Regional and Business Studies (2023) Vol 15 No 2, 37-58
Hungarian University of Agriculture and Life Sciences Kaposvár Campus
Kaposvár
https://doi.org/10.33568/rbs.4420

Customer Employee Exchange and Firm Innovative Behavior Among SMEs in Ghana: The Mediating Role of Customer Knowledge Management

Diyawu Rahman ADAM[1, 2], Sadick Alhaji HUSSEINI[3]
[1]Doctoral School in Management and Organizational Sciences, Hungarian University of Agriculture and Life Sciences, Kaposvár Campus, 7400 Kaposvár, Guba Sándor u. 40. Hungary
[2]Garden City University College,Department of Managerial Sciences, P.O Box KS 12775 Kumasi, Ghana
[3]Corvinus University of Budapest, 1093 Budapest, Fővám tér 8. Hungary

ABSTRACT

The study sought to examine the relationship between customer-employee exchange and firm innovative behaviour (FIB). The mediation effect of customer knowledge management in the relationship between customer-employee exchange and FIB was determined. Quantitative data was collected using a structured questionnaire. We sampled 247 respondents from Small and Medium Enterprises (SMEs) in Ghana using the simple random sampling technique. The partial least squares structural equation modelling (PLS-SEM) was assessed using the Smart-PLS. The findings of the study suggest that the variables representing customer-employee exchange (solidarity, harmonization, and information exchange) have had an important effect on FIB. Moreover, customer knowledge management is found to mediate relationships between customer-employee exchange and firm innovative behaviour. The study recommends that due to their limited resources compared to larger companies' new ways of interactions between SMEs and customers should be introduced and enhanced as that will help the firms to improve their innovative behaviour.
Keywords: firm innovative behaviour, customer employee exchange, solidarity, harmonization, information exchange
JEL codes:M31, Z33

INTRODUCTION

Firm innovative behaviour (FIB) serves as the building blocks for organizational innovation and is crucial to corporate success, particularly for service-based businesses. Although these creative actions are taken on an individual basis, employees nevertheless need to interact frequently with clients. Customer-employee exchange (CEX) has an impact on staff members' innovative behaviour in the service industry (*Li & Hsu,* 2016). Innovation is essential for any business's success in creating, disseminating, and implementing new ideas that can improve organizational performance and result in positive organizational performance (*Imran & Akhtar*, 2022).

Lee and Trimi (2018) contend that innovation is vital for any business organization to survive and achieve its long-term goals. It is generally seen as one of the most crucial factors that help firms to attain long-term success (*Hall et al.*, 2005). Given that macroeconomic uncertainties could derail the success of firms in their respective industries, *Guan et al.* (2021) indicate that those uncertainties encourage innovative activities. Exploring the determinants of firm innovation is vital, as it plays an important role in increasing product competitiveness and promoting economic growth.

Furthermore, although the impact of customer-employee exchange on firm performance, including elements of customer satisfaction, loyalty, and financial outcomes, has been extensively studied in the literature, there is still a sizable research gap in understanding the complex relationship between customer-employee exchange and firm innovative behavior, particularly in the context of Small and Medium Enterprises (SMEs) in Ghana. Additionally, customer knowledge management has the potential mediating function in this relationship and has relatively received little attention. There is a chance for a thorough examination and empirical analysis given this research gap. In Ghana, and other emerging economies, SMEs are recognized for having resource limitations, which may influence the dynamics of the relationships between customers and employees and their consequences on innovation (*Ahinful et al.*, 2023; *Adom et al.,* 2022). Therefore, it is important to understand how employee-customer interaction affects innovation in that setting, taking knowledge acquisition into consideration.

This study believes that firms' innovative behavior can be achieved if they have the right interactive atmosphere with their customers. Thus customer-employee exchange is said to have an influence on firm innovative behavior. Exploring the determinants of firm innovative behaviour is important in increasing product competitiveness as well as promoting economic growth (*Liu & Li,* 2020). The objective of the study is therefore to determine the effect of customer-employee exchange (solidarity, harmonization, and information exchange) on firm innovative behavior. Furthermore, the study seeks to understand the mediating role of customer knowledge management on the relationship between customer-employee exchange and firm innovative behavior. It is believed that through learning and innovation processes, firms can achieve competitive advantages, which ultimately lead to the enhancement of firm performance.

Customer-Employee Exchange

One of the constructs under consideration in this study is the customer-employee exchange. It represents the interactions that ensue between customers and employees during or after service delivery. Customer-employee interactions also occur when customers communicate with a firm to obtain more information about the product/service (*Bowman & Narayandas,* 2001). It serves as a crucial component of services (*Li & Hsu*, 2016). It improves consumers' service interactions, which would raise their level of happiness (*Namasivayam & Mattila,* 2007). In this way, it can be argued that customer and employee interactions are vital for business progress. Besides, customers are becoming more involved in services and working

with staff, yet their interactions with employees differ from those with their superiors and other employees (*Solnet,* 2007). Employees may service clients whose demands change frequently, in contrast to bosses and co-workers. This could serve as an important platform for knowledge acquisition. Through this, employees are able to understand behavioural patterns of customers and improve customization.

Customers in their interactions with employees also stand to gain knowledge about employees. Employee behaviour tends to give the customer a clue about service delivery processes. Employees may behave differently when in contact with customers when compared to leaders or co-workers (*Sierra & McQuitty,* 2005), but consumers get the opportunity to collect information from firms by observing the service employees' attitudes and behaviors (*Wang & Lang*, 2019). The interactions between employees and customers for the duration of the service experience may help customers develop social identity with the firm and could further develop into an important long-term customer loyalty (*Wang & Lang*, 2019). Interactions serve as a key information point where customers use to evaluate the relevance of the service. Whilst the general understanding is the gain firms obtain from these interactions, *Joshi & Sharma*, (2004) contend that customers through these interactions gain important knowledge and experience about firms. Thus, a longer period of customer-employee interactions may intensify mutual understanding (*Biesanz et al.*, 2007).

According to *Keith et al.* (2004) customer-employee exchange includes solidarity, harmonization and information exchange. Solidarity in their study was explained to refer to situation where exchange is considered to be important and ongoing, which suggests that employees and customers alike expect the relationship to continue (*Keith et al.*,2004). Harmonization explains the trust existing between the parties to the exchange and their resolve to solve conflict. Information exchange also refers to the information content in the exchanges (*Li & Hsu*,2016; *Keith et al.*, 2004). This study adopts the categorization of customer-employee exchange advanced by *Keith et al.* (2004).

Customer Knowledge Management (CKM)

Zhan et al., (2019) defined customer knowledge management as the management of the procedure an organization uses to acquire, store and analyze data related to customers. *Gebert et al.*(2002) argue that customer knowledge is inherently found in the values experiences and perceptions of the firm's relationship with its customers. It is concerned with the management and exploitation of corporate knowledge. This knowledge includes both explicit knowledge and other archived and implied knowledge that is held in employees' minds and are embedded in the fulfillment of their job (*Rowley*, 2002). According to *Taherparvar et al.* (2014) CKM efficiently manages knowledge from the viewpoint of the consumer and offers crucial sources for innovative ideas. To meet the wants and challenges of customers, they can be used to create new products, services, and solutions (*Belkahla & Triki*, 2011). It also encourages the sharing of customer knowledge both within a company and between clients and businesses. Therefore, it is vital to make customer information accessible,

develop it, and communicate it systematically if it is to be used in a target-oriented way. Customers can participate actively as knowledge partners with the business by implementing CKM. *Kakhki et al.* (2021) postulate that customer knowledge management is seen as a managerial strategy which provides support for the relationship between an organization and its customers. CKM allows a competent mutual engagement between customers and organization when customer knowledge is set in motion in the organization (*Kakhki et al.*, 2021). It frequently becomes ingrained in organizational routines, processes, practices and conventions in addition to documents or repositories.

Furthermore, customer knowledge has been categorized as knowledge about, knowledge from, and knowledge for the consumer (*Wilde*,2011; *Khosravi et al.*,2017). Knowledge about the customer is customer-oriented knowledge and includes details about the customer's purchasing and payment habits, as well as his motivations, preferences, and needs. This type of knowledge is primarily learned passively, or without actively engaging the customer. It is the outcome of investigations, discussions, and observations made, for instance, by market research organizations (*Khosravi et al.,* 2017). With knowledge from customer the majority of customer knowledge comes directly from the business. Consumers provide the company with information during their interactions with them; services, and procedures as well as their expectations. This area of information also includes market analyses, consumer knowledge about their rivals or technology, and solution suggestions (*Khosravi et al.*, 2017). With knowledge for the consumer, customers share their information with another business and that business is better able to spot any potential knowledge gaps and expand on the consumer's "non-knowledge" (*Khosravi et al.*, 2017).

Firm innovation

Firm innovation is well thought-out to be a critical factor among SMEs whose aim is to provide superior value propositions to the markets. Firm innovativeness is the ability of an organization to engage in new ideas and concepts that may lead to the adoption of new procedures or the launch of new goods (*Zastempowski*, 2022). Thus, rather than focusing on the actual act of implementing and introducing ideas, firm innovativeness captures an organization's capacity to innovate in its entirety (*Hügel,* 2019). According to *Rubera & Kirca*(2012), the innovativeness of a company is seen as a key asset and has been the focus of much research on innovation. Additionally, the variety and inconsistency found in the literature show that there is no single coherent measurement model, common concept, or widely accepted definition of the phenomenon (*Pallas et al.*, 2013). Nevertheless, we suggest that firm innovation represents the capacity that a firm possesses in its quest to find new ways of doing business. This could be new product development or new service process. Firm innovative capacity could be said to be an important driver for economic development. As a result, firms endeavor to understand customers by acquiring market information in order to anticipate changes in customer needs and attitudes (*Thoumrungroje & Racela*, 2022).

According to *Lv & Xiong* (2023) the existing literature on innovation has developed into two proxies: Research and Development (R&D) and patenting. The authors argued that patenting activity is considered a better proxy as it seeks to measure innovation output while at the same time captures how effective a firm utilizes its innovation input. Firms that are innovative are likely going to possess higher efficiency, productivity and boost their market power (*Aghion et al.*, 2014). Innovation could be said to be undertaken in different contexts with importance placed on creative methods. Creative methods can come in different ways; customer complaint handling, packaging, new production methods, new product development and to mention just a few. Being receptive to customer complaints via customer-response capability helps firms develop innovations that enhance customer value (*Thoumrungroje & Racela*, 2022). In a study by *Monteiro et al.* (2020) it was postulated that innovation serves as the source of a firm's competitive advantage and that marketing innovation is seen to be an important aspect of innovation.

Knowledge-Based View (KBV)

This study recognises the importance of knowledge for business organizations. This calls for the need to understand the concept of the knowledge-based view of the firm. The knowledge-based view (KBV) of the firm was proposed in the early 1990s because of the convergence of several research streams (*Al-Shammari,* 2009). The RBV of the company, epistemology, and organizational learning are some of these streams (*Grant*, 2002). The emphasis of the global economy now is on intellectual resources rather than physical ones. The majority of intellectual resources consist of know-how, know-why, experience, and knowledge that typically resides in the minds of one or a small number of employees, even though some intellectual resources, such as patents, intellectual property, etc., are more apparent than others (*Klein,* 1998). According to *Pereira & Bamel* (2021) the knowledge-based view (KBV) offers an important "rationale for considering knowledge as a strategic resource". Research indicates that issues regarding the timely absorption of knowledge (*Martínez-Sanchez et al.*, 2020) its transferability (*Bacon et al.*, 2020) and use (*Lee et al.,* 2021) serve as important elements for a firm to stay in business (*Fernandes et al.*,2022).

According to *Davenport & Prusak* (1998), a firm's only sustainable competitive advantage (SCA) often results from what it already knows, how rapidly it picks up new knowledge, how well it uses what it already knows, and how quickly it applies new knowledge (*Sawhney & Prandelli*, 2000). Competitive advantage or positioning in the KBV of a company could be said to be produced through knowledge-intensive competencies that optimize value-adding customer offerings. Many businesses in recent times are compelled to develop new methods of employing the knowledge acquired in creating or upgrading their business processes as a result of the knowledge's rising domination as a foundation for organizational efficiency and effectiveness. The importance of knowledge acquisition in the modern marketing environment cannot be discounted as it provides an avenue for creating a competitive advantage for long term success.

Following the review of the extant literature, the hypothesis of the study is provided in *Table 1* below.

Table 1: Hypothesis

H1	Solidarity has a significant effect on firm innovative behavior
H2	Harmonization has a significant effect on firm innovative behavior
H3	Information exchange has a significant effect on firm innovative behavior
H4	Customer knowledge management has a mediating role on the relationship between solidarity and Firm innovative behavior
H5	Customer Knowledge Management has a mediating role on the relationship between harmonization and firm innovative behavior
H6	Customer Knowledge Management has a mediating role on the relationship between information exchange and firm innovative behavior.

MATERIAL AND METHOD

Study context

Ghana is a country located in the West African sub-region (or sub-Sahara Africa). It has a population of about 30.8 million (*Ghana Statistical Service*, 2023). According to *Asare* (2014) Small and Medium enterprises in Ghana developed during the pre-colonial time, where the middle class was trained to take over the businesses of European merchants. At that time the population was about 6 million. Nevertheless, the intent was met with several problems, especially during the era of the first president of Ghana in the early 60's who saw the rise of the private sector as a political threat, and therefore formulated policies to discourage such in order to promote the public sector. However, a major setback in the 1980's in a large-scale manufacturing firm forced the formal sector workers to seek a secondary source, hence the springing up of Small and Medium-sized Enterprises (*Asare*, 2014). Subsequently, the Government of Ghana had to enact some policies in order to give confidence to the setting up of SME's

SMEs represent an important backbone of developing economies. Regardless of a country's degree of development, small and medium-sized enterprises (SMEs) are significant contributors to economic growth and development. In most of Africa, small and medium-sized businesses (SMEs) represent the backbone of the economy, and Ghana is no exception. According to information available from the Registrar General's Department (Ghana), a little over 90% of companies registered in Ghana fall within the SME category (*Mensah*, 2004). Since they represent a significant source of income and jobs, SMEs have been recognized as the driving force behind the nation's economic growth and development. In Ghana SMEs provide about 85 percent of manufacturing employment and contributes 70 percent to the national GDP (*Asare*, 2014). This is in line with the suggestions made by *OECD* (1997) that SMEs play a vital role on the economic growth and development, employment and income of a country.

Methodology

Data was mainly collected using the questionnaire as an instrument. The questionnaire was divided into two (2) main sections. The aim of the first section was to collect demographic data of the respondents (and the enterprise). Information gathered from this section included gender, age, position in the company, sector the company operates and number of full time employees. The second section enabled the researchers collect information regarding the constructs (closed-ended questions). The section was further divided into the constructs of interest i.e. customer-employee exchange (solidarity, harmonization and information exchange), customer knowledge management and firm innovative behavior.

We conducted a survey to gather empirical data on SMEs in Ghana. The data for this study was collected on quantitative research methods. The researchers adopted the survey method as the preferred technique. The questions were therefore structured. The measurement instrument was developed and measured using the PLS-SEM measurement model based on theoretical models. The structural model of PLS-SEM was used to test our model and hypotheses as suggested by *Valaei et al.* (2017). The measurement model was determined. Its quality was dependent on validity and reliability based on these values: Cronbach's alpha (> 0.60), composite reliability (>0.70), average variance extracted (AVE) (> 0.50).

The independent variable for the study; customer-employee exchange was adopted from the work of *Keith et al.* (2004). Their work further conceptualized customer-employee exchange into solidarity, harmonization and information exchange. The mediator (customer knowledge management) and the dependent variable (firm innovative behavior) were adapted from the extant literature. Data from SMEs in Ghana (n=247) was ultimately used for the data analysis. A five-point Likert-type scale ranging from "strongly disagree" to "strongly agree" applied on 25 items.

RESULTS AND DISCUSSION

Demographic information

In *Table 2* the demographic information of the respondents (those who answered the questions on behalf of the firm) are indicated. It shows that *147* representing *59.5%* are males, whereas *100,* representing *40.5%* are females. Most of them are frontline employees (*54.25%*)*,* with the rest in that order; CEO (*9.7%*)*,* Manager (*17%*) while others are at *19%*. There were *56.68%* of the sample who are from the 20-29 age category, whilst the rest being *30-39* (*30.7%*), *40-49* (*8.9%*) and *50* above (*19%*). The firms operate in different sectors of the economy. The majority (*21%*) are from the wholesaling or retailing. The rest follow in this order; Health (*13.7%*)*,* manufacturing (*13.36%*), service providers (*19.8%*), financial service (*8.5%*)*,* Agriculture (*5.2%*), hospitality (*4.453%*), extraction (*2.4%*)*,* and others (19.8%). The firms further indicated the number of their full-time employees, with *55%* having up to *20* employees, *36.4%* (between *21* and *50*) and *8.1%* having between *51* and *100* employees.

Table 2: Demographic information

Demographic Information	Categories	Frequency	Percent
Gender	Male	147	59.514
	Female	100	40.5
Age Group	20-29	140	56.68
	30-39	76	30.769
	40-49	22	8.907
	50 or More	9	3.6
Position in the Company	Ceo	24	9.717
	Manager	42	17.004
	Frontline Employee	134	54.251
	Other	47	19
Sector the Company Operate	Manufacturing	33	13.36
	Wholesaling/Retailing	52	21.053
	Agriculture and Agri-Business	13	5.263
	Hospitality	11	4.453
	Financial Service	21	8.502
	Health Facility/Service	34	13.765
	Extraction, Drilling &Mining	6	2.429
	Service Provider	49	19.8
	Other	28	11.336
Number of Full-Time Employees in the Company	1-20	137	55.466
	21-50	90	36.437
	51-100	20	8.1

Common Method Bias (CMB)

To assess the presence of common method bias (CMB), the study employed two measures: the hetero trait – mono trait ratio of correlations (HTMT) and the inner variance inflation factor (VIF). *Nitzl* (2016) suggests that CMB exists if the primary constructs exhibit significant correlations (r >*0.90*). However, in the current study, all correlation values among the constructs, as presented in the HTMT table, are below *0.90*. The highest correlation value observed is *0.597*, indicating an absence of CMB. An alternative approach to identify CMB is by examining the inner VIF values. A VIF value exceeding 3.30 implies the potential contamination of the model by CMB. In our study, the highest VIF value obtained is *1.306*, as indicated in the structural model assessment table. This value is significantly below the threshold of 3.30 established by *Kock* (2015) and *Adedeji et al.* (2020), further confirming the absence of CMB. Consequently, the results of this study suggest that CMB is not a significant concern, and the findings can be interpreted with confidence.

Table 2 displays the descriptive statistics of the constructs, along with their inter-correlations, providing valuable insights into the relationships between the variables.

Notably, all of the constructs exhibit significant correlations with firm innovative behaviour (FIB), highlighting their relevance in contributing to FIB. Among the constructs, it is worth noting that harmony (HAR) has the lowest mean value of *3.894,* indicating relatively lower levels compared to the other factors. Conversely, solidarity (SOL) demonstrates the highest mean value of *4.009*, indicating its comparatively greater influence. These findings emphasize the importance of considering these constructs as crucial factors when formulating strategies aimed at enhancing FIB. In summary, the results from *Table 3* underscore the significance of the examined constructs in relation to FIB and underscore the need for incorporating them into the development of strategies designed to improve FIB.

Table 3: Means, Standard Deviation, and Correlations of the Study Variables

Variables	Mean	SD	Gender	Age	Posi.	sector	NOE	SOL	HAR	IE	CKM	FIB
Gender	1.402	0.491	1									
Age	1.585	0.787	-0.084	1								
Position	2.829	0.864	0.105	0.076	1							
sector	4.881	2.851	0.12	.275**	.361**	1						
NOE	1.52	0.637	-0.059	0.106	0.043	0.066	1					
SOL	4.009	0.772	-0.096	0.079	-.136*	-0.114	-0.066	1				
HAR	3.894	0.351	-0.013	-0.062	0.078	-0.038	-0.049	-0.086	1			
IE	3.983	0.612	0.023	-0.094	-0.063	-0.022	-0.034	0.031	-0.072	1		
CKM	3.997	0.632	-0.084	-0.109	0.022	-0.082	0.049	.207**	.279**	.251**	1	
FIB	3.896	0.81	-0.041	-.191**	0.014	-0.072	0.006	.186**	.298**	.247**	.514**	1

Notes: n = 384, * p <0.05, ** p <0.01(2-tailed), CA are reported in the parentheses on the diagonal, NOE: Number of employees

Data Analysis and Measurement Model Assessment through Smart-PLS

The initial phase of the analysis involved an examination of several critical aspects, including common method bias (CMB), missing data, outliers, data normality, and variable correlations. Once the data passed the necessary checks and was deemed suitable, a measurement model was developed using Smart-PLS software 4.0. This model aimed to evaluate the reliability, validity, convergent validity, discriminant validity, and internal consistency of the constructs under investigation, following the guidelines of *Hair et al.* (2017) and *Ringle et al.* (2015). Subsequently, the focus shifted to the assessment of the proposed hypotheses within the structural model. This step involved analyzing the relationships between the constructs and examining the overall model fit and significance of the paths, as recommended by the aforementioned scholars. By following this systematic approach, the study ensured a rigorous evaluation of the data, construct measurement, and the relationships proposed in the model, establishing a robust foundation for drawing meaningful conclusions from the analysis.

In the measurement model, the PLS-algorithm was employed to assess the factor loadings of all the items. The obtained factor loadings ranged from *0.665* to *0.931*, satisfying the recommended cut-off values proposed by *Hulland* (1999). This indicates a strong association between the items and their respective constructs.

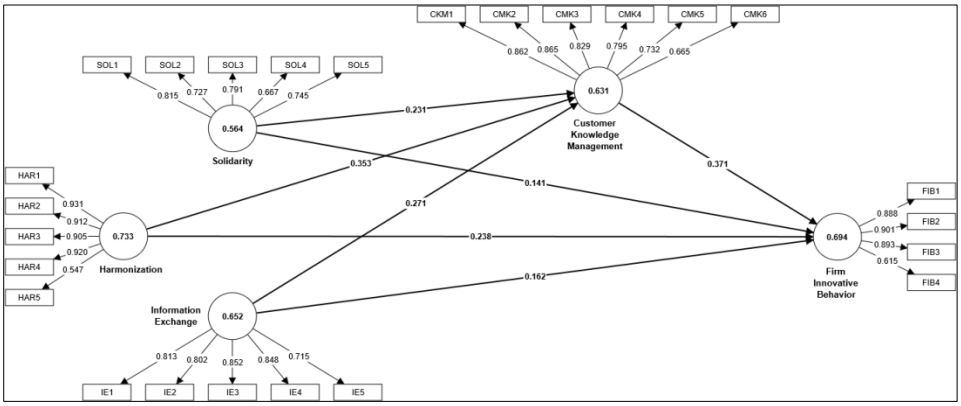
Convergent validity was evaluated by examining the Average Variance Extracted (AVE) values. All AVE values exceeded the threshold of *0.5* (*50%*), as suggested by *Hair et al.* (2017). This suggests that a significant proportion of the variance in the items is accounted for by their corresponding constructs, further supporting convergent validity. To ensure internal consistency, Cronbach's Alpha and composite reliability values were calculated. Both values surpassed the recommended threshold of *0.70*, as advocated by *Hair et al.* (2017). *Table 4* and *Figure1*corroborated these results, which provide an overview of the measurement model and its statistical indicators. With internal consistency and convergent validity confirmed, the next step involved assessing discriminant validity.

Table 4: Constructs validity and reliability

Constructs	Items	F.L	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
CKM	CKM1	0.862	0.881	0.884	0.911	0.631
	CMK2	0.865				
	CMK3	0.829				
	CMK4	0.795				
	CMK5	0.732				
	CMK6	0.665				
FIB	FIB1	0.888	0.845	0.873	0.899	0.694
	FIB2	0.901				
	FIB3	0.893				
	FIB4	0.615				
HAR	HAR1	0.931	0.905	0.95	0.93	0.733
	HAR2	0.912				
	HAR3	0.905				
	HAR4	0.92				
	HAR5	0.547				
Information Exchange	IE1	0.813	0.868	0.888	0.903	0.652
	IE2	0.802				
	IE3	0.852				
	IE4	0.848				
	IE5	0.715				
Solidarity	SOL1	0.815	0.81	0.844	0.866	0.564
	SOL2	0.727				
	SOL3	0.791				
	SOL4	0.667				
	SOL5	0.745				

Notes: CR: Composite Reliability; AVE: Average Variance Extracted; CA: Cronbach's Alpha

Figure 1: Measurement model with outer loadings and AVE values from PLS-Algorithm



To confirm the discriminant validity, we used two methods: Fornell Larcker and Hetero trait and Mono trait (HTMT) Ratio. The Fornell Larcker results are presented in *Table 5*, which confirms the discriminant validity. The diagonal cells show the square root of AVE, which is higher than the correlation values below them (*Fornell & Larcker*, 1981). This confirms the discriminant validity of all the constructs.

We also used the HTMT ratio to confirm discriminant validity. All the correlation values among the constructs were less than 0.9 as recommended by *Hair et al.* (2017), confirming the discriminant validity of all the constructs. The HTMT results for checking the discriminant validity can be found in *Table 6*.

Table 5: Discriminant validity – Fornell Larcker

Constructs	CKM	FIB	Harmonization	Information Exchange	Solidarity
CKM	0.795				
FIB	0.521	0.833			
Harmonization	0.32	0.336	0.856		
Inf. Exchange	0.261	0.252	-0.059	0.807	
Solidarity	0.219	0.213	-0.075	0.051	0.751

Notes: The square root of AVEs are higher than the inter-correlation values.

Table 6: Discriminant validity

Constructs	CKM	FIB	Harmonization	Information Exchange	Solidarity
CKM					
FIB	0.597				
Harmonization	0.344	0.373			
Inf. Exchange	0.29	0.289	0.073		
Solidarity	0.255	0.252	0.106	0.09	

Assessment of the Structural Model

In the evaluation of the structural model, we performed various assessments to ensure its reliability and predictive capabilities. Firstly, we examined the inner Variance Inflation Factor (VIF) values to identify any potential collinearity issues. The analysis revealed that the highest VIF value observed was 1.306, which is below the commonly accepted threshold of 5 (*Hair et al.*, 2017). This finding confirms that collinearity was not a significant concern in our model, enhancing the reliability of the estimated relationships between the variables.

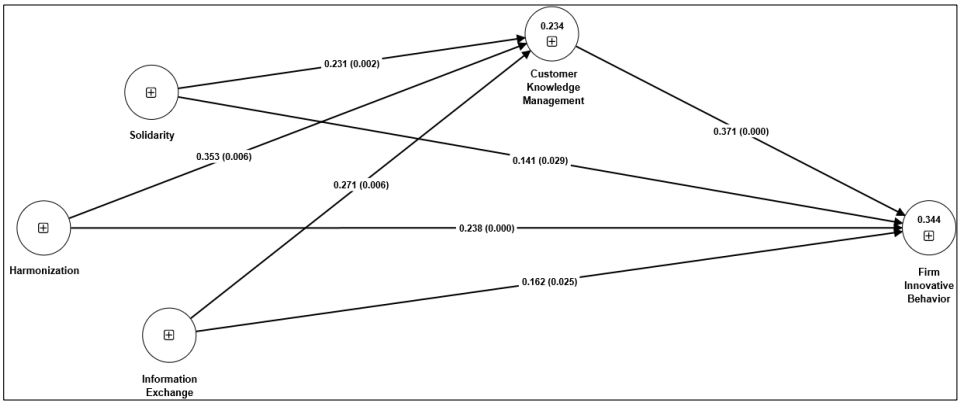
Additionally, we assessed the coefficient of determination (R2), effect size (F2), and predictive relevance (Q2) to gauge the model's performance. These metrics are crucial in determining the explanatory power and predictive capability of the model. We compared the obtained values against the threshold criteria, as presented in *Table 7* and *Figure 2*. The results indicated that our model achieved favorable R2, F2, and Q2 values, meeting or exceeding the predefined thresholds. This suggests that our model possesses good explanatory power and is a reliable predictor of the outcome variable.

Table 7: Assessment of the structural model

<table>
<tr><td rowspan="3">R-Square</td><td>Endogenous</td><td rowspan="2">R Square</td><td>R Square</td><td rowspan="3">0.26: Substantial,
0.13: Moderate,
0.02: Weak
(Cohen, 1988)</td></tr>
<tr><td>Variables</td><td>Ad-justed</td></tr>
<tr><td>CKM</td><td>0.234</td><td>0.225</td></tr>
<tr><td rowspan="6">Effect Size (F-Square)</td><td>Exogenous</td><td rowspan="2">EA</td><td rowspan="2">EPMT</td><td rowspan="6">0.35: Substantial,
0.15: Medium effect,
0.02: Weak effect
(Cohen, 1988)</td></tr>
<tr><td>Variables</td></tr>
<tr><td>CKM</td><td></td><td>0.161</td></tr>
<tr><td>Harmonization</td><td>0.162</td><td>0.073</td></tr>
<tr><td>Information Exchange</td><td>0.095</td><td>0.036</td></tr>
<tr><td>Solidarity</td><td>0.069</td><td>0.028</td></tr>
<tr><td rowspan="6">Collinearity (Inner VIF)</td><td>Exogenous</td><td rowspan="2">EA</td><td rowspan="2">EPMT</td><td rowspan="6">VIF <= 5.0
(Hair et al., 2017)</td></tr>
<tr><td>Variables</td></tr>
<tr><td>CKM</td><td></td><td>1.306</td></tr>
<tr><td>Harmonization</td><td>1.009</td><td>1.172</td></tr>
<tr><td>Information Exchange</td><td>1.006</td><td>1.101</td></tr>
<tr><td>Solidarity</td><td>1.008</td><td>1.078</td></tr>
<tr><td rowspan="4">Predictive Relevance (Q-Square)</td><td>Endogenous</td><td rowspan="2">CCR</td><td rowspan="2">CCC</td><td rowspan="4">Value higher than 0 indicates Predictive Relevance
(Stone, 1974; Geisser, 1975)</td></tr>
<tr><td>Variables</td></tr>
<tr><td>CKM</td><td>0.138</td><td>0.477</td></tr>
<tr><td>FIB</td><td>0.222</td><td>0.495</td></tr>
</table>

Notes: CCC: Construct Cross-validated Communality, CCR: Construct Cross-validated Redundancy

Figure 2: Structural model with inner model t-values



Following a robust analysis, the proposed hypotheses were evaluated through a 5000-resample bootstrapping procedure conducted in Smart-PLS. The results are presented in *Table 8*, providing insights into the relationships between the variables. The findings support the first hypothesis (H1) concerning the relationship between Solidarity and FIB. The analysis revealed a significant association ($p = 0.029$, $t = 2.186$) with a positive effect ($\beta = 0.141$). This suggests that Solidarity has a favorable impact on FIB. Similarly, the second hypothesis (H2) regarding the relationship between Harmonization and FIB yielded significant results ($p = 0.000$, $t = 3.634$) with a positive effect ($\beta = 0.238$). This indicates that Harmonization significantly influences FIB in a positive manner. Furthermore, the third hypothesis (H3) pertaining to the relationship between Information exchange (IE) and FIB also demonstrated significance ($p = 0.025$, $t = 2.238$) with a positive effect ($\beta = 0.162$). This suggests that Information Exchange has a noteworthy positive impact on FIB. These significant findings provide empirical evidence supporting the hypothesized relationships between the constructs, reinforcing the theoretical framework of the study. The inclusion of the p-values, t-values, and effect sizes (β) enhances the clarity and comprehensibility of the results, contributing to the overall robustness and validity of the research outcomes.

Table 8: Hypothesis testing result

Hypotheses	OS/ Beta	SM	SD	95% C.I. Bias Corrected		T	P	Decision
				LL	UL			
H1: Solidarity -> FIB	0.141	0.146	0.065	0.014	0.264	2.186	0.029	Supported
H2: Harmonization -> FIB	0.238	0.227	0.065	0.113	0.371	3.634	0	Supported
H3: I. Exchange -> FIB	0.162	0.161	0.072	0.01	0.296	2.238	0.025	Supported

Notes: OS: Original Sample; LL: Lower Limit; UL: Upper Limit; Significant; *p < 0.05

The analysis of the fourth hypothesis (H4) examined the mediation role of CKM in the relationship between Solidarity and FIB. The results indicate that this hypothesis was found to be significant, with a p-value of 0.019 and a t-value of 2.348. Furthermore, the lower limit (LL) value of 0.024 and the upper limit (UL) value of 0.161 demonstrate a non-zero range, providing additional evidence of significant mediation. It is worth noting that the mediation in this case is partial, as the direct relationship between Solidarity and FIB was also found to be significant. Similarly, the fifth hypothesis (H5) explored the mediation role of CKM in the relationship between Harmonization and FIB. The analysis reveals that this hypothesis was found to be significant, with a p-value of 0.037 and a t-value of 2.081. The LL value of 0.022 and the UL value of 0.264 further confirm the presence of significant mediation. Similar to H4, the mediation observed in H5 is partial, as the direct relationship between Harmonization and FIB was also found to be significant. Furthermore, the sixth hypothesis (H6) investigated the mediation role of CKM in the relationship between information exchange and FIB. The analysis indicates that this hypothesis was found to be significant, with a p-value of 0.032 and a t-value of 2.146. Additionally, the LL value of 0.020 and the UL value of 0.196 support the presence of significant mediation. Again, the mediation observed in H6 is partial, as the direct relationship between Information Exchange and FIB was also found to be significant. These significant findings provide support for the proposed mediation hypotheses, indicating that CKM plays a significant mediating role in the relationships between Solidarity, Harmonization, Information Exchange, and FIB. The inclusion of the relevant statistical values enhances the clarity and comprehensibility of the results, strengthening the overall validity and significance of the research findings.

Table 9: Mediation analysis result

Hypotheses	OS/Beta	SM	SD	95% C.I. Bias Corrected		T	P	Decision
				LL	UL			
H4: Solidarity -> CKM -> FIB	0.086	0.091	0.037	0.024	0.161	2.348	0.019	Supported
H5: Harmonization -> CKM -> FIB	0.131	0.136	0.063	0.022	0.264	2.081	0.037	Supported
H6: I. Exchange -> CKM -> FIB	0.1	0.111	0.047	0.02	0.196	2.146	0.032	Supported

DISCUSSIONS

Customer-employee exchange and firm innovative behaviour

The study sought to understand the influence of the various aspects of customer-employee exchange, namely; solidarity, harmonization and information exchange on firm innovative behaviour. The findings of the study indicate that solidarity has an effect on firm innovative behaviour. It shows that when an enterprise is

committed to the preservation of good relations with the customer business relationships are improved enormously. The continued relationship between the firm and the customers enables the firm to get enough information to come up with important new products or new ways of providing services in the future. This could be new technology or improving the quality of an existing product/service. As advanced by *Zhao et al.*,(2016*)* the FIB represents those research and development (R&D) activities that are geared towards providing new ways of doing business like new technology, as well as improving the quality and efficiency of current products. It is important to note that the R&D, which is usually associated with large corporations, comes with a huge budget for consistent research into new product development.

This development may not sit well with small business. It, therefore, behoves them to find solutions to their own form of research, which is the continuous preservation of good relationships with customers.

Harmonization is found to have an effect on FIB. This means that the firms are able to put in effort in resolving disagreement with customers in a most amicable manner. Sometimes, when disagreements persist longer than expected, third parties are brought in to help resolve them. The firms, by this, are able to ensure that they create new forms of approaching customer concerns in the future and or improve on the existing ones. The relationship is said to be in a positive direction, meaning the more the firm and the customer become conscientious about maintaining a cooperative relationship the firm benefits by becoming more innovative. Thus, the existence of mutual understanding on how disputes are settled creates more beneficial relationships.More avenues for interactions apart from the traditional forms (suggestion boxes, in-person or over-the-counter) should be provided for dissatisfied consumers to provide their dissatisfaction level. Whilst some small enterprises are still in limbo as to the adoption of other forms of media, others have made it a point to form a social media group (whatsApp, Facebook, Instagram), which are usually peculiar to larger corporations in the country. Dissatisfaction arises when the customer perceives an unmet need. As suggested by *Duverger* (2012) customers innovative ideas are prompted either by their unmet needs and/or by their knowledge of an alternative similar service which could cause switching behavior. For instance, service providers are supposed to communicate changes in service delivery schedules to customers on time rather than leaving it for them to find out all by themselves. This has the ability to create dissatisfaction among customers. When such happens,firms can turn it into a positive outlook by pouncing on the misnomer to their advantage by providing better avenues of communication.

Information exchange has been found to influence FIB. Thus, the SMEs have made it a point, along with their customers, to keep each other informed about events or changes that may affect the other party. The exchange of information between the provider and the customer takes place frequently and sometimes informally as well. Some customers may have the innate characteristics of promoting innovative behaviour for which employees of the enterprise could find useful. Consumers who are seen to possess high level of innovativeness could tend

to be important asset for the service provider. These help in making the SMEs become wary of obsolete procedures and continue to strive towards service innovations. It is worthy of note that the variables identified, solidarity, harmonization and information exchange have an important role to play in respect of an SMEs' ability to bring new ideas in product improvement, new product development and service provision.

The mediating role of customer knowledge management

The study further sought to understand the mediating role of customer knowledge management in the relationship between customer-employee exchange (Solidarity, Harmonization and Information exchange) and FIB. Firstly, the direct relationship between customers-employee exchange and FIB has already been established. The mediation effect of customer knowledge management has also been established. This means that even though customer knowledge management plays a role in determining the importance of customer-employee exchange on firm innovative behaviour, the role is seen as partial. Even though, it does not take only customer knowledge to directly affect the relevance of customer interactions on firm innovative behaviour, it does provide an important platform for improvement in innovation.

Employee motivation to have knowledge of technology (*Akram et al.*, 2020) as well as consumers in the work setting results in high levels of willingness to adopt and execute innovative behavior. Customer Knowledge acquisition has been demonstrated to have an important role on the extent of the influence of customer-employee interactions on FIB. Firm's employees are sometimes motivated to be innovative and this is highly related to their desire to learn new ideas, approaches, methods etc. gained from customer knowledge. This enhances their performance and leads to their innovative behavior, especially at the workplace (*Afsar & Umrani,* 2020). According to *Chaithanapat et al.* (2022)knowledge management represents a vital factor in firm's innovative activities. This means that, even though, knowledge management influences FIB, managers and owners of SMEs also need to focus on customer employee exchange (solidarity, harmonization, and information exchange) as a key driver for FIB in SMEs, and it can indirectly affect innovation quality.

CONCLUSIONS

The study aimed at investigating the effects of customer-employee exchange on firm innovative behaviour (FIB). It further sought to determine the extent to which customer knowledge management mediate the relationship between customer-employee exchange (Solidarity, Harmonization and Information exchange) and FIB. All the three elements constituting customer-employee exchange have been found to have a positive influence on FIB. This is similar to the works of *Li & Hsu* (2016) who found that customer-employee exchange have had a profound impact on innovative behaviour. For firms to continually improve on their innovative

behaviour, they must strive harder to ensure that their interactions with the customers are targeted or directed rather than being haphazard. This way the SMEs can get enough information from customers due to their mutual information sharing activities.

The study recommends that since enterprises have limited resources especially when compared to large corporations much time should be dedicated to finding new ways of doing business (innovation) rather than having to rely on obsolete methods. Being innovative does not equate to fully adoption of what the larger companies do, but finding ways to adapt to the new ways of doing business is necessary. That notwithstanding, a lot of these enterprises, because they are not seemingly operating like the large corporations, they tend to ignore certain widely acceptable divisions and assignment of responsibilities. However small the enterprise is, relevant departments (such as marketing or HR) need to be created in reference to their resource limitations and be made consistent with current trends in organizational behavior. To this end, the result is necessary to encourage the essentials of customer interactions for the purpose of knowledge management, hence innovation.

Implications

It is worthy of note that the findings of this study provide a practical reference for management. Firm innovativeness is essential in the continuous development of enterprises, especially those with very limited resources. First of all regular interactions between customers and employees must be encouraged at all times and not limited to working hours. Channels as well as duration of communications seem to be limited to working hours only, understandably due to limited financial resources. However, as stated earlier, and despite their limitations guaranteed future revenues can be associated with the right investment. This should be done by incorporating technology-related customer interaction points such as social media, email, and interactive online communities, and be available even after work hours. A lot of these SMEs either do not have an online presence or are notactive (when present) so are usually restricted to communications via brick-and-mortar. Though some of them realize the importance of online presence, they need to apply the relevant technology to consolidate offline gains. The digital economy has the ability to add to the value chain for competitive advantage.

Some consumers are innately innovative and so those who are seen to be important in providing regular feedback and suggestions that improve the service provision or product development must be identified and targeted. They can be categorized according to their level of knowledge in innovation as suggested by (*Sarmah et al.*, 2021). For instance, trustworthy customers can be identified to provide them with some form of conventional channels where they are allowed to directly present constructive suggestions (information, customer knowledge) and be subsequently rewarded. The rewards can be in a form of recognition or discount on some identified products.

REFERENCES

Adedeji, P. A., Akinlabi, S., Madushele, N., & Olatunji, O. O. (2020). Wind turbine power output very short-term forecast: A comparative study of data clustering techniques in a PSO-ANFIS model. *Journal of Cleaner Production*, *254*, 120135. https://doi.org/10.1016/j.jclepro.2020.120135

Adom, K., Tettey, L. N., & Acheampong, G. (2022). Understanding relationship marketing strategy in Ghana's informal economy: A case of micro, small and medium enterprises. *Journal of Research in Marketing and Entrepreneurship*, *25*(2), 253–269. https://doi.org/10.1108/JRME-03-2022-0033

Afsar, B., & Umrani, W.A. (2020). Transformational leadership and innovative work behavior: the role of motivation to learn, task complexity and innovation climate. *Eur. Journal of Innovation Management*, *23*(3), 402–428. https://doi.org/10.1108/EJIM-12-2018-0257

Aghion, P., Akcigit, U., Howitt, P. (2014). What do we learn from schumpeterian growth theory? *Handbook of Economic Growth*, *2*. 515–563. https://doi.org/10.1016/B978-0-444-53540-5.00001-X

Ahinful, G. S., Boakye, J. D., & Osei Bempah, N. D. (2023). Determinants of SMEs' financial performance: Evidence from an emerging economy. *Journal of Small Business & Entrepreneurship*, *35*(3), 362–386. https://doi.org/10.1080/08276331.2021.1885247

Akram, T., Lei, S., Haider, M. J., & Hussain, S. T. (2020). The impact of organizational justice on employee innovative work behavior: Mediating role of knowledge sharing. *Journal of Innovation & Knowledge*, *5*(2), 117–129. https://doi.org/10.1016/j.jik.2019.10.001

Al-Shammari, M. (2009). *Customer Knowledge Management: People, Processes, and Technology*. IGI Global. https://doi.org/10.4018/978-1-60566-258-9

Asare, A. O. (2014). Challenges affecting SME's growth in Ghana*, OIDA International Journal of Sustainable Development*, 07(06), 23–28.

Bacon, E., Williams, M. D., & Davies, G. (2020). Coopetition in innovation ecosystems: A comparative analysis of knowledge transfer configurations. *Journal of Business Research*, *115*, 307-316. https://doi.org/10.1016/j.jbusres.2019.11.005

Belkahla, W., & Triki, A. (2011). Customer knowledge enabled innovation capability: Proposing a measurement scale. *Journal of Knowledge Management*, *15*(4), 648–674. https://doi.org/10.1108/13673271111152009

Biesanz, J. C., West, S. G., & Millevoi, A. (2007). What do you learn about someone over time? The relationship between length of acquaintance and consensus and self-other agreement in judgments of personality. *Journal of Personality and Social Psychology, 92*(1), 119–135. https://doi.org/10.1037/0022-3514.92.1.119

Bowman, D., &Narayandas, D. (2001). Managing customer-initiated contacts with manufacturers: The impact on share of category requirements and word-of-mouth behavior. *Journal of Marketing Research, 38*(3), 281–297. https://doi.org/10.1509/jmkr.38.3.281.18863

Chaithanapat, P., Punnakitikashem, P., KhinKhin Oo, N. C., & Rakthin, S. (2022). Relationships among knowledge-oriented leadership, customer knowledge management, innovation quality and firm performance in SMEs. *Journal of Innovation & Knowledge*, *7*(1), 100162. https://doi.org/10.1016/j.jik.2022.100162

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillside, NJ. Lawrence Erlbaum Associates.

Davenport, T. & Prusak, L. (1998). *Working knowledge*. Harvard Business School Press

Duverger, P. (2012). Using Dissatisfied Customers as a Source for Innovative Service Ideas. *Journal of Hospitality & Tourism Research*, *36*(4), 537–563. https://doi.org/10.1177/1096348011413591

Fernandes, K. J., Milewski, S., Chaudhuri, A. & Xiong, Y. (2022). Contextualising the role of external partnerships to innovate the core and enabling processes of an organisation: A resource and knowledge-based view. *Journal of Business Research*, 144. 146–162. https://doi.org/10.1016/j.jbusres.2022.01.091

Fornell C. & LarckerD. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18* (1). 39–50. https://doi.org/10.1177/002224378101800104

Gebert, H., Geib, M., Kolbe, L., & Riempp, G. (2002). Towards Customer Knowledge Management: Integrating Customer Relationship Management and Knowledge Management Concepts. In *ICEB 2002 Proceedings (Taipei, Taiwan)*. https://aisel.aisnet.org/iceb2002/86/

Geisser, S. (1975). The Predictive Sample Reuse Method with Applications. *Journal of the American Statistical Association*, *70*(350), 320–328. https://doi.org/10.1080/01621459.1975.10479865

Ghana Statistical Service (2023). *2021 Ghana Population and Housing Census*. https://census2021.statsghana.gov.gh/

Grant, J. (2002). Learning needs assessment: Assessing the need. *BMJ*, *324*(7330), 156–159. https://doi.org/10.1136/bmj.324.7330.156

Guan, Y., Zhang, L., Zheng, L., & Zou, H. (2021). Managerial liability and corporate innovation: Evidence from a legal shock. *Journal of Corporate Finance*, *69*, 102022. https://doi.org/10.1016/j.jcorpfin.2021.102022

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: A comparative evaluation of composite-based structural equation modeling methods. *Journal of the Academy of Marketing Science*, *45*(5), 616–632. https://doi.org/10.1007/s11747-017-0517-x

Hall, B. H., Jaffe, A., & Trajtenberg, M. (2005). Market value and patent citations. *RAND Journal of Economics, 36*(1), 16–38.

Hügel, S. (2019). Reconsidering Firm Innovativeness. In S. Hügel (Ed.), *Innovation in Service Industries: An Investigation of the Internal and External Organizational Contexts from the Laboratory of Real Estate* (pp. 17–36). Springer Gabler. https://doi.org/10.1007/978-3-658-27179-4_3

Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic ManagementJournal*, *20*(2), 195–204. https://doi.org/10.1002/(SICI)1097-0266(199902)20:2<195::AID-SMJ13>3.0.CO;2-7

Imran, M. & Akhtar, I. (2022). Impact of Supervisor Feedback, Customer-Employee Exchange, and Creative Personal Identity on Innovative Behavior. In P. Ordóñez de Pablos (Ed.), *Handbook of Research on Developing Circular, Digital, and Green Economies in Asia* (pp. 140-163). IGI Global. https://doi.org/10.4018/978-1-7998-8678-5.ch008

Joshi, A. W., & Sharma, S. (2004). Customer knowledge development: Antecedents and impact on new product performance. *Journal of Marketing, 68*(4), 47–59. https://doi.org/10.1509/jmkg.68.4.47.42722

Kakhki, M. K, Malakooti Asl, N., & Parirokh, M. (2021). Assessment of customer knowledge management in academic libraries: Design and validation of a checklist. *The Journal of Academic Librarianship*, *47*(6), 102459. https://doi.org/10.1016/j.acalib.2021.102459

Keith, J. E., Lee, D.-J., & Leem, R. G. (2004). The Effect of Relational Exchange Between the Service Provider and the Customer on the Customer's Perception of Value. *Journal of Relationship Marketing*, *3*(1), 3–33. https://doi.org/10.1300/J366v03n01_02

Khosravi, A., Hussin, A. R. C., & Minaei-Bidgoli, B. (2017). Toward a Customer Knowledge Management Model for Enhancing Enterprise Software Quality. *Advanced Science Letters*, *23*(9), 9035-9038. https://doi.org/10.1166/asl.2017.10017

Klein, A. (1998). Firm Performance and Board Committee Structure. *The Journal of Law and Economics*, *41*(1), 275–304. https://doi.org/10.1086/467391

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, *11*(4), 1-10. https://doi.org/10.4018/ijec.2015100101

Lee, J. Y., Choi, B. C., Ghauri, P. N., & Park, B. I. (2021). Knowledge centralization and international R&D team performance: Unpacking the moderating roles of team-specific characteristics. *Journal of Business Research*,*128*, 627-640. https://doi.org/10.1016/j.jbusres.2020.06.052

Lee, S. M., &Trimi, S. (2018). Innovation for creating a smart future. *Journal of Innovation & Knowledge*, *3*(1), 1-8, https://doi.org/10.1016/j.jik.2016.11.001

Li, M., & Hsu, C. H. C. (2016). Linking customer-employee exchange and employee innovative behavior. *International Journal of Hospitality Management*, *56*, 87–97. https://doi.org/10.1016/j.ijhm.2016.04.015

Liu, P., & Li, H. (2020). Does bank competition spur firm innovation? *Journal of Applied Economics*, *23*(1), 519–538. https://doi.org/10.1080/15140326.2020.1806001

Lv, P., &Xiong, H. (2023). Financial Openness and Firm Innovation: Evidence from China. *Emerging Markets Finance and Trade*, *59*(4), 998–1011. https://doi.org/10.1080/1540496X.2022.2119801

Martínez-Sánchez, A., Vicente-Oliva, S., & Pérez-Pérez, M. (2020). The relationship between R&D, the absorptive capacity of knowledge, human resource flexibility and innovation: Mediator effects on industrial firms. *Journal of Business Research*, *118*, 431-440. https://doi.org/10.1016/j.jbusres.2020.07.014

Mensah, S. (2004) A Review of SME Financing Schemes in Ghana. In *Regional Workshop of Financing SMEs, Accra, Ghana in March 2004*. (pp. 1–4). UNIDO. http://www.doc88.com/p-5923947209413.html

Monteiro, B., Santos, V., Reis, I., Sampaio, M. C., Sousa, B., Martinho, F., José Sousa, M., & Au-Yong-Oliveira, M. (2020). Employer Branding Applied to SMEs: A Pioneering Model Proposal for Attracting and Retaining Talent. *Information*, *11*(12), https://doi.org/10.3390/info11120574

Namasivayam, K., & Mattila, A. S. (2007). Accounting for the joint effects of the services cape and service exchange on consumers' satisfaction evaluations. *Journal of Hospitality & Tourism Research*, *31*(1), 3–18. https://doi.org/10.1177/1096348006292996

Nitzl, C. (2016). Partial Least Squares Structural Equation Modelling (PLS-SEM) in Management Accounting Research: Directions for Future Theory Development. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2469802

OECD (1997). *Globalization and Small and Medium Enterprises, Synthesis Report*. Organization for Economic Cooperation and Development.

Pallas, F., Böckermann, F., Goetz, O., & Tecklenburg, K. (2013). Investigating Organisational Innovativeness: Developing a Multidimensional Formative Measure. *International Journal of Innovation Management*, *17*(04), 1350009. https://doi.org/10.1142/S1363919613500096

Pereira, V., & Bamel, U. (2021). Extending the resource and knowledge based view: A critical analysis into its theoretical evolution and future research directions. *Journal of Business Research*, *132*, 557-570. https://doi.org/10.1016/j.jbusres.2021.04.021

Ringle, C. M., Wende, S., & Becker, J.-M. (2015). SmartPLS 3 [computer software]. Bönningstedt: SmartPLS. https://www.smartpls.com

Rowley, J. E. (2002). Reflections on customer knowledge management in e-business. *Qualitative Market Research: An International Journal*, *5*(4), 268–280. https://doi.org/10.1108/13522750210443227

Rubera, G., & Kirca, A. H. (2012). Firm innovativeness and its performance outcomes: A meta-analytic review and theoretical integration. *Journal of Marketing*, *76*(3), 130–147. https://doi.org/10.1509/jm.10.0494

Sarmah, B., Shukla, Y., Chatterjee, R., & Kamboj, S. (2021). Customer participation in service innovation using SNS smartphone apps: an investigation of the Indian hotel service industry. *International Journal of Emerging Markets*, *18*(9), 2971–2992. https://doi.org/10.1108/ijoem-11-2020-1357

Sawhney, M. & Prandelli, E. (2000). Beyond Customer Knowledge Management: Customers as Knowledge Co-Creators. In Y. Malhotra (Ed.), *Knowledge Management and Virtual Organizations* (pp. 258-281). IGI Global. https://doi.org/10.4018/978-1-930708-65-5.ch014

Sierra, J. J., & McQuitty, S. (2005). Service providers and customers: Social exchange theory and service loyalty. *Journal of Services Marketing*, *19*(6), 392–400. https://doi.org/10.1108/08876040510620166

Solnet, D. (2007). Employee–Customer Linkages: A Social Identification Perspective in a Hotel Industry Context. *Journal of Hospitality and Tourism Management*, *14*(2), 129–143. https://doi.org/10.1375/jhtm.14.2.129

Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society: Series B (Methodological)*, *36*(2), 111-133. https://doi.org/10.1111/j.2517-6161.1974.tb00994.x

Taherparvar, N., Esmaeilpour, R., & Dostar, M. (2014). Customer knowledge management, innovation capability and business performance: a case study of the banking industry. *Journal of Knowledge Management*, *18*(3), 591–610. https://doi.org/10.1108/jkm-11-2013-0446

Thoumrungroje, A., & Racela, O. C. (2022). Innovation and Performance Implications of Customer-Orientation across Different Business Strategy Types. *Journal of Open Innovation: Technology, Market, and Complexity*, *8*(4), 178. https://doi.org/10.3390/joitmc8040178

Valaei, N., Rezaei,S., & Ismail, W. K. W. (2017). Examining learning strategies, creativity, and innovation at SMEs using fuzzy set Qualitative Comparative Analysis and PLS path modeling. *Journal of Business Research*, *70*, 224–233. https://doi.org/10.1016/j.jbusres.2016.08.016

Wang, Y.-C., & Lang, C. (2019). Service employee dress: Effects on employee-customer interactions and customer-brand relationship at full-service restaurants. *Journal of Retailing and Consumer Services*, *50*, 1–9. https://doi.org/10.1016/j.jretconser.2019.04.011

Wilde, S. (2011). *Customer Knowledge Management: Improving Customer Relationship through Knowledge Application*. Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-16475-0

Zastempowski, M. (2022). What Shapes Innovation Capability in Micro-Enterprises New-to-the-Market Product and Process Perspective. *Journal of Open Innovation: Technology, Market, and Complexity*, *8*(1), 59. https://doi.org/10.3390/joitmc8010059

Zhan, Y., Tan, K. H., & Huo, B. (2019). Bridging customer knowledge to innovative product development: A data mining approach. *International Journal of Production Research*, *57*(20), 6335–6350. https://doi.org/10.1080/00207543.2019.1566662

Zhao, S., Sun, Y., & Xu, X. (2016). Research on open innovation performance: A review. *Information Technology and Management*, *17*(3), 279–287. https://doi.org/10.1007/s10799-015-0231-7

Corresponding author:

Diyawu Rahman ADAM
Hungarian University of Agriculture and Life Sciences, Kaposvár Campus, 7400 Kaposvár, Guba Sándor u. 40. Hungary
e-mail: adamsdeown@gmail.com