ²	.10		.09		.17		.09		.15		.22	
Adjusted R ²			01		.07		.00		.05		.06	
from Model 1												
P (F-	.10		.13		.03		.13		.06		.02	
statistic)												

Table 3. Results of the Hierarchical OLS R	egression Ana	lysis for <i>l</i>	Reverse K	nowledg	ge Flo	w
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n=52 All two-tailed tests. *p<.05, **p < .01, ***p <.001. SE=Standard Error

To observe those interaction effects in more detail, we carried out a cross-tabulation analysis. The results are shown in Table 4.

		Affordability	
		High	Low
Coninlitu	High	2.87 (n=13)	2.48 (n=6)
Sociality	Low	2.29 (n=5)	2.38 (n=8)

Table 4. Cross Tabulation of Reverse Knowledge Flow by Sociality and Affordability

N=52 The number is the mean value of *reverse knowledge flow* of the subsample.

First, we categorized the sample into high versus low *affordability* based on whether they were above or below the mean value of it for the entire sample. We applied the same method to evaluate *sociality*. As shown in Table 4, we can confirm affordability and sociality jointly facilitated the reverse knowledge flow.

Discussion

Contributions

Looking at the results, we can say that all our hypotheses were supported. Affordability itself had no influence on the level of reverse flow of the innovation, but it fostered reverse transfer when the innovation possessed sociality nature. Therefore, here we can emphasis on the importance of sociality. It is important for developed country-based MNCs because in terms of ethics as well as business expansion. We can see the similar social problem like healthy, pollution or natural resource shortage in several areas in the world, so the frugal solution for it becomes worth transferring from one emerging country to the other countries. Similarly, the frugal application of the sophisticated technology was also worth transferring because it is a good way to diffuse that technology.

Those findings may contribute to the academy of innovation management in emerging markets. Although past studies have investigated and emphasized on both reverse innovation and frugal innovation, scarce number of studies mainly considered the relationship between them (Brem & Wolfram 2014, Zedtwitz et al. 2015). Thus, we analyzed it theoretically and empirically. Drawing on our results, we can say that sociality plays a key role of mediating frugality and reverse flow of the innovation. Although past studies have found that the sociality of the product innovation improved its market performance, differentiated competency and sustainability (Kanter 1998, Mulgan et al. 2007, Yunus, Moingeon & Lehmann-Ortega 2010), our study discovered a new effect of sociality on knowledge flow toward the parent company in the developed country.

Implications for Managers

Our findings also suggest some practical implications for MNCs that challenge in emerging markets. As we discussed above, sociality may play the key role in diffusing innovation from one emerging area to the other world. When the innovation possesses social problem-solving nature, it would be valuable for those who suffer from that social problem, wherever they live. That's why MNCs tended to transfer it from one emerging country to the other areas. Affordability, the other character of frugal innovation does not have such a power to improve quality of life of those who face social difficulties in itself, while the affordable product that incorporate sociality performs best. As past studies told, the value of innovation rose when it was utilized by more people (Rogers 2003). In this sense, sociality can be considered as one of the most important characteristics of frugal innovation.

We could also suggest to managers that information channels between headquarters and emerging market subsidiary are quite important in transferring new product ideas. The results suggested that not only the content of information (the nature of the innovation) but also the information channels have strong influence on the degree of the knowledge transfer. In other words, managers should understand that overseas knowledge transfer is like a human communication (Gupta & Govindarajan 2000, Krone et al. 1987). People under different cultural settings are likely to have different ideas, and thus worth

communicating to make changes in our lives. It is true even in case of the business entities. Headquarters can make changes in business when it obtains new idea of business from emerging market subsidiary, which faces totally different business environment from headquarters (Govindarajan & Trimble 2013, Zedtwitz et al. 2015). In this sense, we can say that the headquarters should also take much care of the information channel with emerging market subsidiary.

Limitation and Future Research

Our findings have limitations, and thus we should refrain from overgeneralizing the conclusion. First, we have to mention our limited amount of sample. While we sent more than one thousand questionnaires and collected more than two hundred responses, we finally found that only one fourth of all responses carried out the project. As a result, our sample became quite limited in number. We thought that it was because not many MNCs challenged new product development in emerging countries yet.

Further, our sample only consisted of Japanese MNCs. Even in that sense, we must not overgeneralize our results. Meanwhile, our results can be considered valid from communication theory's viewpoint. To take account of those things altogether, we can conclude that this study examined theoretically predicted relationships with limited Japanese sample. Further studies should be commissioned to reconfirm our results in the future. Not only quantitative but also qualitative study would be valuable to understand what really happens in realizing reverse flow of the product innovation in emerging markets.

References

- Anderson J & Markides, C 2007. Strategic innovation at the base of the pyramid. MIT Sloan Management Review, 49(1), 83-88.
- Arslan A, Leposky, TT & Kontkanen M 2016. National cultural dimensions, emerging market characteristics, and the subsidiary's willingness to transfer marketing knowledge to MNE HQs. Journal of Transnational Management, 21(3), 162-179.
- Baker T & Nelson RE 2005. Creating something from nothing: Resource construction through entrepreneurial bricolage. Administrative Science Quarterly, 50(3), 329-366.
- Bhatti Y 2013. Jugaad innovation: Think frugal, be flexible, generate breakthrough growth. South Asian Journal of Global Business Research, 2(2), 279-282.
- Björkman I, Barner-Rasmussen W & Li L 2004. Managing knowledge transfer in MNCs: The impact of headquarters control mechanisms. Journal of International Business Studies, 35(5), 443–455.
- Brem A & Wolfram P 2014. Research and development from the bottom up-introduction of terminologies for new product development in emerging markets. Journal of Innovation and Entrepreneurship, 3(1), 9-30.
- Cappelli P, Singh H, Singh J & Useem M 2010. The India way: Lessons for the US. The Academy of Management Perspectives 24(2), 6-24.
- Delios A & Henisz WJ 2000. Japanese firms' investment strategies in emerging economies. Academy of Management Journal, 43(3), 305-323.
- Dubiel A & Ernst H 2013. Industrial R&D centers in emerging markets: motivations, barriers, and success factors. In Pedersen et al. (Eds.). The offshoring challenge. NY: Springer.
- Eppinger S & K Ulrich. 2015. Product design and development. NY: McGraw-Hill.
- Ernst H, Kahle HN, Dubiel A, Prabhu J & Subramaniam M 2015. The antecedents and consequences of affordable value innovations for emerging markets. Journal of Product Innovation Management, 32(1), 65-79.
- Gibson D & Williams F 1990. Technology transfer. Newbury Park: Sage.

- Govindarajan V & Ramamurti R 2011. Reverse innovation, emerging markets, and global strategy. Global Strategy Journal, 1(3-4), 191-205.
- Govindarajan V & Trimble C 2013. Reverse innovation: Create far from home, win everywhere. Boston: Harvard Business School Press.
- Gupta AK & Govindarajan V 2000. Knowledge flows within multinational corporations. Strategic Management Journal, 21(4), 473-496.
- Harzing AW 1997. Response rates in international mail surveys: Results of a 22-country study. International Business Review, 6(6), 641-665.
- Hossain M 2016. Frugal innovation: A systematic literature review. From SSRN: https://ssrn.com/abstract=2768254 Accessed on Oct 2, 2020
- Huang KG & Li J 2019. Adopting knowledge from reverse innovations? Transnational patents and signaling from an emerging economy. Journal of International Business Studies, 50(7), 1078-1102.
- International Monetary Fund. 2016. Glossary of Selected Financial Terms. Terms and Definitions. From http://www.imf.org/external/np/exr/glossary/showTerm.asp#E Accessed on Oct 17, 2017.
- Kahn KB 2012. The PDMA handbook of new product development. Hoboken, New Jersey: John Wiley & Sons.
- Khanna T & Palepu KG 2010. Winning in emerging markets: A road map for strategy and execution. Boston: Harvard Business Press.
- Khanna T, Palepu KG & Sinha J 2005. Strategies that fit emerging markets. Harvard Business Review, 83(6), 4-19.
- Kolk A, Rivera-Santos M & Rufin C 2014. Reviewing a decade of research on the "base/bottom of the pyramid" (BOP) concept. Business & Society, 53(3), 338-377.
- Krone KJ, Jablin FM & Putnam LL 1987. Communication theory and organizational communication: Multiple perspectives. In Jablin, F.M., L.L. Putnam, K.H. Roberts & L.W. Porter (Eds.) Handbook of Organizational Communication. Newbury Park, CA: Sage Publication.
- Laperche B & G Lefebvre 2012. The globalization of Research & Development in industrial corporations: Towards "reverse innovation"? Journal of Innovation Economics & Management, 2(10), 53-79.
- Leliveld A & Knorringa P 2018. Frugal innovation and development research. The European Journal of Development Research, 30(1), 1–16.
- Lee Y, Lin BW, Wong YY & Calantone RJ 2011. Understanding and managing international product launch: A comparison between developed and emerging markets. Journal of Product Innovation Management, 28(s1), 104-120.
- Li L 2005. The effects of trust and shared vision on inward knowledge transfer in subsidiaries' intra-and inter-organizational relationships. International Business Review, 14(1), 77-95.
- London T & Hart SL 2004. Reinventing strategies for emerging markets: Beyond the transnational model. Journal of International Business Studies, 35(5), 350-370.
- Malodia S, Gupta S & Jaiswal AK 2020. Reverse innovation: A conceptual framework. Journal of the Academy of Marketing Science. 48, 1009-1029.
- Nakagawa K, Tada K & Fukuchi H 2017. Organizational cultural crossvergence and innovation: Evidence from Japanese multinationals in emerging markets. Cross-cultural Management Journal, 11(1), 47-57.
- Nakamura M, Shaver MJ & Yeung B 1996. An empirical investigation of joint venture dynamics: Evidence from US-Japan joint ventures. International Journal of Industrial Organization, 14(4), 521-541.
- Nohria N & Ghoshal S 1994. Differentiated fit and shared values: alternatives for managing headquartersubsidiary relations. Strategic Management Journal, 15(6), 491-502.
- Paterson S & Brock D 2002. The development of subsidiary-management research: Review and theoretical analysis. International Business Review, 11(2), 139–163.
- Petrick IJ & Juntiwasarakij S 2011. The rise of the rest: Hotbeds of innovation in emerging markets. Research-Technology Management, 54(4), 24-29.

- Pisoni A, Michelini L & Martignoni G 2018. Frugal approach to innovation: State of the art and future perspectives. Journal of Cleaner Production, 171(10), 107-126.
- Podsakoff PM, MacKenzie SB, Lee JY & Podsakoff NP 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5), 879-903.
- Prahalad CK 2005 The fortune at the bottom of the pyramid: Eradicating poverty through profits. Vikalpa, 30(2), 149.
- Prahalad CK 2012. Bottom of the pyramid as a source of breakthrough innovations. Journal of Product Innovation Management, 29(1), 6-12.
- Prahalad CK & Mashelkar RA 2010. Innovation's Holy Grail. Harvard Business Review, 88(7/8), 132-141.
- Rogers E 2003. Diffusion of Innovations, 5e. New York: Simon and Schuster.
- Roth K & Morrison AJ 1992. Implementing global strategy: Characteristics of global subsidiary mandates. Journal of International Business Studies, 23(4), 715-735.
- Rugman AM & Verbeke A 1992. A note on the transnational solution and the transaction cost theory of multinational strategic management. Journal of International Business Studies, 23(4), 761-771.
- Sharma A & Iyer GR 2012. Resource-constrained product development: Implications for green marketing and green supply chains. Industrial Marketing Management, 41(4), 599-608.
- Standard & Poor's 2017. S&P Dow Jones Indices' Annual Country. Classification Consultation. Retrieved on 2017/10/17. Link: https://jp.spindices.com/documents/index-news-and-announcements/20161215-spdji-country-classification-consultation-results.pdf?force_download=true)
- Szulanski G 1996. Exploring internal stickiness: Impediments to the transfer of best practice within the firm. Strategic Management Journal, 17(S2), 27-43.
- Toyo Keizai 2016. Kaigai Shinshutsu Kigyo Soran. Tokyo: Toyo Keizai, in Japanese.
- Tsai W & Ghoshal S 1998. Social capital and value creation: The role of intrafirm networks. Academy of Management Journal, 41(4): 464-476.
- Williamson PJ 2010. Cost innovation: preparing for a 'value-for-money's revolution. Long Range Planning, 43(2), 343-353.
- Zeschky M, Widenmayer B & Gassmann O 2011. Frugal innovation in emerging markets. Research-Technology Management, 54(4), 38-45.
- Zeschky MB, Winterhalter S & Gassmann O 2014. From cost to frugal and reverse innovation: Mapping the field and implications for global competitiveness. Research-Technology Management, 57(4), 20-27
- Zedtwitz M, Corsi S, Søberg PV & Frega R 2015. A typology of reverse innovation. Journal of Product Innovation Management, 32(1), 12-28.

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SCM policy implementation and compliance in the Ngaka Modiri Molema District, South Africa

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The newly developed Supply Chain Management (SCM) Policy was introduced by the South African government for the public sector. The aim of this study was to research policy compliance by local municipalities in the North West province of South Africa. The mixed method research design was employed to obtain the primary data required in addition to the secondary data incorporated. The findings revealed only partial compliance with the SCM policy by all five of the municipalities included in the study. Municipalities face a set of serious challenges and a set of propositions are made to enable municipalities to improve their SCM policy compliance.

Keywords: South Africa, policy, supply chain management

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Introduction

Global dialogue on good governance is underpinned by a call for governmental vigilance to curb the spread of corruption and fraud and promote integrity-driven administration. In this context, the public sector and municipalities are expected to serve as exemplars of a high standard of professional ethics. Achieving this standard requires infrastructure supported by enabling policies (Duffield 2014). After taking office in 1994, the government of South Africa initiated services of budgetary and financial reforms to modernize the management of the public sector, to make it more user-friendly and sensitive to meeting the needs of communities served. Government decided to introduce the concept of Supply Chain Management (SCM) in the public sector to address inefficiencies in procurement, contract management, inventory/asset control, and also obsolescence planning (Thomas 2012). During December 2003, the SCM policy was introduced for national and provincial public entities with the objective to transform outdated procurement and provisioning practices into an integrated SCM function, to introduce a systematic approach for the appointment of consultants to create a common understanding and interpretation of the preferential procurement policy, and to promote the consistent application of best practices throughout government's supply chain. Although a number of reforms have been introduced within the procurement system in South Africa, the procurement system is still facing a number of serious challenges, such as fraud and corruption (Ambe 2016).

The value of this research lies primarily in the fact that SCM was implemented fifteen years ago on a rollout plan. This study is based on the implementation of the SCM policy process in order to derive recommendations for improving SCM practices comparable to those of international best practices. This will not only benefit government but all communities served by government. Considering the philosophical importance of SCM policy to business success and South African municipalities (Marchese & Paramasivam 2013), it was worth investigating compliance with the SCM policy; and what is clearly a growing threat (challenge) arising from inadequate compliance, and find ways of how management can best deal with the issue. The purpose of this study was to explore the policy compliance and to identify the challenges causing non-compliance. The purpose of this article is defined by the following research question: What is the bearing of SCM policy? The aim of the study was to report on the impact the policy has on compliance with the policy and to identify the challenges arising from inadequate review undertaken and subsequent sections present the research method followed, the research results and its discussions, and finally the recommendaitons and conclusion.

Research Problem

The Office of the Auditor General South Africa (AGSA 2012) reported material misstatements in the financial statements submitted by municipalities by indicating that there are unfair or uncompetitive procurement processes in some instances, and also that there are inadequate or no performance management systems in place. However, unauthorized, irregular, and fruitless and wasteful expenditure were not prevented and there was no evidence of any investigations in this regard. Competencies of financial officials, supply chain management officials, chief financial officers, and heads of the supply chain management units were not assessed and/or reports on compliance with prescribed competency levels were not submitted to treasuries. Irregular expenditure incurred during the 2013-14 financial year are extremely high and showed an increase compared to that recorded for the previous year. Almost all of the irregular expenditure incurred (99%) was a direct result of non-adherence to SCM prescripts. Irregular SCM practices render supply chain management policy objectives ineffective. Time and money are invested in the training and development of staff in order to ensure that they are able to execute their work according to expected standards, but they are still unsuccessful in meeting the supply chain management policy. It was therefore deemed necessary to conduct a study to obtain an understanding of the compliance with the SCM policy in local government, municipalities as in this case.

Literature Review

Subsequently is a synopsis of literature on SCM for understanding what supply chain management policy is, the guiding pillars of SCM policy, as well as the problems associated with the management of SCM policy.

Theories of SCM

Numerous theories have been used by researchers to understand why some supply chains succeed in creating value while others do not. Although perspectives of and prescription to SCM vary, a common idea among researchers is that competitive success for a strategic supply chain is contingent on management's ability to recognize changes in the competitive environment and then direct and coordinate action within and across organizations to utilize resources effectively and meet the demands of the environment (Cheng et al. 2014, Harland 2013). This is attributed to the contingency theory. The contingency model is driven by technological innovation, management skills across departments and

organizational functions, and integration vertically and horizontally across industry (Manyathi & Niyimbanira 2014, Stonebraker & Afifi 2004). A second theory that helps explain how supply chains can create value is force field theory. According to the Force field theory, the ability to scan the environment for the forces driving SCM, to identify the potential barriers (or resisting forces), and to implement bridges enables SCM actors to maintain competitive success in changing environments and markets (Lewin 1951). However, implementation of a successful supply chain may encounter resisting forces that include lack of SCM actor's support, inadequate measurement and information systems, and organizational culture. Thus, the implementation of a successful supply chains by local municipalities in the North West province of South Africa can create value contingent on their ability to overcome resisting forces through various mechanisms.

Overview of Supply Chain Management

Blanchard (2010) advocates that Forester is the true father of the philosophy of Supply Chain Management (SCM), which has changed considerably over the past 30 years (Ross 2013). As noted by Venus (2014), literature often claims that SCM is an extension of logistics and also that it is a development in managing the supply base and purchasing function. Carter and Liane (2011) opine that physical distribution (logistics) has been expanded into the broader concept of SCM. Waters and Rinsler (2014) have another point of view, namely that there is no distinction between SCM and logistics and the former is an evolutionary extension of logistics. SCM has become an exceptional strategic concept not only in the private sector, but also in government institutions (Ross 2015). In recent years, the regulation of goods and services by means of fair, competitive and cost-effective systems and processes (Ambe 2016, Bent 2014). As indicated by Bent (2014) and Oppelt (2019), in line with regulated systems and processes, governments realized the importance of SCM as a socioeconomic development tool. For example, SCM is one of the key tools and mechanisms enabling the South African government to implement policy for socioeconomic development and transformation.

Objective of SCM

The overall objective of SCM is to maximize value in the supply chain. The value generated by a supply chain is the difference between what the final product is worth to consumers and the costs the supply chain incurs in fulfilling the consumers' requests (Chopra & Meindl 2010, Leong 2014). SCM has increasingly been adopted by organizations as a medium for creating and sustaining competitive advantage (Fawcett et al. 2008, Thatte et al. 2013). Competitive advantage is built upon a well-planned and executed suitable SCM strategy (Seuring 2011). Chopra and Meindl (2010) and De Beer (2015) concur and are of the view that supply chain maximizes overall value in an organization. This is based on the actual value created through supply and demand, whereby a relationship exists between the worth of a final product and its worth to consumers, compared to the actual cost incurred by supply chains in responding to consumers' needs.

However, the success of a supply chain is closely connected to the success of the management of the supply chain flows. This point of view, according to Chopra and Meindl (2010), is indicative of the ability of an organization to respond to the specific needs of consumers by creating a competitive advantage through the quality of products and services provided. Hence, SCM adds value to an organization by improving responsiveness, convenience, availability and the quality of products at an affordable price. SCM sets out an effective, efficient and innovative process for demand planning, procurement (including strategic resourcing), contract management, inventory management, asset control, and also disposal management. These processes are standardized in the form of a policy framework governing SCM (Monczka et al. 2015, RSA National Treasury 2004, SCM Guide to Accounting Officers/Authorities 2004). Policy guidelines apply to the acquisition and disposal of all goods, services, construction and road works,

and all movable property of all government institutions. Essentially, the SCM policy deals with management principles relating to the integrated stages as envisioned by the South African National Treasury.

Supply Chain Management in the Public Sector

The South African Cabinet in 2003 adopted a SCM policy to replace outdated procurement and provisioning practices. The aim was to implement a SCM function across all spheres of government, which would be an integral part of financial management and conform to international best practices (National Treasury 2005). The aim of the SCM policy framework is to do the following: promote uniformity and consistency in the application of SCM processes throughout government; facilitate the standardization and uniform interpretation of government's preferential procurement legislation and policies; and complete the cycle of financial management reforms introduced by the Public Financial Management Act (PFMA) by devolving full responsibility and accountability for SCM related functions, in addition to financial management functions, to accounting officers and authorities (National Treasury 2005). SCM is built upon ensuring value for money, open and effective competition, ethics and fair dealing, accountability and reporting, and equity (Van Greunen, Herselman & Van Niekerk 2010) and this also applies to the public sector. In ensuring that these values will achieve the ultimate goal of uniformity in procurement processes, good governance and economic development as specified by National Treasury (2005) is required. The framework for the SCM system constitutes demand management, acquisition management, logistics management, disposal management, risk and also performance management. This framework is guided by the preference point system to achieve redistribution of wealth (ensuring equal opportunities).

The SCM Policy within Government

All government entities were expected to adopt and implement a SCM policy. According to treasury regulations, the SCM policy of each entity is expected to be fair, equitable, transparent, competitive and cost-effective, and it must cover the full range of SCM processes used for tenders, guotations, auctions, and various other types of competitive bidding. The situation in which municipalities ought to use a particular type of process includes procedures and mechanisms for each type of process, procedure and mechanism for more flexible processes where the value of a contract is below a prescribed amount, and open and transparent pre-qualification processes for tenders or other bids (Local Government Municipal Finance Management Act 56 of 2003, Republic of South Africa 2003). The SCM policy entails five major objectives adopted by cabinet (National Treasury 2014, Rampedi 2010) and these are: (1) Transform government procurement and the provisioning practices into an integrated SCM function. (2) Embark on introducing a systematic approach to the appointment of consultants. (3) Create common understanding and interpretation of the preferential procurement policy. (4) Ensure best value for money while improving service to achieve delivery, thus moving away from the lowest price scenario to the best value for money scenario. (5) Consistently promote the application of best practices throughout government's supply chain. After acquiring an understudying of SCM policy, the focus of the subsequent discussion is on the guiding pillars of SCM policy within municipalities in South Africa.

Guiding pillars of SCM policy

SCM policy is guided by certain value systems, referred to as the five pillars of SCM, which are embedded in the constitution of South Africa (Hlakudi, 2015) and also pronounced as the pillars of procurement. These are briefly discussed below.

Value for Money

This is an essential test against which a department must justify a procurement outcome. Kerzner (2013)

mentions a lower price is not the best indicator, since a lower price does not ensure the awarding of the business. A purchaser is not obliged to accept the lowest price, because it does not guarantee value for money. The best value for money means the best available outcome when all relevant costs and benefits over a procurement cycle are considered. Aitken (2015) indicates that a procurement function must provide value for money and should be carried out in a cost-effective way. In organizations that are centrally located or devolved, individual departments should: avoid any unnecessary costs and delays for themselves or suppliers; monitor the supply arrangements and reconsider them if they cease to provide the expected benefits; and ensure continuous improvement in the efficiency of internal processes and systems.

Open and Effective Competition

Open and effective competition requires a framework of procurement laws, policies, practices and procedures that are transparent. That is, it must be readily accessible to all parties. It encourages effective competition through procurement methods suited to market circumstances (Biramata 2014). Denscombe (2014) explains that government entities need to apply these principles and do research to get the best possible outcome from the market by ensuring that: potential suppliers have reasonable access to procurement opportunities and available opportunities are published at least in the Government Tender Bulletin; where market circumstances limit competition, departments recognize this fact and use procurement methods that take account of it; adequate and timely information is provided to suppliers to enable them to bid; Bias and favoritism are eliminated; and the costs of bidding for opportunities do not deter competent suppliers.

Ethics and Fair Dealing

In procurement, if all parties comply with ethical standards they can deal with one another on a basis of mutual trust and respect and conduct their business in a fair and reasonable manner and with integrity (Ambe & Badenhorst-Weiss 2012). All government staff associated with procurement, particularly those dealing with suppliers or potential suppliers, are required to: recognize and deal with conflict of interest or the potential for it; deal with suppliers even-handedly; ensure they do not compromise the standing of the state through acceptance of gifts or hospitality; be scrupulous in their use of public property; and provide all assistance in the elimination of fraud and corruption.

Equity

Equity, as narrated by Hlakudi (2015), is derived from the context guidelines, meaning application and observance of government policy that are designed to advance persons or categories of persons disadvantaged by unfair discrimination. This fourth pillar is vital to public sector procurement in South Africa. It emphasizes economic growth by implementing measures to support industry in general, and especially to advance the development of Small, Medium and Micro Enterprises (SMMEs) and Historically Disadvantaged Communities (HDCs). SMMEs and HDCs have to play a bigger role in the economy and more diversified ownership in terms of race and gender is necessary (Hlakudi 2015). To ensure equal treatment, councilors are prohibited from participation in tender committees, lest they influence tender awarding.

Accountability and Reporting

Accountability and reporting, as commented on by Munyera (2014), involves ensuring that officials and organizations are answerable for their plans, actions and outcomes. Openness and transparency in administration, by external scrutiny through public reporting, is an essential element of accountability within the procurement framework and Shaoul et al. (2012) stated that: heads of departments are accountable to their ministers for the overall management of procurement activities; heads of

procurement and senior procurement directors are accountable to heads of departments for various highlevel management and co-ordination activities; individual procurement officers are accountable to heads of procurement, and to their clients, for the services they provide; and all people exercising procurement functions must follow these guidelines and are accountable to management. However, there still are serious problems experienced in the public sector in South Africa and the subsequent section elaborates on a set of problems faced by supply chain management policy.

Problems Faced by Supply Chain Management Policy Framework

Supply Chain, as mentioned by Chopra and Meindl (2010), consists of stages (direct and indirect) involved in fulfilling consumer requests and the problems specific to SCM are depicted in Figure 1.



Figure 1 Problems Faced by Supply Chain Management Policy Framework

Source: adapted from Chopra & Meindl (2010)

It is important to note that SCM is regarded as an integral part of procurement in the South African public sector. Therefore, SCM policy is a tool for the management of public procurement practices. However, despite the employment of SCM as a strategic tool, public procurement in South Africa still faces enormous problem and the problems, as illustrated in Figure 1, will now be dealt with.

Distribution Network Configuration

Smelser (2013) mentions that new arrangements appear since a supplier no longer relies only on its internal resources but rather is required to be able to combine these resources in new ways and to gain additional resources, and to do this repeatedly. Wilson and Daniel (2010) indicate that there is need for multi-channel arrangements which deal with two aspects of distribution variety. Firstly, towards handling the diversity between various consumer groups; and secondly, arrangements make it possible for a specific consumer to select the distribution solution that is most appropriate in a particular situation.

Distribution Strategy

Distribution strategy, or marketing channels, act as a system of mutually dependent organizations included in the process of making goods or services available for use or consumption. Moreover, Christopher (2016) allude that a distribution strategy or market channels is the external contractual organization management operates to achieve its distribution objectives. Distribution strategy provides downstream value by bringing finished products to end-users. This flow may involve the physical

movement of a product or simply the transfer of title. This is also known as a distribution channel, a distribution chain, a distribution pipeline, a supply chain, a marketing channel, a market channel, and a trade channel. Rosenbloom (2012) similarly explains that distribution strategy is one or more organizations or individuals who participate in the flow of goods and services from a manufacturer to a final user or consumer.

Trade-offs in Logistical Activities

Managers need accurate information to identify cost reduction opportunities and to re-engineer their logistics processes with the aim of making managers more efficient (Mukopi & Iravo, 2015). The success of these attempts depends on the ability of the cost analysis system to identify the resources consumed for a specific product, procurement channel or logistic activity. The detail and complexity level of this information depend on the products, services and delivery channels used.

The cost analysis of each activity allows for a more efficient assignment of resources identified. Cost managers need accurate information to identify cost reduction opportunities and to re-engineer their logistics processes with the aim of making managers more efficient (Mukopi & Iravo 2015). However, the success of these attempts depend on the ability of the cost analysis system to identify the resources consumed for a specific product, procurement channel or logistic activity. The detail and complexity level of this information depends on the products, services and delivery channels used. The cost analysis for each activity allows for a more efficient assignment of the resources by identifying any cost reduction and new technology investment opportunities since it updates real profitability for every client and production service. The identification and development of more profitable activities presented along a supply chain should lead to an improvement in the performance of an organization.

Information

An information system in the distribution network plays an important role in a supply chain in a distribution strategy or marketing channels. Information technology can play various roles within a supply chain and Bowersox *et al.* (2010) and Zott *et al.* (2011) mention the following roles: Facilitating managerial decision making. Helping to monitor and control operations. Enabling the initiation of activities and monitoring of process-related information. Allowing the creation of simulation systems. Allowing data storing and processing. Allowing data analysis needed for creating useful information. Facilitating the communication among individuals, companies and devices. Allowing the development of information systems.

Inventory Management

Inventory management permeates decision-making and has been extensively studied in the academic and corporate spheres (Ross 2013). The following key questions are usually influenced by a variety of circumstances inventory management seeks answers to: when to order, how much to order, and how much stock to keep as safety stock. Inventory management involves a set of decisions that aim at matching existing demand with the supply of products and materials over space and time in order to achieve specified cost and service level objectives, observing products, operation, and demand characteristics (Hugos 2011).

Cash-Flow

Cash flow, as explained by Silva and Carreira (2012), contains information about investment opportunities and potential profitability of existing assets, and companies without financial constraints may decide on capital adjustments as a response to investment opportunities. Therefore, companies without financial constraints would have higher levels of cash flow. Silva and Carreira (2012) advocate boldly that cash flow may contain valuable information about investment opportunities. In other words, they argue that difficulties associated with Tobin Q ratio can affect sensitivity of cash flow and Chen and Chen (2012) comment that the investment-cash flow sensitivity has declined over time. After taking a closer look at the problems faced by SCM policy, the subsequent discussion deals with the prerequisites needed for the effective implementation of SCM policy

Prerequisites for the Implementation of SCM Policy

In terms of Section 217 of the Constitution of the Republic of South Africa, when government contracts for goods and services it should be done in such a way it that is fair, equitable, transparent, competitive and cost-effective. In addition, the SCM system must provide for the advancement of the categories of persons disadvantaged by unfair discrimination. These are the cornerstones of South Africa's public sector procurement system (National Treasury, 2015). This includes the public sector approach as expounded below. The numerous public sector supply chains play a key strategic role in government's ability to execute its mandate of service delivery to communities in terms of the construction of roads, the supply of water, sanitation and sewerage systems, and the provision of electricity. Johnson (2014) mentions that this can only happen by way of effective SCM frameworks, which are managed by competent officials (Giannakis, 2011). Ambe (2012) mentions that a government sector focus area could, for example, be the health sector where the focus may be more on logistics and the effective movement of goods and services in and out of hospitals; whereas, SCM in the education sector may focus on streamlining the chain through which teaching materials are delivered to students. The shape of the supply chain and the supply chain management processes employed thus will vary considerably, depending on a range of different considerations (Ambe & Badenhorst-Weiss 2011).

Public sector SCM offers a reference framework for the composition of public sector supply and multilevel networks (Ambe & Badenhorst-Weiss 2012). Actors in the public sector supply chain are: (1) private organizations receiving orders from public sector agents and (2) accounting institutions cooperating in goods and services, as well as how these enterprises are involved with enterprises operating at other levels. This statement is supported by the United Nations Institute for Training and Research, reinforcing that the public sector supply chain plays a vital role in government's ability to execute service delivery (United Nations Institute for Training and Research 2014). In support of the above, the Office of Government Commerce (2011) emphasize that procurement is not only limited to complex projects such as construction, but that smaller items such as stationary should also be obtained within this policy.

Research Methodology

In order to comply with the research objectives, the mixed method research design, including both qualitative and quantitative data, have been used. Qualitative data was collected first, followed by collecting the quantitative data. Qualitative researchers make use of individual interviews and document analysis and individual interviews were conducted with senior managers of departments, based on their level of understanding and experience of the SCM policy. A document analysis was used to collect various records in respect of the SCM policies within the public sector. The quantitative component of this study used a questionnaire to collect data. The added advantage is that findings could be interpreted numerically. Also, through closed ended questions, it was possible to collect data on participants' viewpoints concerning their impressions of the level of compliance with the SCM policy. The exploratory design, where qualitative data was collected first before the quantitative phase followed, is typically used in the initial phase with a few individuals first to identify themes, ideas and perspectives and this was then used to design the quantitative component of the study. Quantitative data were collected by means of a self-administered questionnaire comprising of structured and unstructured questions to gather data from

the target population. Questionnaires were distributed to officials involved in SCM, operations, internal auditing, finances, human resources, and also marketing at the five local municipalities.

Population, Sample Size and Data Collection

The participants that were used in this study were SCM managers, Municipal Mangers, SCM managers and officials, CFO Managers, human resource managers and officials, marketing managers and officials, operational managers and officials, internal audit managers and officials from all five of the local municipalities: Mahikeng, Ditsobotla, Ramotshere, Tswaing and the Ratlou Municipality.

Municipal workers of the five local municipalities were selected using the convenience sampling method. This enabled selecting respondents based on their availability and proximity, also their knowledge on SCM policy matters in the local municipalities. The sample size of the municipality workers was determined by using Research Advisor's (2006) sample size calculator with a 95% confidence interval and a 0.05 degree of accuracy/margin of error and the sample size for the municipality workers was 430. A proportional stratified sampling method was used to determine the total number of samples to be draw from each municipality. Table 1 presents the sample size for the municipality populations in the five local municipalities determined by means of proportional stratified sampling fractioning.

The data collection methods used for the qualitative component was semi-structured interviews and a document analysis; and, the quantitative component utilized self-administered questionnaires for collecting the data needed.

Local Municipalities	Population size	Sample size
Mahikeng	827	149
Ditsobotla	646	117
Ramotshere Moiloa	379	68
Tswaing	353	64
Ratlou	176	32
Total no. of employees	2381	430

Table 1. Sample Size for Employees in the Five Local Municipalities

Note: the study sampled 430 members from five local municipalities, 30 members made up the qualitative sample and 400 members formed the quantitative sample.

Data Analysis, Results and Discussion

For the qualitative component of this study, data collected through the semi-structured interviews were analyzed through open coding and the process started with transcribing the data from the audio tapes and field notes. The data was rated into themes and categories and major issues related to complying with the SCM policy. The quantitative data obtained was organized and analyzed descriptively using the Statistical Package for Social Sciences (SPSS). The following results are based on the mean and median scores. Following is a presentation of the results obtained on the compliance and implementation of the SCM policy in the public sector in the North West province.

The empirical findings revealed that most of the senior managers are confident about their SCM policy supplier knowledge and it was further discovered that employees with the required supplier knowledge are those who have been through training and they understand and implement the policy correctly. However, those who do not have supplier knowledge as per the SCM policy have not had recurring and intensive training and do not fully understand or implement the policy correctly. Due to a lack of SCM policy supplier knowledge, most managers do not implement the SCM policy effectively and this

undoubtedly causes non-compliance. Therefore, the existence of challenges in municipalities are evidenced by a lack of knowledge and consequent non-compliance. This result was also similar to that of Ambe and Badenhorst-Weiss (2011) and Masete and Mafini (2018) who expressed the need for proper understanding of policy, and if policy is not understood, it will lead to non-compliance with SCM policy due to a lack of skills, capacity and knowledge of the workforce to be able to fully implement SCM policy across various spheres of government. The empirical findings revealed that participants have varying levels of technical know-how. Some senior managers have good technical know-how while others lack technical know-how. Moreover, the results also revealed that the level of technical know-how is firmly linked with performance. Managers with good technical know-how are executing their responsibilities in accordance with the SCM policy while managers who do not have technical know-how in performing their duties are not as effective in executing their mandates. This conforms to the research conducted by Anderson (2010) and Lemon and Palenchar (2018) where work experience is highly recommended for employees seeing that it enables employees not to only gain experience of what it would be like to work in an ideal environment and develop skills; it gives them a chance to put theory into practice. This finding supports the idea that the main reason for work experience is that employees will gain transferrable skills and have a chance to stand out in an organization whilst being acknowledged for their achievements (Collis & Hussey 2013).

The empirical findings revealed that some senior managers confirmed that they are competent about the compliance with and implementation of the SCM policy, while others do not. The findings also indicate that managers who are competent about compliance and implementation are executing their responsibility in accordance to principles of SCM. However, managers who lack competencies in compliance and implementation are not as effective in executing their mandates due to a lack of the above mentioned skills. This result was also similar where the system contains many excellent people, competency assessments show significant gaps in SCM skills and knowledge (National Treasury 2015). Many municipal SCM actors have attended a number of training workshops on SCM, but they still lack the appropriate knowledge needed for proper compliance and implementation (National Treasury 2015).

Sta	tement	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
1	Staff with supplier knowledge on policy and who are competent about the compliance and implementation of the policy, are executing their responsibility in accordance with principles.	5.6	86.8	3.5	3.8	0.3
2	Staff who lack better knowledge and competence of the policy in compliance and implementation are unable to execute their mandates properly.	33.7	61.1	3.8	1.4	0
4	The negative contribution by internal audit is used to prove fraud and corruption on SCM in this municipality.	27.8	62.8	6.9	1	1.4
5	The SCM sector of this municipality does have and implements effective policies to monitor compliance.	26.6	52.4	18.5	2.4	0

Table 2 Views on SCM policy compliance (%)

The findings revealed that employees with supplier SCM policy knowledge, and who are competent about compliance with and the implementation of the policy are executing their responsibilities in accordance with prescriptions and is supported by 92.4% of the respondents, while 94.8% of the respondents confirmed that employees who lack knowledge and competence of the policy in terms of compliance with

and implementation are unable to execute their mandates properly. The results of the empirical study show that the majority of SCM officials do not comply with the SCM policy and this is relevant to all five of the local municipalities included in this study. Ambe and Badenhorst-Weiss (2012) stated that the issue of compliance is a major obstacle in the implementation of SCM as it affects other activities. Issues regarding non-compliance to SCM policy and regulations can be attributed to a lack of the requisite SCM official skills and competencies, as well as the absence of a stricter regulatory culture. These may include the tendency not to utilize a competitive process for both quotations and bids, and the incorrect utilization of the preference points system. In addition, it is the responsibility of every manager to ensure that their SCM employees are adequately trained about the SCM policy (National Treasury RSA 2004).

The results further show that 90.6% of the respondents indicated that the internal audit is used to prove fraud and corruption in the supply chain in municipalities. Fighting against fraud and corruption by means of internal auditing indicates that the more transparent and reliable employees are in executing their duties, the greater the possibility that they will be effectively executing their job descriptions. This result is also similar to that of Ambe (2016) who confirmed that SCM plays a greater role in poor audit outcomes such as irregular expenditure, lack of basic controls, as well as a lack of supply chain skills. Finally, 79% of the respondents confirmed that SCM in municipalities do have and implement effective policies to monitor compliance. Thus, a lack of an adequate control system in municipalities is a key challenge for establishing SCM policy compliance. Therefore, it is justified to say that employees with inadequate control system execute their mandates poorly. This study confirms that since the implementation of SCM, many municipalities still do not have appropriate organizational monitoring systems in place, partly owing to a lack of skills, knowledge and capacity. Also, there still is a lack of strategic leadership and shared vision as was also previously reported (SCM Review 2015).

Besides these correlated challenges as per the two sets of results (qualitative and quantitative), a typically new concept arises from this empirical study. This is that municipalities should establish a SCM training center at each one of the five local municipalities and employ training experts who will enable employees to have access to regular and constant training, whilst at the same time perform their duties. As with any research study, some limitations are pertinent and were experienced during this study and are presented below.

Limitations of this Study

This study was delimited to the five local municipalities of the selected district. The participants of this study were the senior managers of departments and department officials at the various local municipalities. This study is confined to matters related to compliance with the SCM policy in the district and may be applied to other municipalities in South Africa, which might be subject to the same situation. All research studies have some limitations caused by either time or budgetary constraints. The following limitations were encountered during this research study: Exposure to the subject matter - the researcher has never worked in a fully-fledged supply chain management unit of a municipality. Therefore, some of the matters referred to in the research have not been explored particularly before. The non-availability of sufficient material on the subject of research was also a limitation.

Recommendations

This paper presents research based on the critical issues raised and the following recommendations are made to assist municipal and departmental managers of the Ngaka Modiri Molema District of the North West province and other municipalities, to achieve excellence in their implementation of the supply chain management policy. The following section presents recommendations for senior manages and department officials with regard to this study, as well as recommended further research. The following three recommendations are applicable to the Senior Managers of Departments: (1) The results from the

empirical study indicate that a large percentage of senior managers of departments are aware of the SCM policy in their various municipalities, but most of their subordinates are not aware and do not have sufficient knowledge of the SCM policy. In this situation, managers should ensure that their subordinates are sufficiently trained on the SCM policy to be able to have a good understanding in order to achieve the objectives of the five local municipalities. (2) There is clear evidence provided by the respondents from the five local municipalities that not all managers comply with the SCM policy. The issue of non-compliance is a major hindrance in the implementation of SCM as it has a direct impact on other activities. Issues regarding non-compliance with SCM policy can be attributed to a lack of skill, competencies and training by managers about the importance of the policy for their municipalities. Managers need to have the required skills, need to be competent, and also need to go through the required training to understand how the policy should be complied with. (3) The five local municipalities in the North West province face a number of challenges. Based on the findings, the following is recommended: (1) better planning in the SCM sector; (2) better clarity of roles and responsibilities; (3) sufficient good human resource capacity; (4) training of municipal employees tasked with the implementation of SCM policy; (5) a good infrastructure system for SCM services in the municipality; and (6), a better internal audit control system and well trained personnel.

Further three recommendations related to Departmental Officials include: (1) Managers should create a better way of making the SCM policy known to its entire staff and for them to have an appropriate understanding of the policy in their various municipalities. (2) Managers should consistently provide training to their staff members on the SCM policy; this will enable achieving the objectives of a municipality. (3) All the challenges faced by the municipality staff that restrict them in conducting their activities should be reported immediately to the professional body of municipalities in charge of complaints for immediate action to be taken.

Recommendations for Further Research

The findings of this study, as obtained in the empirical and non-empirical studies, suggest that much need to be done in the area of SCM policy in the South African public sector. Studies need to be conducted in other provinces to ascertain the causes of non-compliance with policy by workers. In broader terms, research is urgently needed to be conducted in the area of compliance and challenges of SCM policy by municipal employees in South Africa. This study recommends that further studies should be undertaken to develop a framework that would update the flow of information in the municipal SCM system with a view to obtaining reliable information to be used in compliance management of the SCM policy within a municipality.

Conclusion

This study aimed at obtaining an understanding of compliance with the SCM policy in the Ngaka Modiri Molema District of the North West province. The findings of this study disclosed that senior managers of departments and department officials' compliance with the SCM policy in their various departments is not effective. It is recommended that more studies should be conducted on compliance with the SCM policy in other provinces of South Africa, and also a comparative study between South Africa and other countries, preferably collaboration with other developing counties such as the member-countries of the Southern African Developing Community (SADC) and/or the combine economies of BRICS (Brazil, Russia, India, China, South Africa). In terms of this research conducted, insight was obtained into aspects that have a negative impact on compliance with the SCM policy within municipalities. This has enabled the formulation of recommendations towards resolving the impact of inefficient compliance with the SCM policy. It is acknowledged that knowledge is power and the researcher has benefited through undertaking this study as it brought about skills and the ability to investigate areas of importance to ultimately contribute towards South Africa and its people.

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References

Aitken R 2015. Corporate Procurement Policy, Government Printing Office. South Africa: Pretoria.

- Ambe IM 2012. The perspectives of supply chain management in the public sector. Journal of Contemporary Management, 9(1), 132-149.
- Ambe IM & Badenhorst-Weiss JA 2012. Supply chain management challenges in the South African public sector. African Journal of Business Management, 6(44), 11003.
- Ambe IM & Badenhorst-Weiss JA 2011. An exploration of public sector supply chains with specific reference to the South African situation. Journal of Public Administration, 46(3), 1100-1115.
- Ambe, IM 2016. Insight into supply chain management in a municipal context. Public and Municipal Finance, 5(2), 20-29.

Anderson DL 2010. Organization development: The process of leading organizational change. USA: Sage.

- Auditor General South Africa (AGSA) 2012. North West General Report on the audit outcomes of local government. Retrieved from http://www.agsa.co.za/Portals/0/MFMA%20201213/201314%20MFMA %20Media%20release pdf (Accessed May 8, 2016).
- Bent RA 2014. The significance of supply chain management with regard to the attainment of value and strategic objectives for municipalities within South Africa: A case study (Doctoral dissertation, Stellenbosch: Stellenbosch University).
- Biramata RA 2014. The Challenges of Compliance to Public Procurement Act 2011: A Case Study of Tanzania Ports Authority (Doctoral dissertation, The Open University of Tanzania).
- Blanchard D 2010. Supply chain management best practices. John Wiley & Sons.
- Bowersox DJ, Closs DJ & Cooper MB 2010. Supply chain logistics management. Boston, Mass.: McGraw-Hill/Irwin.
- Business Day report 2011. Irregular state expenditure jumps 62%. Smart procurement. Retrieved from http://www.smartprocurement.co.za/archives/irregular state expenditure jumps 62. php (Accessed on February 10, 2017).
- Carter CR & Liane EP 2011. Sustainable supply chain management: Evolution and future directions. International Journal of Physical Distribution and Logistics Management, 41(1), 46-62.
- Chen HJ & Chen SJ 2012. Investment-cash flow sensitivity cannot be a good measure of financial constraints: Evidence from the time series. Journal of Financial Economics, 103(2), 393-410.
- Cheng JH, Chen MC & Huang CM 2014. Assessing inter-organizational innovation performance through relational governance and dynamic capabilities in supply chains. Supply Chain Management: An International Journal, 19(2), 173-186.
- Chopra S & Meindl P 2010. Supply chain management: Strategy, planning, and operation. Upper Saddle River, NJ: Prentice-Hall.

Christopher M 2016. Logistics and supply chain management. 4th edition. Edinburgh Gate. Pearson UK.

- Collis J & Hussey R 2013. Business research: A practical guide for undergraduate and postgraduate students. Palgrave MacMillan.
- De Beer M 2015. Supply chain integration with corporate strategy for selected companies in the fast moving consumer goods industry in KwaZulu-Natal, South Africa (Doctoral dissertation).
- Denscombe M 2014. The good research guide: For small-scale social research projects. UK: McGraw-Hill.

- Duffield M 2014. Global governance and the new wars: The merging of development and security. USA: Zed Books Ltd.
- Fawcett SE, Magnan GM & McCarter MW 2008. A three stage implementation model for supply chain collaboration. Journal of Business Logistics, 29(1), 93-112.
- Giannakis M 2011. Management of service supply chains with a service-oriented reference model: The case of management consulting. Supply Chain Management: An International Journal, 16(5), 346-361.

Harland CM 2013. Supply chain management research impact: an evidence-based perspective. Supply Chain Management: An International Journal, 18(5), 483-496.

- Hlakudi JN 2015. The Implementation of Preferential Procurement Policy in Gauteng Province: Challenges and Solutions. Africa's Public Service Delivery and Performance Review, 3(1).
- Hugos MH 2011. Essentials of supply chain management. USA: John Wiley & Sons.
- Johnson WC 2014. Public Administration: Partnerships in public service. USA: Waveland Press.
- Kerzner H 2013. Project management: A systems approach to planning, scheduling, and controlling. USA: John Wiley & Sons.
- Lemon LL & Palenchar MJ 2018. Public relations and zones of engagement: Employees' lived experiences and the fundamental nature of employee engagement. Public Relations Review, 44(1), 142-155.
- Leong CE 2014. A research on supply chain security in Malaysia. International Journal of Supply Chain Management, 3(2), 85-93.
- Lewin K. 1951. Field Theory in social science: Selected theoretical papers. USA: Harper & Row.
- Manyathi S & Niyimbanira F 2014. A descriptive analysis of the possible causes of the inverse audit outcomes: Case of supply chain management of the KwaZulu-Natal Province, South Africa. Mediterranean Journal of Social Sciences, 5(16), 82-82.
- Marchese K & Paramasivam S 2013. The Ripple Effect How manufacturing and retail executives view the growing challenge of supply chain risk. Deloitte Development LLC.
- Masete MZ & Mafini C 2018. Internal barriers to supply chain management implementation in a South African traditional university. Journal of Transport and Supply Chain Management, 12(1), 1-12.
- Monczka RM, Handfield RB, Giunipero LC & Patterson JL 2015. Purchasing and supply chain management. USA: Cengage Learning.
- Mukopi CM & Iravo AM 2015. An analysis of the effects of inventory management on the performance of the procurement function of sugar manufacturing companies in the Western Kenya Sugar Belt. International Journal of Scientific and Research Publications, 5(4), 5-15.
- Munyera PS 2014. Investigating causes for non-compliance to Public procurement legal framework in public Institutions Case Study-Tanzania bureau of standards (tbs) (Doctoral dissertation, Mzumbe University).
- National Treasury 2005. Supply chain management: A guide for accounting officers of municipalities and municipal entities. Pretoria: Government Printer.
- National Treasury 2014. Supply Chain Management: A guide for accounting officers/Authorities. Pretoria: Government Printer.
- National Treasury 2015. Public sector supply chain management review. Retrieved from http://www.treasury.gov.za/ publications/other/SCMR%20REPORT%202015.pdf (Accessed on Apr 24, 2017).
- Office of Government Commerce (OGC) 2011. An introduction to public procurement. Retrieved from http://webarchive.nationalarchives.gov.uk/20110601212617/http (Accessed on May 14, 2017).
- Oppelt CA 2019. Developing a monitoring and evaluation system in supply chain management at Overstrand Municipality (Doctoral dissertation, Stellenbosch University).
- Rampedi DS 2010. The application of supply chain in the office of the premier/ Mpumalanga province (Masters Dissertation, University of Limpopo). Retrieved from http://www.ul.ac.za (Accessed on Feb 11, 2017).

- Republic of South Africa 2003. Local Government Municipal Finance Management Act 56 of 2003. Pretoria: Government Printer.
- Republic of South Africa 2004. Supply Chain Management: A Guide for Accounting Officers/Authorities. National Treasury: South Africa.
- Research Advisor 2006. Sample size calculator. Retrieved from http://www.research-advisors.com/tools/ sampleSize.htm (Accessed on Apr 7, 2016).
- Rosenbloom B 2012. Marketing channels. USA: Cengage Learning.
- Ross DF 2013. Competing through supply chain management: Creating market-winning strategies through supply chain partnerships. USA: Springer Science & Business Media.
- Ross DF 2015. Distribution Planning and control: Managing in the era of supply chain management. USA: springer.
- Seuring S 2011. Supply chain management for sustainable products-insights from research applying mixed methodologies. Business Strategy and the Environment, 20(7), 471-484.
- Shaoul J, Stafford A & Stapleton P 2012. Accountability and corporate governance of public private partnerships. Critical Perspectives on Accounting, 23(3):213-229.
- Silva F & Carreira C 2012. Measuring firms' financial constraints: A rough guide. Not as Económicas, 44 (36), 224.
- Smelser NJ 2013. The sociology of economic life. UK: Quid Pro Books.
- Stonebraker PW & Afifi R. 2004. Toward a contingency theory of supply chains. Management Decisions, 42(9), 1131-1144.
- Thatte AA, Rao SS & Ragu-Nathan TS 2013. Impact of SCM practices of a firm on supply chain responsiveness and competitive advantage of a firm. Journal of Applied Business Research, 29(2), 499-530.
- Thomas JC 2012. Citizen, customer, partner: Engaging the public in public management. ME Sharpe.
- United Nations Institute for Training and Research 2014. Introduction to public procurement (2014). Retrieved from http://www.unitar.org/event/introduction-public-procurement-2014 (Accessed on Jan 15, 2016).
- Van Greunen D, Herselman ME & Van Niekerk J 2010. Implementation of regulation-based eprocurement in the Eastern Cape provincial administration. African Journal of Business Management, 4(17), 3655-3665.
- Venus K 2014. Supply Chain Management: Part of Strategic Management. Journal of Business and Economics, 5(7), 1052-1067.
- Waters D & Rinsler S 2014. Global logistics: New directions in supply chain management. USA: Kogan Page.
- Wilson H & Daniel E 2010. The multi-channel challenge: A dynamic capability approach. Industrial Marketing Management, 23(36),10-20.
- Zott C, Amit R & Massa L 2011. The business model: Recent developments and future research. Journal of Management, 37(4), 1019-1042.

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Culture, democracy and democratization: Cultural values and democracy values

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The present study explores the relationship between democracy (measured by the Freedom in the World index (FIW) and cultural values (by employing Hofstede's Cultural Dimensions). The *r*esults from the linear regression indicate the presence of a number of cultures with affinity toward the values associated with the popular imagery of what constitutes democratic rule. These analyses resulted in the identification of positive outliers—countries with low affinity to democratic values but higher than expected democracy scores. Some points of interest are suggested in relation to the identified outliers and their comparison with *Cultural Neighbors*—countries with physical or historical bonds. Finally, through simple correlation, some connections are proposed between the measured items in order to identify critical cultural elements for democracy and democratization.

Keywords: cultural neighbors, culture, democracy, democratic values, outliers

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Introduction

Among many forms of governance throughout history, democracy has emerged as the political idea, closest to the understanding of the should be structure. A frail structure is difficult to attain, maintain and easy to break. Some countries have kept a democratic organization despite circumstances, but for many, democracy is a far promise and/or a lost past. Despite ongoing discussions on whether democracy is superior to other systems or not, many still strive for it. The purpose of the study is to present a different angle on the possible means for obtaining or progressing toward democracy, and for protecting or recovering diminished democratic principles. This study contributes to discussion relating to democratization in a world where implanting a more or less fixed template on how to achieve democracy is the mainstream focus. But, what is democracy? Is it the rule of the majority, or a direct self-government from the people by the people for the people, or a set of values and institutions ensuring that no one needs be afraid of one another? If we take democracy as a representation of the will of the people, then it should also represent their values. For the purpose of this paper the best approximation to such values is considered to be culture. In the following section, we present: (1) What is democracy and how it is measured and why Freedom in the World index (Freedom House) was chosen for this study; (2) Democratization and the role of democracy conceptualization in its pursue; and (3) The meaning of culture and why Hofstede's Cultural Dimensions Theory is used for this research.

Based on these points we try to answer questions, such as does national culture predict the compliance with democratic standards? If so, which countries stand out given their culture? And what can be inferred from the culture-democracy connection? By answering these questions, we hope to show a

different way to approach the study of democracy and democratization, and give some new tools to practitioners pursuing democracy in their regions. Before starting, we recognize that democracy and democratization cannot be reduced to an analysis over culture. Other factors such as economic development (Lipset 1959, Treisman 2020), social equality (Acemoglu & Robinson 2006, Przeworski et al. 2000) and education (Alemán & Yeaji 2015) have considerable influence. Such factors are considered when necessary without straying from the main topic. A more in-depth country-specific analysis on individual circumstances is excluded from the scope of this paper.

Literature Review and Model Development

Democracy

In modern society, democracy seems to be the standard to achieve by most countries. Although there have been instances when non-democratic actions have received wide support (Wike et al. 2017), the term *democracy* evokes notions of freedom, individual and human rights, and liberty (Dalton et al. 2007). Diverse ideas converge in the conception of democracy, but all of them encompass a mode of associated living (Offor 2014)—more than a form of government; it's primarily a mode of associated living of conjoint communicated experience (Dewey 1922). However, even this, rather general, way of defining democracy has its critics (Talisse 2011). This illustrates how difficult it is to define the meaning of 'democracy'—either in academia or in the public domain—beyond considering it *good* (Kekic 2007, Schwertheim 2017). Moreover, multiple types of systems exist under the umbrella of democracy—direct or representative, religion-based—Islamic, Jewish, ethnic (e.g. Malaysia) and different levels of freedom (e.g. liberal or defensive democracies, among others). Still, all represents a mode of associated living.

But, what can be a defining factor? Dahl (2008) focuses on institutions and procedures. Free and fair elections appear as definitive elements (Dalton et al. 2007). However, the dominant benchmark idea—even if it is not a clear one—is that democracy is based on a group of political rights and civil liberties and on a set of values as hoisted by *Western democracies* (Gastil 1990, Schubert 2015). Without excluding the existence of various types of democracy, this research is based on the current popular conception of democracy and the implied standards for achieving it. Finally, there are multiple measurement approaches but we believe that a more gradual approach is more useful for analysis (Elkins 2000). Amongst the best known are: FIW (Freedom House), The Polity Project (Center for Systemic Peace) and The Democracy Index (The Economist Intelligence Unit). For this study, we use the FIW Index based on its well-detailed methodology and disaggregated data, which makes analysis clearer than compound indexes that rely on different sources.

The Path to Democracy

For decades democracy is being seen as the goal of the system change. Yet, even though the notion of democracy is widely spread, most countries have not crossed the democratic threshold fully or even partially (EIU 2018, Freedom House 2018). Lindberg et al. (2018) define the process of democratization as a series of substantial institutional changes that improve the democratic characteristics of a regime, a liberalization process, which, however, is not equal to the consolidation of democracy (Linz & Stepan 1996). A society which has been living for a considerable amount of time under non-democratic systems could hardly embrace *full democracy* immediately; a gradual transition is needed. This means changes— sometimes drastic—in institutions and procedures, and the possibility of causing some institutional chaos. Moreover, democracy and democratization could introduce new issues and exacerbate weaknesses (Huntington 1993). These weaknesses become more critical in less developed systems, resulting in *democratic backsliding*—a decline in the quality of democracy (Waldner & Lust 2018). Be it populism, economic inequalities or social discontent (Mudde & Kaltwasser 2017, Waldner & Lust 2018), democratization is probably at its most vulnerable when it has not reached the consolidation stage.

Democratization, then, is not a simple process. If it were simple, transitioning should be a smooth replicable task. History proves the contrary (Lindberg et al. 2018).

Certainly, democratic ideas have become more prominent over the last centuries. However, looking at the different waves of democratization and the results from movements such as the Arab Spring, and the recent rise of populist leaders surfacing on the international scene, a more complex picture appears. According to The Economist Intelligence Unit (2018), the vast majority of democracies (full or flawed) are concentrated in North America, Western Europe, Latin America and the Caribbean. As exposed in the previous section, democracy is measured and based on the values of the Western democracies. What is commonly considered as a concept of modern democracy grew within the Western civilization. These values facilitated the existence of democratic institutions and processes based on popular will, progressive civil rights and freedoms until its current shape. It is not democracy which gave birth to a democratic culture, but culture which gave birth to a democratic system.

Culture as a Factor for Democratization

If defining democracy is a challenging topic, culture is just as evasive. Concepts such as *Political culture*, akin to political studies, are subject to analysis and debate, classification and reclassification based on diverse aspects (Almond & Verba 1989, Lijphart 1968, Stewart 1988). However, we take an approach that is separated from political perspectives on culture. Different cultural determinants have been explored and measured in a number of research areas (e.g. cross-cultural management that focuses on cultural differences) (Hofstede 1984, House et al. 2002, Trompenaars 1993) but for the purposes of our study we have employed Hofstede's Cultural Dimensions Theory, which is one of the most used measurement systems in management. According to Hofstede (1984) culture is *the programming of the human mind with which one group distinguishes itself from another group. Such a definition could be logically related to the definition for a nation* given by the political community (Anderson 1991). Further parallels can be drawn in order to facilitate the acceptance of Hofstede's model in political sciences, as this model has been used in a number of political studies relating to the economic performance of countries (Franke et al. 1991), cultural individualism concerning macro- and micro-economics (Gouveia & Ros 2000) and corruption (Husted 1999, Seleim & Bonti 2009).

The Model

The majority of current measurement systems focus on the *political culture* of communities, trying to evaluate the type and level of political participation, attitudes towards politics, and towards power itself (Almond & Verba, 1989), but some concerns have been raised regarding the comprehensiveness of the results, suggesting that some responses on the affinity to specific political values could be more of a lip service rather than true feelings (Schubert 2015). To address this issue, Hofstede's method provides an approach concentrated on wider social aspects—work and private life—which can help address biases. At the same time, the simplicity of Hofstede's questionnaire—30 items including demographics—makes it easy to apply, analyze and understand as a whole.

Methodology

We use the Freedom in the World Index (2018) and Hofstede's Cultural Dimensions (2019, 2015) databases as sources for the analysis. Both run on a scale from 0-100. Freedom in the World (2018) data was retrieved from the Freedom House webpage, and Hofstede's Cultural values were retrieved from the dimension data matrix (2015), which were then complemented with data from Hofstede's webpage in order to include as many countries with complete data as possible from hofstede-insights.com and geerthofstede.com. The sample size consisted of 77 countries, corresponding to all countries for which

complete data on cultural values were found. This represents roughly a third of all countries (210) in the FIW index.

For analysis, we created a linear regression equation model to describe the relationship between democracy and culture. The model attempts to predict FIW total scores from the six dimensions of Hofstede. Basic descriptive statistics present the prowess and problems of the model, and plot analysis helps with the result's interpretation. Second, an identification of outliers was performed by taking the most significant scores proportional to the deviation from the prediction and inversely proportional to the prediction in order to identify the countries with less democratic cultures, as they represent the main interest of this analysis. Following an inspection of the outliers and their cultural neighbors, some suggestions and points of interest were generated. Finally, a simple correlation between items from the two frameworks was made, aiming to provide a more detailed analysis of the relations between *cultural values* and *democratic elements*.

Regional group*	#	% of the regional group	Development of country**	the #	
Western European			Developed	35	
& Others	23	82			
Eastern European	15	65	Developing	38	
Asia & Pacific	19	35	Transition	4	
Latin America 6					
Caribbean	11	33	*Based on UN regional g	roups	
Africa 9		17	**According to the UN WESP report		
Total	77				

Table 1. Sample Characteristics

Results and Discussion

As observed in Table 1, the group Western European & Others has the highest (82%) of representation. The countries in this group also correspond to *Western democratic* systems and are the most developed economically (35).

Democracy and National Culture - Overall Statistical Analysis

Linear regression model. Dependent Variable: Overall Score (Freedom House, 2018). Independent variables: Hofstede Cultural Dimensions

Summary	R ² =.50	SE=1.89	Sig<.00
Coefficients	В		
Constant	47.68	17.48	
PDI	39	.15	.00
IDV	.33	.13	.01
MAS	15	.11	.01
UAI	.25	.10	.18
LTO	.27	.10	.01
IND	.28	.11	.01

Table 2. Model Summary ANOVA & Coefficients

The model summary (Table 2) shows that predicted democratic score is accurate to a 50 percent, which is considered very high. Significance values give validity to the idea of the whole Hofstede's culture construct is needed instead of only one or two dimensions. However, the standard error (1.89) is quite high. This will make more sense in the residual plot, and is a critical point of this paper.





Source: The author

The residual plot of triangular shape in Figure 1 gives some meaningful insights: First, there is no distinctive tendency—to positive or negative—in the *error* terms. Second, there is heteroscedasticity (Breusch-Pagan Test p=.02), which is common in cross-sectional studies. The lower the predicted value, the higher the spread in the *error* terms. Although this situation reduces significantly the accuracy in the model, it is a clue. The lower the predicted value, the more the real-world values differ from it. This could mean that even if a culture is to have a predicted low democracy score, actual values differ the most. Such interpretation gives a positive outlook on what can be made to achieve a more democratic system. There are significant possibilities in transitioning to a more democratic system (liberalization), independently of the national culture. However, a number of issues could stem from such a process as well. Culture does matter, and many cultures are not aligned with the pursued democratic values, making democracy unstable and democratic transformation harder (Park & Shin 2006). These results are in line with the concept of countries with democratic political culture (Dahl 2008). But, how to address the problems from this mismatch with culture?

One option is to change the standards associated with democracy. Democracy standards and perception change with time. In the future, a different standard or range of standards could be accepted. Ethnic, religious, autocratic and other types of systems could become part of a broader way of thinking about democracy in the general imaginary. States could gain more power or a *laissez-faire* approach could become a new standard. Globalization or nationalist ideas could modify the understanding of democracy but predictions are difficult at this stage. Another option is changing the culture. Culture does change, albeit slowly. Moreover, in the inexorable globalization of the world, despite current backlash movements, culture may be starting to converge (Smith 1990).

The future could bring a more homogenous culture or set of values that could shape a new standard in democracy or other political systems. Another option is that the *outliers*, the best democratic representatives from culturally *not-prone-to-democracy* countries, increase their influence and
consequently influence democratic values outside of their borders. Out of the two conjectures, the second seems more plausible.

Table 3 shows the top 20 and low 10 outlier countries according to the FIW and the created model.

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Тор 20						Low 10		
#	FIW 2018	Model	#	FIW 2018	Model	#	FIW 2018	Model
1	Sweden	Netherlands	11	Portugal	Norway	1	Turkey	China
2	Norway	Sweden	12	Switzerland	Malta	2	Thailand	Singapore
3	Finland	Austria	13	Japan	Iceland	3	Iraq	Hong Kong
4	Netherlands	Belgium	14	Ireland	Finland	4	Venezuela	Bangladesh
5	Canada	Switzerland	15	Belgium	Australia	5	Egypt	Egypt
6	New Zealand	New Zealand	16	Iceland	Canada	6	Russia	Albania
7	Luxembourg	Denmark	17	Austria	Lithuania	7	Vietnam	Iraq
8	Australia	Germany	18	Germany	U.S.A.	8	Iran	Burkina Faso
9	Uruguay	United Kingdom	19	United Kingdom	France	9	China	Philippines
10	Denmark	Luxembourg	20	Estonia	Latvia	10	Saudi Arabia	Malaysia

Table 3. Top and Low Ranked FIW & Model

Bold=both sides

As can be seen, 15 countries are present in both FIW and Model columns under Top 20 in Table 3.The model is quite precise when it comes to the highest-ranking countries, as was also seen from the scatterplot. One important thing to note is the regional clusters. Countries with high democratic-culture are in regional groups, namely Europe, USA and Canada, Australia and New Zealand. Cultural or societal clusters were identified by the GLOBE Project (Grove 2005). Moreover, they are precisely those part of the UN's Western European and Others groups which are considered developed countries. As anticipated, Western democracies fit the model almost to perfection. On the other hand, the Low 10 is far less precise as expected from the residual scatterplot. Only China, Egypt, and Iraq repeat on both sides.

Outliers

This section identifies the outliers from the scatterplot as described in the methodology. There is no indepth analysis of these countries as in the opinion of the author, more extensive knowledge of the country situation, culture, and language is needed.

10									
#	Model (Top 10)	Model (Low 10)	#	Model (Top 10)	Model (Low 10)				
1	Slovakia	Egypt	6	Albania	China				
2	Cape Verde	Jordan	7	India	Turkey				
3	Ghana	Thailand	8	Uruguay	Iran				
4	Portugal	Vietnam	9	Philippines	Saudi Arabia				
5	Romania	Venezuela	10	Slovenia	Russia				

Table 4. Outliers

(Chile: 11th)

The focus of the discussion will be on the left side of Table 4 (Top 10). However, the countries on the right side (Low 10) present countries which have much room for growth in the area of democracy. Note that some of those countries find themselves in recent or not-so-recent dictatorial regimes, which plunge their values.

Neighbour's Comparison

Culture tends to be more similar between countries with historical connections. They share different bonds and have similarities in culture, which allow for drawing lines of comparison between them.

Table 5. Outliers and Cultural Neighbors							
Country	Predicted Value	Real Value (FIW)	Difference				
East Europe							
Slovakia	50.36	89	38.64				
Slovenia	74.99	93	18.01				
Ukraine	59.04	62	2.96				
Hungary	92.03	72	-20.03				
Romania	58.34	84	25.66				
Albania	46.08	68	21.92				
West Europe							
Portugal*	70.88	97	26.12				
Spain	83.12	94	10.88				
Brazil	72.53	78	5.47				
Africa							
Ghana*	50.47	83	32.53				
Cape Verde*	59.41	90	30.59				
Burkina Faso	43.94	60	16.06				
Nigeria	56.02	50	-6.02				
East Asia							
Philippines*	41.15	62	20.85				
Indonesia	51.9	64	12.10				
Malaysia	40.93	45	4.07				
Taiwan	80.37	93	12.63				
Central Asia							
India	56.15	77	20.85				
Bangladesh	48.09	45	-3.09				
Pakistan	54.47	43	-11.47				
Latin America							
Uruguay	77.75	98	20.25				
Chile	76.02	94	17.98				
Argentina	80.34	83	2.66				
Brazil	73.82	78	4.18				

Tab	ole 5. (Outliers	and	Cultura	l Nei	ghbors	
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*Outliers

Of course, neighboring countries can have different cultures because of inaccessible borders, different languages, or even religions. Similarly, faraway lands can have cultural connections, such as former colonies and present relations. It could be challenging to ascertain which countries are *cultural neighbors* but in order to present the outliers, we use physical and historical neighbors.

East Europe: Slovakia and Slovakia

Table 5 shows that despite East Europe's difficult path to democracy over the last century, countries from the region showcase above-average democratic scores. Exceptions are Ukraine (diff 2.96), with its difficult political climate, and Hungary (diff -20.03), performing much lower than expected. From the list, only Ukraine is not an EU member candidate. Slovakia, Romania, and Slovenia present a high score in the FIW even when the model indicates they should have a score below Ukraine (59.04). Albania (46.08)— cataloged as partially free, has a real score (68) significantly higher than the predicted values. The point of interest is the role of institutional constraints placed by the EU as part of accession requirements and procedures, as well as the role of local cultural values in upholding democratic values, especially in the cases when the two are not aligned (e.g. why does Hungary underperform substantially despite being part of the EU?).

Western Europe: Portugal

Portugal is an EU member with strong connections to Latin America—e.g. Spain—through its former colony Brazil that has long experienced difficulties in establishing a healthy democracy. The difference between real and predicted value for Portugal (70.88) is not as striking as for Slovakia (50.36). However, Portugal presents the highest real score and the lowest predicted score among its neighbors. Point of interest is the institutional constraints, and the effect of being part of the EU, and the impact of Latin culture on democracy.

Africa: Cape Verde and Ghana

The first African country in the FIW list is Cape Verde (90), which ranks very high followed by Ghana (83). However, in the case of Cape Verde it may be wise to underline that it is an island nation of 540,000 inhabitants, which could make the comparison with its continental, more populous and larger, counterparts less accurate. Next in the FIW are Ghana with Burkina Faso (60), as neighbors which have a comparatively high score than the predicted value (43.94), but still score relatively low on the FIW. Due to lack of cultural (complete) data on other neighbors, the nearest country to compare the model with is Nigeria, which ranks low. Nevertheless, these four countries present a similar cultural profile. Neighbors of Ghana, such as Cote d'Ivoire and Togo also rank quite low on the FIW index. Point of interest is that Ghana and to a certain extent Burkina Faso appear as an exception in the zone—the role of ECOWAS, Commonwealth of nations or the *Organization Internationale de la Francophonie*—in creating and maintaining democratic institutions.

East Asia: Philippines

South-East Asia presents a group of countries that appear as partially free on the FIW index. An exception is Taiwan, which presents a predicted value (80.37) high and a real value (93) even higher. The Philippines qualifies as an outlier according to the model even though the FIW score (62) is low compared to the top scorers. Point of interest is the sharp cultural differences between Taiwan and other SE island nations, and the cultural diversity and heritage from the colonial period in South-East Asia.

Central Asia: India

India is considered *free* by the FIW, as opposed to its neighbors. Point of interest is that democratic values exist in the densely populated, large, and diverse country.

American continent: Uruguay and Chile

Chile ranks11th on the FIW index, but is a significant outlier both in South America and Latin America. Chile is the wealthiest country in Latin-America followed by Uruguay (Sen Nag, 2018) and Uruguay tops the Prosperity Index for Latin America and the Caribbean followed by Costa Rica and Chile (Brien 2018).

	PDI	IDV	MAS	UAI	LTO	IND
A1	37**	.37**	14	.21*	.08	.33**
A2	41**	.45**	13	.16	.09	.28**
A3	45**	.49**	13	.11	.06	.28**
B1	38**	.44**	14	.18	.12	.26*
B2	39**	.40**	13	.16	.10	.31**
B3	46**	.48**	16	.16	.15	.31**
B4	47**	.49**	18	.09	.09	.34**
C1	43**	.44**	17	.10	.17	.27**
C2	61**	.58**	18	11	.16	.33**
C3	61**	.55**	23*	03	.10	.33**
D1	59**	.54**	18	02	.18	.33**
D2	35**	.30**	11	.06	02	.33**
D3	37**	.37**	16	.08	.02	.36**
D4	31**	.35**	12	.11	.11	.23*
E1	41**	.44**	14	.12	.22*	.18
E2	40**	.44**	16	.06	.13	.25*
E3	50**	.61**	13	.11	.19	.21*
F1	66**	.54**	21*	0	.13	.37**
F2	61**	.59**	20	.03	.23*	.26*
F3	53**	.52**	23*	.04	.22*	.24*
F4	52**	.49**	26*	.08	.16	.25*
G1	43**	.45**	19	.11	.28**	.20
G2	59**	.64**	17	03	.20*	.25*
G3	50**	.50**	16	.06	.25*	.29**
G4	59**	.58**	21*	10	.27**	.29**
ADD Q	.21*	12	.15	07	.12	12

Table 6. FIW & Hofstede Individual Item Parameter Correlations

** Correlation is significant at the 0.05 level.

Both countries emerged from dictatorships around the time as most of the other Latin-American countries—1980s and 90s—but have been able to maintain democratic values in a region prone to corruption scandals and populist governments. Points of interest are the strong links to Western Europe, effect of vast natural resources on governance, and generally high scores in comparison to Asia and Africa.

Dimensions

Table 6 shows the correlations and its significance between the Cultural Dimensions and the questionnaire grouped items. The correlation is performed for two reasons—for simplifying the analysis and for usefulness, as the regression model represents the model's interactions and not real data. In this section, we discuss only some of the significant correlations reported in Table 6. However, we should take the analysis with a grain of salt because societies with high power distance tend to be rank low in individualism. Question labels are grouped as following: Electoral Process (A), Political Pluralism and Participation (B), Functioning of Government (C), Freedom of Expression and Belief (D), Associational and Organizational Rights (E), Rule of Law (F), Personal Autonomy and Individual Rights (G), and Additional Discretionary Political Rights Question (ADD Q). Further explanations on each question can be found at https://freedomhouse.org/sites/default/files/2020-02/Methodology_FIW_2018_for_website.pdf

Power Distance Index (PDI)

The Power Distance Index indicates that the higher the societal tolerance toward hierarchy and differences in power without the need for justification, the more are the negative effects for: any Electoral process (A), Political pluralism and participation (B), Freedom of Expression (D) and Associational and Organizational Rights (E). Even in the case of widespread protests or challenges to the established power, the institutions including the military, which have the capability or legal power to act, could easily choose to cater the desire of their superiors. As a result, Openness, transparency, corruption (C2, C3), Rule of Law (F) and Personal Autonomy and Individual Rights (G) also correlate negatively to the PDI, as elaborated by Seleim and Bonti (2009).

Individualism versus Collectivism (IDV)

Individualism correlates positively to electoral processes. Low values relate to collectivist societies where individuals live in tightly-knit groups with close ties between people. Such societies score low in Electoral processes, Political pluralism and participation (B4). The sense of loyalty and belonging to a group—ideological, religious, ethnic—could make these societies less *law-abiding* when it comes to elections and other fundamentals of democracy. Individuals in key positions during electoral processes would tend to favor their group if there is no mechanism in place to prevent this. Thus, in order to serve the group, Corruption (C2, C3) rises, Rule of Law (F) fails and Freedom of expression (D) and Individual rights (G) decline. Associational and Organizational Rights (E) appear to be easier to establish in groups within more collectivist societies. However, the formation of groups, which have the potential to expose figures of dominance to peril, could be significantly hindered.

Indulgence versus Restraint (IND)

Electoral processes and political participation (B1, B3, B4) and the level of Indulgence are positively correlated. A society with a low score in Indulgence, which employs strict social norms, scores low on democracy. Strict societal norms could hinder the possibility of change and the notion of freedom among individuals; for example, refraining from supporting a particular leader because of opposing ideology or ideas which society at large deems as acceptable. One would expect that a more restrictive society would have more capacity to tackle corruption (C2, C3) due to its social norms (e.g. the belief that a popular religious person would not steal) but there is no correlation between strict social norms and decreased levels of corruption. Finally, Freedom of expression (D) and Social freedoms (G3, G4) appear more widely spread in societies with higher levels of Indulgence. Rule of law (F1) possibly benefits from less tacit social norms and expectations and from relying on written formal law.

Conclusion

The current dominant idea of modern democracy is based on individual freedoms and civil rights. Democratic values correspond to the societal values where modern democracy formed, or in other words, Western democracies. However, democracy, as any social system, falls under the influence of culture. This correlation could present certain issues when the concept for the desired democratic system and the values that sustain it are not fully or partially compatible with the local culture (Schubert 2015). Theoretically, changing the values underlying the dominant idea of democracy could be an answer to the issue but even if the modern international standards remain roughly unchanged, there is still room for growth for the less democracy-aligned cultures. This growth can be achieved by looking closer at their cultural neighbors rather than at democracy-aligned cultures whose values may be far from local ones. Culture has an important impact on the functioning of the democratic structure. Democracy relies on the power of individual citizens over the government structure. A society that accepts as natural its lack of influence on the high echelons of power will have difficulties maintaining a democratic system. Therefore, individual political rights and civil liberties are fundamental for the functioning of democracies.

Contribution

This paper identifies various points of interest for academics and practitioners. We hope that the included statistical tests and results will encourage the use of Hofstede's model in academic research in the political sciences as a complementary tool in analysis. It could help avoid biases when looking at political views (Schubert 2015) and provide a different approach for the analysis of political systems and citizens' cultural values. Other points of interest aimed at experts and practitioners, revolve around the idea that democratization should not be assumed as a dichotomy but as a process of liberalization which requires sustained efforts. It might be useful to look at successful democratization policies of "cultural neighbors", instead of drawing comparisons with the most developed democracies. Third, the value of institutional and productive power in democratization processes (Barnett & Duvall 2005) and in maintaining internal democratic institutions. Finally, high *Power Distance* could lead to concentration of power, increasing the possibility of corruption in different areas of the state, and to reducing individual rights, presenting significant risk to democratization. Low individualism values may lead to issues linked to ignoring specific individual or community needs and prioritizing the interest of larger population groups. High indulgence could promote political participation and pluralism, transparency, freedom of expression, independence of the judiciary, and social and economic freedom.

Limitation and Future Research

Hofstede's method does not encompass all possible factors but could serve as a useful complementary tool. It also needs to be mentioned that from the almost 200 countries in the FIW index only 77 countries could be analyzed because of lack of complete data from the cultural survey. Most of missing data comes from African and central Asian countries. Values from these counties could help get a better picture on outliers. In-depth analysis of each outlier case can only be made through specialized knowledge of the mentioned countries and regional cultures and specific political systems, and is, therefore, open to future research. The points of interest presented in the *neighbor comparison* section could be an area for future research from the cultural perspective.

References

- Acemoglu D & Robinson JA 2006. Economic origins of dictatorship and democracy. Cambridge University Press.
- Alemán E & Yeaji K 2015. The democratizing effect of education. Research & Politics, 2(4), 1-7.
- Almond GA & Verba S 1989. The civic culture: Political attitudes and democracy in five nations. SAGE.
- Anderson B 1991. Imagined communities: Reflections on the origin and spread of nationalism. London: Verso.
- Barnett M & Duvall R 2005. Power in international politics. International organization, 59(1), 39-75.
- Brien S 2018. Legatum Prosperity Index. Legatum Institute. Recuperado el 22 de 07 de 2019, de https://li.com/reports/2018-legatum-prosperity-index
- Center for Systemic Peace. sf. About Polity. Retrieved Jan 23, 2019, from http://www.systemicpeace.org/polityproject.html
- Dahl RA 2008. On democracy. New Haven: Yale university press.
- Dalton RJ, Shin DC & Jou W 2007. Popular conceptions of the meaning of democracy: Democratic understanding in unlikely places. 65th annual national conference of the Midwest Political Science Association. Chicago.
- Dalton RJ, Sin TC & Jou W 2007. Understanding democracy: Data from unlikely places. Journal of Democracy, 18(4), 142-156.
- Dewey J 1922. Democracy and education: An introduction to the philosophy of education. New York: Macmillan.
- EIU. 2018. Democracy Index 2018. Me too? The Economist intelligence Unit. Retrieved Aug 8, 2019, from http://www.eiu.com/topic/democracy-index
- Elkins Z 2000. Gradations of Democracy? Empirical Tests of Alternative Conceptualizations. American Journal of Political Science, 44(2), 293-300.
- Franke RH, Hofstede G & Bond MH 1991. Cultural roots of economic performance: A research notea. Strategic management Journal, 12(S1), 165-173.
- Freedom House 2018. Freedom in the World 2018. Retrieved Jan 18, 2019, from https://freedomhouse.org/report/methodology-freedom-world-2018
- Gastil RD 1990. The comparative survey of freedom: Experiences and suggestions. Studies in Comparative International Development, 25(1), 25-50.
- Gouveia VV & Ros M 2000. Hofstede and Schwartz s models for classifying individualism at the cultural level: their relation to macro-social and macro-economic variables. Psicothema, 12(1), 25-33.
- Grove CN 2005. Introduction to the GLOBE research project on leadership worldwide. Recuperado el 14 de 05 de 2019, de GROVEWELL LLC: www.grovewell.com/pub-GLOBE-intro.html
- Hofstede Insights. 2019. Compare countries. Retrieved May 20, 2019, from Hofstede Insights: https://www.hofstede-insights.com/product/compare-countries
- Hofstede G 1984. Culture's Consequences: International Differences in Work-Related Values (2nd ed.. Beverly Hills CA: Sage.
- Hofstede G & Hofstede GJ 2015. Dimension data matrix. Recuperado el 02 de 01 de 2019, de Geert Hofstede https://geerthofstede.com/research-and-vsm/dimension-data-matrix
- House R, Javidan M, Hanges P & Dorfman P 2002. .Understanding cultures and implicit leadership theories across the globe: an introduction to project GLOBE. Journal of world business, 37(1), 3-10.
- Huntington SP 1993. The third wave: Democratization in the late twentieth century. Oklahoma: University of Oklahoma press.
- Husted BW 1999. Wealth, culture, and corruption. Journal of International Business Studies, 30(2), 339-359.
- Kekic L 2007. The Economist Intelligence Unit's index of democracy. The Economist.

Lijphart A 1968. Typologies of Democratic Systems. Comparative Political Studies, 1(1), 3-44.

- Lindberg SI, Lindenfors P, Lührmann A, Maxwell, L. Medzihorsky J, Morgan R & Wilson MC 2018. Successful and Failed Episodes of Democratization: Conceptualization, Identification, and Description. V-Dem Working Paper, 79.
- Linz JJ & Stepan AC 1996. Toward consolidated democracies. Journal of democracy, 7(2), 14-33.
- Lipset S M 1959. Some social requisites of democracy: Economic development and political legitimacy. The American political science review, 53(1), 69-105.
- Mudde C & Kaltwasser CR 2017. Populism: a Very Short Introduction. New York: Oxford University Press.
- Offor F 2014. The Sociality of Democracy. Journal of Power, Politics & Governance, 2(2), 55-73.
- Park C-M. & Shin DC 2006. Do Asian Values Deter Popular Support for Democracy in South Korea? Asian Survey, 46(3), 341-361.
- Przeworski A, Alvarez R, Alvarez M & Cheibub J 2000. Democracy and development: Political institutions and well-being in the world, 1950-1990 Vol. 3. Cambridge University Press.
- Schubert S 2015. Unity, Plurality and/or Hybridity? Assessing the Global Pattern of Political Cultures. World Values Research, 8(4), 123-150.
- Schwertheim H 2017. Measuring Public Support for Democracy. Stockholm: International Institute for Democracy and Electoral Assistance.
- Seleim A & Bonti N 2009. The relationship between culture and corruption: A cross-national study. Journal of Intellectual Capital, 10(1), 165-184.
- Sen Nag O 2018. The Richest countries In South America. Retrieved Jul 28, 2019 from https://www.worldatlas.com/articles/the-richest-countries-in-south-america.html
- Smith AD 1990. Towards a global culture. Theory, Culture & Society, 7(2-3), 171–191.
- Stewart, W.S. 1988. Understanding Politics: The Cultures of Societies and the Structures of Governments. Chandler Sharp Publishers.
- Talisse RB 2011. A farewell to Deweyan democracy. Political Studies, 59(3), 509-526.
- The Economist Intelligence Unit. 2013. Democracy index 2012: Democracy at a standstill. London: The Economist.
- Treisman D 2020. Economic Development and Democracy: Predispositions and Triggers. Annual Review of Political Science, 23, 241-257.
- Trompenaars F 1993. Riding the waves of culture: Understanding cultural diversity in business. London: The Economist Books.
- Waldner D & Lust E 2018. Unwelcome change: Coming to terms with democratic backsliding. Annual Review of Political Science(21), 93-113.
- Wike R, Simmons K, Stokes B & Fetterolf J. October 18, 2017. Globally, Broad Support for Representative and Direct Democracy. But many also endorse nondemocratic alternatives. Retrieved Jan 15, 2019, from Pew Research Center: http://www.pewglobal.org/2017/10/16/globally-broad-support-forrepresentative-and-direct-democracy

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BOOK REVIEW

The book

Foundation of Mixed Methods Research Teddlie C & Tashakkori A 2009 Thousand Oaks: Sage

Reviewed by

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Mixing qualitative (QUAL) and quantitative (QUAN) research methods challenges researchers in the Social Sciences domain. Scholars need to address proper ways of mixing methods for research quality and academic rigor. In this context, the work of Teddlie and Tashakkori is a recommended book for any researcher who intends to use mixed methods (MM) approach. The book is divided into two sections. In the first section, the authors present five chapters relating to the fundamentals of the 'third methodological movement' (i.e. mixing QUAN and QUAL approaches). This section covers the approach, MM fundamentals, MM roots before and after the 20th century, and the paradigm issues. In the second section, the authors add six chapters, covering specific features for preparing for a MM research project, research design, sampling strategies, data collection procedures, analysis and inference processes.

Specifically, chapter 1 introduces the main differences among the QUAL, QUAN and MM approaches, the different backgrounds, research traditions and how the three approaches can coexist peacefully. Chapter 2 presents the MM basic elements, its terms and definitions, as well as the MM utility. Chapter 3 covers the MM historical path—from Antiquity, Middle Ages, Scientific Revolution to the 19th and 20th centuries—underlining the emergence of Human Sciences and the inductive-deductive research cycle that is commonly used in different ways. Chapter 4 explores the four landmarks in the 20th century, named the Traditional period (referring to Positivism, from 1900 to World War II), the Postpositivist area (from end of World War II to 1970), the Diversification and advances in methodologies in Human Sciences period (from 1970 to 1990), and the Institutionalization of MM as a third methodological community (from 1990 to present). Chapter 5 brings the methodological continua, contemporary points of view, and discussions of recent debates concerning MM.

The second section of the book starts with chapter 6, where the readers find a four-step model for generating research questions in MM approach, followed by a 12-step sequence for literature review and guidance for generating research objectives in the more complex and hierarchical nature of MM research questions. Chapter 7 provides the guidance for selecting and adapting a MM research design to an existing research project. In doing so, the authors present the five families of design typologies (methods-strands matrix), dimensions, terminology and notational system for MM. This chapter ends with practical orientations relating to selecting and adapting appropriate design in a seven-step process. Chapter 8 covers the MM sampling strategies and addresses probability and purposive samplings. A typology of MM sampling strategies is also provided with examples. Chapter 9 shows the preparatory steps before collecting data such as ethical issues, conceptualization of different type of data collection procedures, pilot studies, engagement in several activities to ensure data collection quality. Finally the authors introduce the 'Matrix of Data Collection Strategies for MM research'.

Chapter 10 concentrates on MM data-gathering strategies supported by the matrix presented in chapter 9. The MM data collection comprises both QUAL and QUAN data using more than one (and diversified) data collection strategies. Examples on how to follow the matrix are presented to cover the innumerous possibilities of mixing data sources and collections. Chapter 11 addresses QUAL and QUAN data analyses and their specific features in the MM approach. This chapter also covers the five MM research designs. The sequential mixed data analyses are addressed in two ways: QUAL > QUAN and QUAN > QUAL. The new types of analytical techniques are addressed to present the transferability or interchangeability of QUAL/QUAN data such as fused data analysis, and inherently mixed data analysis, among others. Lastly, chapter 12 is dedicated to discussing the quality standards of inferences in MM research by addressing validity, the concepts of inference quality and inference transferability. After the discussion, an integrative framework of inference quality and transferability is presented and explored. The book presents an epilogue regarding politics, challenges and prospects of MM research, a glossary, and consulted references.

In summary, this book makes an outstanding contribution to the MM research domain, and is recommended to graduate students and earlier researchers in the Social Sciences as well as Behavioral Sciences.

Reviewer



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