

Examining the link between social capital, knowledge quality, SMEs innovativeness and performance

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Abstract

The purpose of this study was to examine the relationship between some elements of social capital, knowledge quality, and Small and Medium Enterprises (SMEs)' innovativeness and export performance. Data were collected from owners/managers of SME exporters in Ghana. Structural Equation Modeling was used for the data analysis. The results indicate that the elements of social capital facilitate access to quality knowledge which consequently improves SMEs' innovativeness. The study also shows that SMEs' innovativeness affects their export performance.

Keywords

Ghana, Innovation, knowledge management, knowledge quality, SMEs performance, social capital

Introduction

In recent times, many governments in developing economies have been empowering their Small and Medium Enterprises (SMEs), to improve their performance through policies like export promotions. Some of these programs have yielded good outcomes (Njinyah, 2018), however, with the increasing globalization and how competitive the international market has become, quality knowledge is critical not only for the SMEs survival but also, their innovativeness and performance (Alavi and Leidner, 2001; Yoo et al., 2011).

Quality knowledge helps firms do work well, create new and relevant products, and increase sales (Ganguly et al., 2019; Yoo et al., 2011). That is, quality knowledge can enable SMEs to be innovative and improve their performances. Although many studies have shown that knowledge management impact positively on business performance and innovation (Choi et al., 2020; Lima and Carpinetti, 2012; López-Nicolás and Meroño-Cerdán,

2011; Noruzy et al., 2013; Valdez-Juárez et al., 2016; Zaim et al., 2019), limited studies have emphasized the quality of the knowledge in question (Ganguly et al., 2019; Yoo et al., 2011). However, studies have shown that the effective use of knowledge, to a greater extent depends on its quality (Rao and Osei-Bryson, 2007). Thus, the role of quality knowledge in SMEs' innovativeness and performance is examined.

Also, some studies (Suárez-Ortega et al., 2016) have shown that since developing economies have weak institutional environments, SMEs exporters operating in these economies should acquire new knowledge to survive and improve their performance. The question that arises from this finding is, how can SMEs acquire quality knowledge from their foreign partners? To address this question, we

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draw on the social capital theory (Coleman, 1990), which posits that individuals, firms, and communities can rely on their social relations and social structures to acquire essential and limited resources.

Some studies have shown that localized networks help SMEs to assemble complementary resources and capabilities and benefit from knowledge-based activities in geographic regions (Davenport, 2005). Furthermore, there is a plethora of evidence that suggests that social capital promotes innovations in firms (Akhavan and Hosseini, 2016; Tsai and Ghoshal, 1998). Also, a review of the existing literature shows that although, a number of studies have been conducted on social capital, knowledge management, innovation, and performance, there is a paucity of studies linking social capital, knowledge quality, innovation and firm performance (Ganguly et al., 2019; Yoo et al., 2011), especially within SME exporters' context. Therefore, to build on the extant literature, this current study examines the relationship between social capital, knowledge quality, innovativeness and performance within the context of SME exporters in Ghana.

This study makes some contributions. Firstly, it identifies some relevant quality knowledge (contextual knowledge quality and actionable knowledge quality) required to improve SME exporters' innovativeness and performance. Secondly, this study shows the connection between social capital, knowledge quality, innovativeness and performance within SME exporters' context. By these findings, SME exporters especially those operating in developing economies can develop strategies to acquire quality knowledge from their external partners.

The rest of the paper is organized as follows; theoretical background and literature review, hypotheses development, methodology, results and analysis, discussion, conclusions and implications, and limitations and direction for future research.

Theoretical background

Social capital

The social capital theory explains how social structure and social relations facilitate access to resources (Coleman, 1990). It is the resource that lies across the social relations of an individual (Adler and Kwon, 2002). Social capital is associated with benefits such as access to information, access to influence over others and a sense of solidarity among group members (Adler and Kwon, 2002). Social capital could be defined either through explaining its sources and effects or through the nature (external, internal or both) of the social relations (Adler and Kwon, 2002). This study considers social capital as the actual and potential cumulative resources located within social structures and social relations and could be invoked through networks of relationships, social interactions and shared systems.

Some scholars have considered social capital to consist of two dimensions – structural and relational (Chou, 2006), while other researchers have added the cognitive dimension to the mix (Nahapiet and Ghoshal, 1998). The structural dimension represents the pattern of the social connections within a network. The relational dimension represents the nature of the relationship (i.e., friendship, respect). This dimension explains the type of relationship between individuals given that it exists. Elements of the relational dimensions include trust, identification, and obligation (Nahapiet and Ghoshal, 1998). The cognitive dimension signifies the degree to which people in a network share the same understanding (Nahapiet and Ghoshal, 1998). Drawing inspiration from this theory, we examine how social interactions, business networks, and shared system can help SMEs to obtain quality knowledge from their external partners.

Knowledge quality

Knowledge is vital for companies to remain competitive in their industries. However, the quantity of knowledge may not always enhance organizational performance (Belenzon and Berkovitz, 2010). In addition to quantity, the quality of knowledge plays a vital role in the success of organizations (Alavi and Leidner, 2001; Nonaka and Teece, 2001). Therefore, conceptualizing knowledge quality is of importance. Data, information, and knowledge can interrelate with each other in a hierarchical manner where knowledge is located at the apex of the hierarchy. In other words, data, when structured appropriately, is transformed into information which in turn leads to knowledge (Brodie and Brodie, 2009). Thus, knowledge quality can be measured at least to a certain extent by measuring data quality and information quality. Indeed, several studies use these measures interchangeably (Halawi and McCarthy, 2007; Tongchuay and Praneetpolgrang, 2008). However, the measure of information or data quality cannot completely replace the measure of knowledge quality. Even though they lie within the same hierarchy, their function and essence differ. Furthermore, in an organizational setting, a separate measure for knowledge quality is feasible. Therefore, a need to measure knowledge quality arises.

Several studies conceptualized knowledge quality from an information systems perspective. For instance, Kulkarni and colleagues (2007) defined 'knowledge content quality' to be measured based on its usefulness, and presentation style, quality adopted from Rai et al. (2002). A review done by Waheed and Kaur (2016) conceptualized knowledge quality to consist of six factors – adaptability, applicability, expandability, innovativeness, justifiability and whether the knowledge is true. Furthermore, they added that knowledge quality depends on the data quality and the information quality dimensions. Durcikova and Gray

(2009) defined knowledge quality as the degree to which the knowledge accurately serves an individual's needs.

Some studies conceptualized knowledge quality in connection to organizational innovativeness (Ganguly et al., 2019; Yoo et al., 2011). Initially, Soo et al. (2004) conceptualized knowledge quality to consist of frequency, innovativeness, and usability. Frequency denotes the rate of acquiring knowledge. Innovativeness measures the extent to which the knowledge is original, while usability denotes the degree to which the knowledge applied to their task. This measure was adopted later by Chan and colleagues (2008). This conceptualization, however, combines quality and quantity into a single construct. Therefore, it is unclear whether an increase in quality or quantity causes a change in the construct. For instance, based on this measure, the study by Soo and colleagues (2004) found that informal networks leads to the acquisition of quality knowledge. However, it is unclear whether informal networks led to an increment in the frequency of knowledge acquisition or increment in actual quality. As the current study is concerned purely about the quality of the received knowledge, it adopted the conceptualization of knowledge quality by Yoo et al. (2011).

Yoo et al. (2011) conceptualized knowledge quality based on the sense-making theory and identified three types of knowledge quality; intrinsic knowledge quality, contextual knowledge quality and actionable knowledge quality. Sense-making theory broadly revolves around applying one's understanding to a specific situation (Taylor and Van Every, 1999). This study identifies two types of quality knowledge based on, specific situations, and actions. That is perceived contextual knowledge quality (PCKQ) and perceived actionable knowledge quality (PAKQ). These two types are relevant to the SMEs export business. Knowledge is dependent upon the context (Nonaka and Takeuchi, 1995) and PCKQ reflects the degree to which the knowledge can be fit within the context (Yoo et al., 2011). Actionable knowledge quality refers to the extent to 'which knowledge is expandable, adaptable, or easily applied to tasks' (Yoo et al., 2011, p. 331). The mere fact that knowledge is accurate and be considered contextual is not enough, it should be actionable to show its utility and profitability (Davenport and Prusak, 1998). Therefore, knowledge quality also depends on the utility of knowledge. It is the degree to which the knowledge applies to a task (Yoo et al., 2011).

Hypotheses development

Social interactions and knowledge quality. Innovation stems due to consistent interaction between firms and external actors such as the customers, research institutes, other firms (Alguezaui and Filieri, 2010). Social capital plays a vital role in companies' role in creating innovations and increasing firm performance. This innovation is fundamentally

driven through the knowledge sharing process (Alguezaui and Filieri, 2010). For instance, a customer or a lead user may contribute to the firm by providing information about market needs, while the suppliers may provide information to reduce the cost of operations. However, this flow of information is dependent upon the relationship which is maintained with these stakeholders. Furthermore, Adler and Kwon (2002) state the social capital improves information quality, timeliness, and relevance. Therefore, social capital plays a vital role in increasing knowledge flow between the firm and other stakeholders. Several studies have shown that social capital influences the knowledge flow positively (Soo et al., 2004).

However, the current study is concerned if social capital could influence the quality of knowledge obtained. One may argue that social capital will increase the frequency of quality knowledge as it increases the knowledge quantity. However, we are concerned about the perceived cumulative quality of knowledge rather than the frequency of quality knowledge. Some studies, for instance, have shown that social interaction increases knowledge sharing frequency and intensity (Chiu et al., 2006). Consequently, this translates to increment in knowledge quantity. However, it does not always translate to increment in quality knowledge. Our research is conducted to assess knowledge sharing between individuals and their foreign business contacts. Typically, individuals foster foreign business contacts from their related industries. Furthermore, these foreign contacts may have access to information that may not be prevalent within the local industry. Thus, constant interaction with these individuals leads to an increase in knowledge quality. Several empirical studies (Chang and Chuang, 2011; Chiu et al., 2006) have shown that social interactions increase the quality of knowledge sharing in virtual platforms. Other than this, social interaction can represent the strength of the tie between the individuals. Even though weak ties invite explicit knowledge (Hansen, 1999), tacit knowledge can only be transferred through strong ties. Furthermore, strong ties are willing to expend more energy to ensure that knowledge is transferred clearly (Levin and Cross, 2004). Based on these trends in the literature, it is hypothesized that;

- H1:** Social interactions between SME owner/managers have a positive effect on the acquisition of perceived contextual quality knowledge
- H2:** Social interactions between SME owner/managers have a positive effect on the acquisition of perceived actionable quality knowledge

Business networks and knowledge quality. Networking and networks are key elements of social capital (Coleman, 1990; Nahapiet and Ghoshal, 1998). The strengthening

of network ties to some extent determines the kind of information that people access. Business networks ‘refer to firms that use tie sources of knowledge with other entities, either home or host’ (Suárez-Ortega et al., 2016, p. 25). This network may include actors such as distributors, consultants, and competitors. Some studies have shown that home business networks help SMEs acquire knowledge to manage disparity in institutional environments and learn about the market and institutional local conditions (Chetty and Campbell-Hunt, 2003; Cuervo-Cazurra, 2011). Following these findings, it is argued that business networks between SMEs and the partners can help them access quality knowledge which can help them to become innovative and improve their performance. It can thus be hypothesized that;

H3: Business networks have a positive effect on the acquisition of perceived contextual quality knowledge

H4: Business networks have a positive effect on the acquisition of perceived actionable quality knowledge

Shared system and knowledge quality. According to Coleman (1990), social systems can enable individuals and communities to access resources. In line with this, we argue that a shared system can help SMEs to access quality actionable and contextual from their foreign partners. The study operationalized a shared system as a ‘shared information system among a group of companies’ (Gunasekaran and Sandhu, 2010, p. 773). Some studies have shown that interorganizational system facilitates the flow of information between organizations and helps suppliers to forecast client needs and meet products specifications. Interorganizational system promotes better management of buyer-supplier relationships and task sharing (Nelson and Shaw, 2003). From this, we argue that social capital can facilitate inter-organizational systems and consequently facilitate access to quality knowledge.

H5: Shared system has a positive effect on perceived contextual knowledge quality

H6: Shared system has a positive effect on the acquisition of perceived actionable quality knowledge

Knowledge quality, SMEs innovativeness, and Performance

Firm innovativeness has been defined as ‘the notion of openness to new ideas as an aspect of a firm’s culture’ (Hurley and Hult, 1998, p. 44). Similarly, Porter (1990, p. 45) defined it as the creation of ‘competitive advantage by perceiving or discovering new and better ways of competing in industry and bringing them to market’. From these two definitions, it can be said that firm innovativeness involves

acceptance of new ideas, the development of new products and the use of new processes. Firms like SMEs require quality knowledge to be innovative and improve their performance (Ganguly et al., 2019; Yoo et al., 2011). Soo et al. (2004) found that the acquisition of quality knowledge translated to innovative performance. However, the conceptualization of knowledge quality incorporated both the quality and quantity of knowledge. Thus, it can be said if the quality or quantity of knowledge led to innovative performance. Furthermore, Yoo (2014) argues that individuals are more likely to partake in innovative behavior if they perceive their knowledge to be actionable and contextual.

On a similar note, Han et al. (2018) found that the acquisition of technology in the company led to innovative performance only when there was a knowledge overlap. In other words, it could be said that acquisition led to an increase in innovative performance only when the knowledge was perceived to be actionable and contextual. Perceived contextual knowledge quality is about what individuals know about a context, and it is personal to an actor (McCarthy, 1993). It is created and emerged from situations and it is a key element of practice (Applegarth et al., 2013). Consequently, it is important to achieving a specific goal. The acquisition of contextual knowledge can help individuals to make consistent decisions (Karsenty and Brézillon, 1995). Thus, the acquisition of quality contextual knowledge can enable SMEs to create new products and services that are consistent with the needs and wants of the foreign market. Similarly, actionable knowledge quality enables teams to easily adapt to change, and easily apply knowledge (Yoo et al., 2011). In this view, it can be concluded that perceived contextual knowledge quality and perceived actionable knowledge quality facilitate innovations in SMEs. This will consequently help SMEs to increase their sales, and profitability and expand their market. This argument is based on some earlier studies that have shown the impact of innovation on firm performance (Noruzy et al., 2013; Valdez-Juárez et al., 2016). Based on this we present the following hypothesizes;

H7: Perceived contextual knowledge quality has a positive effect on SMEs’ innovativeness

H8: Perceived actionable quality knowledge has a positive effect on SMEs’ innovativeness

H9: SMEs innovativeness has a positive effect on their performance

All the hypotheses are summarized in Figure 1 in Online Appendix 5.

Methodology

Sample and data collection

Data were collected over a period of two months from export companies in Ghana. A database of 560 non-traditional

Table 1. Background information.

Variables	Frequency	Percent
Firm age		
1–5 Years	39	15.17
6–10 Years	82	31.91
11–15 Years	57	22.18
16–20 Years	59	22.96
>21 Years	20	7.78
How do you classify this firm		
Small	82	31.91
Medium	122	47.47
Large	53	20.62
Export experience		
1–5 Years	53	20.62
6–10 Years	102	39.69
11–15 Years	46	17.90
16–20 Years	40	15.56
>21 Years	16	6.23

exporters was acquired from the Ghana Export Promotion Authority. A total of 430 of these exporters had offices in Accra. The authors recruited the services of an Accra-based marketing research company to collect data from these exporters. A total of 350 paper-based questionnaires were distributed to these companies. After several follow-ups 312 of the questionnaires were returned. Of those returned questionnaires 55 were not usable for data analysis since most portions of the questionnaire were not filled. In all, 257 responses were used for data analysis. Table 1 presents the demographic information of all the respondents.

Measurement instrument

Items for the current research were adopted from previous literature as suggested by Straub et al. (2004). Items for Social interactions were adopted from Nahapiet and Ghoshal (1998), while those for business networks were derived from Human and Naudé (2009). Shared system was measured with four items adapted based on Gunasekaran and Sandhu's (2010) definition. Perceived contextual knowledge quality and Perceived actionable knowledge quality were also measured with items derived from Yoo et al. (2011). Items used to measure Innovativeness were derived from Grover and Goslar (1993) while those for Firm Performance were also derived from Zhou (2007) and Njinyah (2018). All items were measured using a five-point Likert scale anchored between strongly disagree (1) and strongly agree (5). The constructs and the items used to measure them are presented in Online Appendix 1.

Analysis and results

The proposed model was tested using the Partial Least Square approach to structural equation modeling (PLS-SEM) on WarPLS 6. The study adopts the two-step

approach proposed by Chin (1998) for analyzing SEM models. First, the measurement model is assessed for reliability and validity. Then after, the significance of the relationships between the variables in the proposed model is assessed. PLS-SEM was considered suitable for this study because it is less restrictive on residual distribution assumptions than other analysis models (Chin et al., 2003). Also, the aim of the study was to predict some target variables rather than confirmatory analysis (Henseler et al., 2009).

Measurement model assessment

To evaluate the adequacy of the measurement model, the reliability and validity of the model were assessed. The assessment of reliability was based on Cronbach's alpha and composite reliability. Based on the requirements proposed by Henseler et al. (2016) and the results presented in Table 2 in Online Appendix 2, we conclude that the measurement model is reliable since the reliability statistics for all constructs are greater than the recommended threshold of 0.7. Evidence of convergent validity can be seen in Table 2 in Online Appendix 2 since AVE values for all constructs are compellingly higher than the 0.5 threshold suggested by Hair et al. (2019).

As suggested by Hair et al. (2012), the assessment of discriminant validity was based on item loadings and cross-loadings and the Fornell-Larcker criterion. Table 2 shows that items load higher on their respective constructs than all other constructs. Also, evidence from Table 3 in Online Appendix 3 suggests that the Fornell-Larcker criterion has been met. It can be seen from this Table that the square root of the AVE of each construct (shown on the diagonal of the correlation matrix) is greater than the correlation with other constructs. Based on these measures, we conclude that the measurement model displays sufficient proof of reliability, convergent validity, and discriminant validity.

Structural model assessment

The detailed results of the structural model assessment are presented in Table 4 in Online Appendix 4. The results show that social interactions ties (SI) positively affect perceived contextual knowledge quality (PCKQ) and perceived actionable knowledge quality (PAKQ). Similarly, business networks (BN) positively affect perceived contextual knowledge quality and perceived actionable knowledge quality, with the effect on perceived actionable knowledge quality being stronger. Shared system (SS) was also found to have significant effect on both perceived contextual knowledge quality and perceived actionable knowledge quality. Perceived contextual knowledge quality was found to have a significant effect on innovativeness (INN) however, the effect of perceived actionable knowledge quality on Innovativeness was found to be stronger.

Innovativeness, in turn, was found to be a significant predictor of performance. From the results all the hypotheses are supported.

Discussion, conclusion, and implications

The findings of this study have shown that social capital facilitates access to resources as posited by Coleman (1990). The elements of social capital; social interactions, business networks, and shared systems, do not only facilitate access to knowledge (Nahapiet and Ghoshal, 1998) but quality knowledge. This study has built on the existing literature by showing the connection between social capital, knowledge quality, innovation, and firm performance.

The findings from the study show that social interactions between SME owners/managers and their partners facilitate the acquisition of knowledge relevant to the operations of the SMEs. Actual knowledge relevant to the context of the SMEs' operations is accessed through social interactions. Additionally, social interactions help owners/managers of SMEs to access knowledge that can be utilized for the profitability of the SMEs. Our findings are parallel to Nahapiet and Ghoshal (1998). Furthermore, the results show that building networks with external partners foster structures and relations which the SMEs owners/managers rely on to access quality contextual and actionable knowledge. The SMEs owners/managers build and foster business networks building good personal relationships with foreign business contacts and attending to their needs promptly. Also, by sharing a common information system, SMEs owners/managers can obtain quality contextual and actionable quality knowledge from their external partners. Inter-organizational system does not only facilitate information flow (Nelson and Shaw, 2003) but also access to quality contextual and actionable knowledge. Consistent with the extant literature (Yoo et al., 2011), we noticed that knowledge quality improves innovativeness in SMEs in Ghana. Through the quality contextual and actionable knowledge obtained from foreign partners, SMEs can experiment with alternative ways to carry out their works, adopt new process and modify their existing products. This study has shown that the innovativeness of SMEs improves their performance supporting the existing literature (Noruzy et al., 2013; Valdez-Juárez et al., 2016). It facilitates access to a new market, increases sales and profitability. The strength of the path coefficients provides useful information about the relative importance of each of the elements of social capital that facilitate access to quality knowledge from external partners. They also show how quality contextual and actionable knowledge explain the variance in SMEs' innovativeness. Again, the path coefficients explain offer useful insights into how innovativeness of SMEs explain variance in their performance.

The findings imply that within the context of SME exports in developing economies, shared system has the

highest load on access to perceived actionable knowledge while social interactions have the highest loading on access to perceived contextual knowledge quality. This means that, although elements of social capital; social interactions, shared business networks, and shared systems facilitate access to quality external knowledge there is variation in their strength in terms of the type of quality knowledge accessed. Furthermore, our findings imply that perceived actionable knowledge quality impacts more on SMEs' innovativeness than perceived contextual knowledge quality at least within SME exporters context. The quality of knowledge obtained from external partners can be evaluated based on the context of the knowledge and its usefulness to the operations of the firm. Again, the results imply the association between SMEs' innovativeness and their performance.

Practically, the results imply the need for owners/managers of SMEs to build strong and strategic networks with their external partners, by building personal networks and solving problems constructively with their foreign business contacts. Also, SMEs owners/managers must consider the context and usefulness of the knowledge they obtain from external partners if they want to be innovative. For example, the knowledge obtained should be relevant to their core task and operations.

Limitations and future directions

There are many elements of social capital (Coleman, 1990; Nahapiet and Ghoshal, 1998), however, this study tested three elements. Therefore, future studies should consider how other elements of social capital can help explain access to quality knowledge from external partners. Also, there can be many types of knowledge quality (Yoo et al., 2011), however, we employ two of these in this study. Thus, future studies should explore and apply additional types to explain SMEs' innovativeness.

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Supplemental material

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