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## **Mediation role of service innovation in the effects of knowledge creation on marketing performance of restaurants**

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**Abstract.** This work explores the effect of knowledge creation on service innovation and marketing performance among restaurants within the Kumasi Metropolis. A total of 200 restaurants were sampled for this work. The study adopted the use of questionnaire as the main data collection instrument to obtain the study responses. The information obtained from the structured questionnaire was analyzed using the multiple linear regression technique for analyzing mediation effects to arrive at the study results. The findings of the study indicate that there is a positive relationship between knowledge creation and service innovation. It was also found that service innovation has positive and significant effect on marketing performance. Furthermore, the study findings revealed that service innovation mediates the relationship between knowledge creation and marketing performance of restaurants. Based on the results, it was recommended that management invest in the creation of knowledge as this will drive innovativeness in the organization and subsequently lead to a higher marketing performance. The paper significantly discusses the body of knowledge concerning the effect of knowledge creation, service innovation and marketing performance in the restaurant context.

**Keywords.** service innovation, knowledge creation, Marketing performance, restaurant

### **1 Introduction**

As a result of globalization, business organizations have intensified their search for strategies that will give them a sustainable competitive advantage. Such strategies generally require that the firm continuously differentiates its products and services, that is, firms must constantly be innovative. This continuous innovation requires a well-planned system of knowledge management that enables the firm to excel in technological, market and administrative knowledge creation (Fernando, *et al.*, 2019). The importance of knowledge has been highlighted in literature (Wu & Lin, 2009). Knowledge is the fundamental basis of competition (Grant, 2016; Zack, *et al.*, 2009) and, particularly tacit knowledge, can be a source of advantage because it is unique, imperfectly mobile, imperfectly imitable and non-substitutable. However, the mere act of processing knowledge itself does not guarantee strategic advantage (Zack *et al.*, 2009); instead, knowledge has to be managed. According to literature,

firms that create new knowledge and apply it effectively and efficiently will be successful at creating competitive advantages. However, this study argues that the knowledge creation do not directly lead to competitive advantage until the organization harness the new knowledge to re-invent, upgrade or re-shape its services and product. The direct effect from the service innovation falls on the marketing performance of the firm; before creating the competitive advantage. Additionally, most of the focus has been on organizational performance or competitive advantage (López-Nicolás and Meroño-Cerdán, 2011). Firms are focusing attention on the utilization of knowledge creation process due to the intense competition they confront in the dynamic modern globalized economy. According to literature, the knowledge creation process allows firms to amplify knowledge embedded internally and transfer knowledge into innovative activities to improve efficiency and create business value (Nonaka *et al.*, 2000). Despite the importance of innovation in the knowledge creation – performance linkage, literature has not given much attention to the role of innovation in the knowledge creation – performance relationship; particularly among restaurants (Laihonen, & Mäntylä, 2018; Meng-Lei *et al.*, 2008). Furthermore, although the purpose of service innovation is to ensure stronger market positions, the literature tend to highlight on competitive advantage rather than the implication of service innovation on market performance. Based on the argument that knowledge creation do not directly lead to competitive advantage until the organization harness the new knowledge to re-invent, upgrade or re-shape its services and product; which leads to direct market outcomes for the firm before creating the competitive advantage. Interestingly, despite the growing literature on the impact of service innovation, the importance of service innovation in the knowledge creation process and performance linkage in the hospitality industry has not been largely explored (see; Ferreira, *et al.*, 2018; Meng-Lei *et al.*, 2009; Jeou-Shyan and Yu-Hua, 2009). The implication of knowledge creation and service innovation on marketing performance is missing; albeit a critical issue to understanding how knowledge creation delivers competitive advantage in a competitive environment. Building on prior research, the purpose of this study is therefore to explore the issues relating to knowledge creation, service innovation and marketing performance in the hospitality industry. This study therefore attempts to fill this missing link in the growing literature by focusing on restaurants in Ghana.

## **2 Literature review and hypothesis development**

### **2.1 Knowledge Creation**

The theory of knowledge creation depicts a firm as an entity to create knowledge actively (Nonaka, 1994; Nonaka and Konno, 1998; Nonaka and Takeuchi, 1995). According to Nonaka and Toyama (2005), knowledge creation processes in particular are important for restaurants to engage in new product development or marketing activities. Through knowledge conversion and creation, employees could utilize collective knowledge to serve customers or clients. Such tacit and explicit knowledge is relevant to market-related knowledge (Nonaka and Toyama, 2015). Focusing on knowledge creation interacted between tacit and explicit knowledge, Nonaka (1994) identified four possible knowledge creation processes: socialization, externalization, combination, and internalization. Socialization process converts tacit knowledge held by individuals into new tacit knowledge through shared experiences and joint activities such as apprenticeships or social interaction among organizational members (Nonaka, 1994). The socialization process could be extended out of the firm to learn through external networks. The community of social interaction might span organizational boundaries to include supplier, customers, distributors, and competitors through the formation of alliances or

outsourcing. Externalization articulates tacit knowledge into explicit and comprehensible forms that are more understandable to others. Externalization can be seen in the process of concept expression and triggered by metaphors, analogies, or dialogues (Nonaka, 1994; Nonaka and Takeuchi, 2019). Combination process converts explicit knowledge collected from inside or outside the organization into more complex and systematic explicit knowledge. The explicit knowledge may be embodied in action and practice. Internalization process transfers explicit knowledge into tacit knowledge. In internalization, individuals can acquire and absorb knowledge through demonstration or other means such as learning by doing and on-the-job training (Nonaka and Takeuchi, 2019; Nonaka *et al.*, 2000). According to literature, knowledge creation embodies organizational learning, knowledge inception, creative process and knowledge transformation. Knowledge when created, that individual finds a new way of doing things or developed substantive knowledge (Bose, 2004). Knowledge creation is the result of social interactions and organizational collaborations (Alavi and Leidner, 2001).

## **2.2 Service Innovation**

Service innovation has been considered as the introduction of new or improved processes, products or services based on new scientific or technology knowledge and/or organizational know-how (Casidy *et al.*, 2020; Skålén *et al.*, 2015). There are different types of service innovation in business (Randhawa, & Scerri, 2015) which are related to new services, new production processes, new marketing techniques, and new organizational or managerial structures. Service innovation may also involve technology, intellectual property, business, or physical activity (Sundbo, 2003). Service innovation can also be explained as a process in which the organization creates and defines problems and then actively cultivates new knowledge to solve them (Nonaka 1994). According to Matthyssens *et al.* (2006), restaurants can compete in the global markets by using their resources to offer services that enhance the value of their offerings (product/service), which can in turn lead to competitive advantages. Due to the high competition, restaurants are recognizing the importance of service innovation. According to literature, service innovation is closely related to a change in focus from transactions to customer relationships (Oliva and Kallenberg, 2003; Brax, 2005; Neu and Brown, 2008). Hence many restaurants are developing their service offerings; particularly the emphasize of consumption experiences as involving fun, feeling and fantasy, in order to fulfill customer wants and needs in the modern era (Mathieu, 2001; Gebauer, 2007). Firms that extend their offering to include services, rather than just products, move from an incomplete offering in a transaction-based customer relationship that is often product focused, to a complete offering in a relational-based customer relationship (Penttinen and Palmer, 2007). Consequently, industries in the hospitality industry are developing their customer service offerings as they develop their organizations, and are striving towards an increased service orientation. As a result, customer service innovation is becoming more central.

## **2.3 Marketing performance**

One of the essential components of business performance is marketing performance. Management researchers and business practitioners have interest to discover more about marketing performance concept (Eusebio *et al.*, 2006; Nwokah and Maclayton, 2006). Marketing performance is influenced by many factors such as customer and competitor focus where the focus on both encourages firms to innovate in order to meet consumer desires and expectations (Nwokah, 2009). In addition, an attempt has been made by Morgan *et al.* (2002) to develop a framework for effective marketing performance measurement systems. A gap was

highlighted between what academics might generally provide as a normative model of marketing performance and the contextual situation in which individual businesses find themselves (Morgan *et al.*, 2002). Morgan *et al.* (2002) argued that effective marketing performance is a contingent process that changes depending on the firm's marketing strategy, corporate context and task environment. Similarly, Lamberti and Noci (2010) observed that the measurement of marketing performance has moved in three directions over the years – one of which is from financial to nonfinancial output measures. Among the nonfinancial measures, customer satisfaction and customer loyalty are the two major indicators (Clark and Ambler, 2001).

### **3 Conceptual Framework**

#### **3.1 Knowledge creation and marketing performance**

Management researchers have long recognized enterprise based knowledge as strategic resource of the firms (Grant, 2016; Hunt and Madhavaram, 2019; Teece, 2018). The capability to create and utilize knowledge enables a firm to develop sustainable competitive advantage because knowledge possesses the characteristics of heterogeneity, uniqueness, and immobility (Barney and Mackey, 2016; Grant, 2015; Zack, *et al.*, 2009; Hunt and Arnett, 2006). Previous studies have revealed the critical role of knowledge creation in the successful organizations (Kogut, *et al.*, 2019; Nonaka and Takeuchi, 2019; Hunt, 2018; Chia, 2003; Gold *et al.*, 2001). Organizations that better utilize knowledge creation process can connect knowledge in new and distinctive ways, and develop market offerings to provide value to customers (Hunt and Madhavaram, 2019; Lee and Choi, 2003; Nonaka and Konno, 1998). From the perspective of knowledge creation theory, knowledge is created through dynamic interaction between tacit and explicit knowledge in SECI process (Nonaka, 1994). Socialization process seeks to collectivize knowledge embedded in individual members. Frequently social interaction and perception help organizational members to share mental modes and experiences (Nonaka *et al.*, 2000). Employees empathize with colleagues to exchange a variety of knowledge for their work and problem-solving (Becerra-Fernandez and Sabherwal, 2014), and thus diminish communication barriers between individuals (Nonaka *et al.*, 2000). In socialization, companies can converge and amplify tacit knowledge to increase collective learning, and improve the stock of knowledge (Nonaka and Takeuchi, 2019; Nonaka *et al.*, 2014). When tacit knowledge is converted to explicit knowledge, it is easier understood by employees. Externalization facilitates employees to express images or ideas as substantial concepts and notions that are needed for new product innovation and development. The newly explicit knowledge is then integrated and disseminated at the group as well as the organizational level (Nonaka and Takeuchi, 2019; Nonaka *et al.*, 2000). Firms can use combination process to create new knowledge from existing knowledge and generate new knowledge application (Nonaka *et al.*, 2014). New knowledge and skill will enhance the firm's ability to innovate new products and services, or improve existing ones more efficiently, thereby reducing redundancies and costs (Grant, 2016; Gold *et al.*, 2001; Lee and Choi, 2003). Through internalization, knowledge is transformed into organizational memory and is actualized in practical operations such as new product development or manufacturing procedure (Nonaka *et al.*, 2014). The firm utilizes its human capital to transfer tacit knowledge, which becomes the base for further innovation and new routine (Kogut, *et al.* 2019; Nonaka *et al.*, 2014; Lee and Choi, 2003). Thus, the SECI model of knowledge creation transforms knowledge into business value and results in product innovation or process improvement (Lee and Choi, 2003; Nonaka *et al.*, 2014).

It is important to note that knowledge created through the SECI model triggers a new spiral of knowledge creation. The communities of social interaction can transcend organizational boundaries to transfer and utilize knowledge embedded in suppliers, customers, distributor, and competitors (Nonaka, 1994; Nonaka *et al.*, 2014). Such knowledge conversion enables firms to integrate emerging knowledge into its strategic development (Nonaka, 1994), and they can create new knowledge and develop new product at a lower cost and more speedily than competitors do (Droge *et al.*, 2003). Thus, knowledge creation provides an opportunity for firms to enhance efficiency and sustain competitive advantages (Chia, 2003; Nonaka *et al.*, 2014). According to the above, when firms are better at knowledge creation through SECI process, they are more inclined to achieve profit, growth and long term survival. It is believed that knowledge creation in businesses is critical because of its positive relationship with marketing performance. Thus, the study hypothesized that;

*H<sub>1</sub>: Knowledge creation will be positively related to marketing performance of restaurants*

### **3.2 Service Innovation and Marketing Performance**

Schumpeter (1934), in his classical study, established the association between a firm's level of innovation and its overall performance. Schumpeter further explain that when an enterprise introduces unique and innovative services for the first time, it faces direct competition in the industry and subsequently, gain comparatively higher margins on every sale. Over the course of time, competition and imitation may lead to the erosion of these high profits; however, enterprises that keep on creating innovative services are likely to sustain high profitability for a longer period of time. In conformance with this assertion, Wang and Wang (2012) postulated that achieving performance improvement and competitive position are the ultimate reasons for organizations to take part in innovational activities. This association between innovation and firm performance has been explored extensively from a variety of angles and there is no dearth of research in this domain (Gunday *et al.*, 2011; Camisón and Villar-López, 2014). Many scholars have put forward that innovative organizations experience growth in their profitability and market value (Jiménez-Jiménez and Sanz-Valle, 2011). Service innovation in organizations affects their quality, quantity and variety of goods and services, and may successively enhance their performance (Purcarea *et al.*, 2013). Camisón and Villar-López (2014) investigated how firm performance is affected by the frequency of new product introduction and found a positive association between the two variables. Similarly, Noruzy *et al.* (2013) stressed that when firms involve themselves in innovational activities, their overall performance gets better. The work of Jiménez-Jiménez and Sanz-Valle (2011) advocated that service sector organizations oriented towards innovation are expected to show superior levels of firm performance. In the same way, different studies have gathered evidence from diverse industries and have proposed that innovation is an essential tool for attaining a competitive edge and realizing lasting success and prosperity (Polder *et al.*, 2010; Gunday *et al.*, 2011). Hence, this discussion leads to the following hypothesis of the study:

*H<sub>2</sub>: Service Innovation positively influences marketing performance of restaurants*

### **3.3 Knowledge Creation and Service Innovation**

The creation of new knowledge is the central activity during the development of new products and services (Madhavan and Grover, 1998). Restaurants adopt processes to acquire,

disseminate, and interpret new information and learn about their customers' needs and preferences (Jaworski and Kohli, 1993). They frequently build enduring relationships with customers – the buyers of their current and future products – to obtain such information. The interaction with customers across different stages of the innovation project improves the speed and effectiveness of the new product development process (Carbonell *et al.*, 2009) and the success of resultant new services and products (Gruner and Homburg, 2000).

Because customers cannot always imagine and express their needs, restaurants must develop a proactive approach to learn about latent needs (Narver *et al.*, 2004). Such needs emerge slowly and enter people's consciousness only when users experience various situations and encounter difficulties during their daily tasks (Kristensson *et al.*, 2008). Especially in turbulent market environments with nonlinear and unpredictable changes, formal, longwinded processes to understand customers' preferences become too inflexible and slow to adapt (Eisenhardt and Martin, 2000). Customers' needs are often unclear in the beginning of the development process and change continuously, which makes it impossible to establish them conclusively. Instead of formal and detailed analytical processes, restaurants require simple and experiential routines that can create new knowledge about any specific situation (Eisenhardt and Martin, 2000). Such knowledge creation can also be amplified if the restaurant includes more and carefully selected customers (Morrison *et al.*, 2004; von Hippel, 2005; Magnusson, 2009). Typically, innovative organizations focus on both new knowledge and knowledge processes. They constantly engage and motivate people, creating overall enabling context for knowledge creation. These organizations take a strategic view of knowledge, formulate knowledge visions, tear down knowledge barriers, develop new corporate values and trust, catalyze and coordinate knowledge creation, manage various contexts involved, develop conversational culture, and globalize local knowledge (Nonaka and Nishiguchi, 2001). It is therefore hypothesized that

*H<sub>3</sub>: There is a positive relationship between knowledge creation and service innovation of restaurants.*

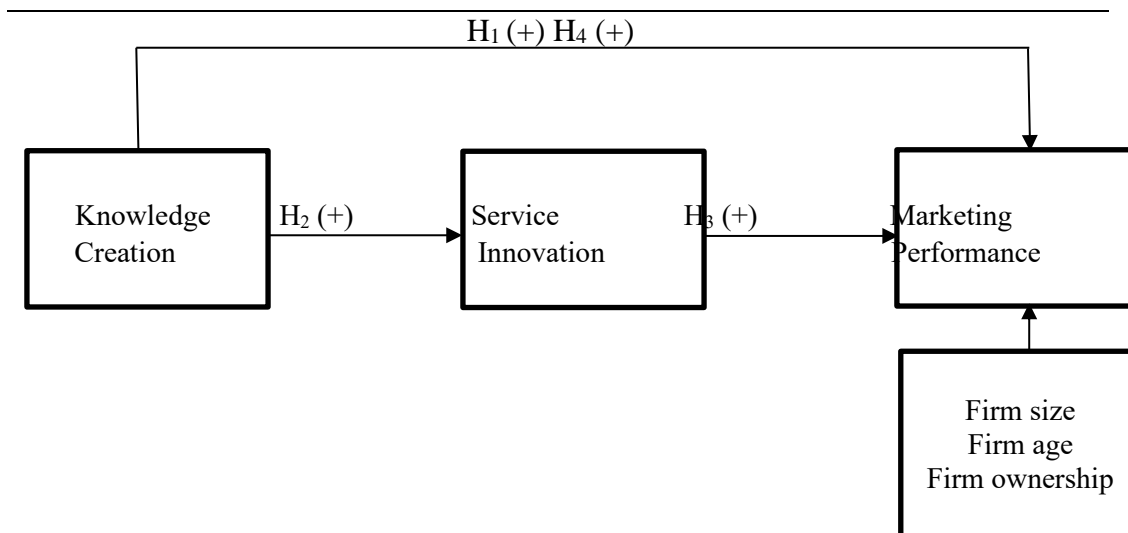
### **3.4 Mediating Role of Service Innovation**

Previous studies have confirmed that knowledge creation impacts marketing performance of firms positively (Mehralian *et al.*, 2018; Sujatha and Krishnaveni, 2018; Laeeque *et al.*, 2017). Essentially, a seemingly countless number of studies have examined the role of service innovation in influencing organizational performance-related outcomes (Nguyen *et al.*, 2016; Jiménez-Jiménez and Sanz-Valle, 2011; Hung *et al.*, 2011). However, to date, the concepts of knowledge creation, service innovation and marketing performance have hardly been examined together in a single study. While few studies have addressed the relationship between knowledge creation and service innovation (Esterhuizen *et al.*, 2012; Kuo, 2011; Yang, 2010), none has ever attempted look into the mediating effects of service innovation on the relationship between knowledge creation and marketing performance of restaurants. Research has shown that knowledge creation provides the required measurable materials for service innovation in the form of unique information, new understandings, diverse viewpoints, improved creativity, teamwork, collaborations with third parties, and continuous learning (Quintane *et al.*, 2011; Sankowska, 2013). When enterprises lack these essentials, efforts to carry out innovations are challenge and, as a result of this, enhancement of performance and achievement of strategic advantage also becomes a challenge (Nonaka and Takeuchi, 2019; Du Plessis, 2007). Hence, based on this argument, it is suggested that service innovation exhibits a

mediating function in the relationship between knowledge creation and marketing performance of restaurants. This mediating effects is therefore hypothesized as:

*H<sub>4</sub>: Service innovation positively mediates the relationship between knowledge creation and marketing performance of restaurants.*

### Conceptual Framework



## 4 Methodology

### 4.1 Sampling and Sampling Issues

The target population of the study entails all restaurants in Ghana. For the purposes of this study a sample of 200 restaurants are sampled concentrating on restaurants in Kumasi Metropolis. The non-probability sampling technique was employed in selecting the respondents, specifically, the convenient sampling technique. Convenience sampling is usually employed when the researcher selects the case based on the availability and willingness of the respondent to offer responses to the research questions. Selection is not based on any prior standardization or criteria used. That is no prior arrangements are made about who are to be comprised in the sample so any restaurant unit that was available when the study was being conducted was selected. This sampling technique has been widely applied in similar studies on Ghana. The convenience sampling was used because of the difficulty of acquiring a full list of all the restaurants in Kumasi Metropolis. Again because of the nature of work it was often found that most of the restaurant owners were busy or found it difficult to release information concerning their business operations. Conducting the survey for the study involved the use of questionnaire. The survey was to gather information to answer the research questions for the study and in this line, the research questionnaire was designed to meet just that. A Likert scale was used to design the questionnaire. In this, respondents had the opportunity to respond from options ranging from strongly agree to strongly disagree.

Meanwhile because this research focused on organizational level unit of analysis; all the information required concerning operations of the restaurants as an organizational unit. However, because the owners or managers of the restaurants were expected to be most conversant with the information concerning the restaurants; it was prudent that these group of persons become the key respondents to this survey; as they possessed the relevant information

critical to answering the research questions. Respondents of executive or managerial role were very vital to this work because they were seen as the key people within restaurant that possessed the relevant information concerning the strategic operations and general environmental conditions on which the restaurant operated. The data gathered was carefully and thoroughly scrutinized to make concrete generalizations. The data was coded in to the Statistical Package for Social Sciences (SPSS) software. Quantitative data analysis techniques were employed for this work. The analysis therefore employed the multiple regression technique, correlation analysis and other descriptive statistics to arrive at the study findings. The work primarily focused on the activities of the activities of small scale restaurants in the informal sector in the Kumasi Metropolis.

#### **4.2 Measures**

**Knowledge creation process:** This study used a five-point scale based on previous research (see; Sabherwal and Becerra-Fernandez, 2013), to measure knowledge creation construct. The four dimensions of knowledge creation process existing in literature include socialization, externalization, combination, and internalization (Nonaka, 1994; Nonaka *et al.*, 2014; Sabherwal & Becerra-Fernandez, 2013). The four dimensions (SECI) together produce 16 items in previous research. However, after careful analysis of previous studies and especially the correlations estimates of the four dimensions, 5 items were generated to measure knowledge creation for the current study.

**Service innovation.** The scale consisted of 6 items that measured the influence of service innovation based on Agyapong *et al.* (2016) and Kankam-Kankam *et al.* (2020) construct used in similar studies. The items included the capacity to apply appropriate processes to service; ability to adapt service and process to meet future needs; ability to respond to unexpected opportunities; skills in offering a service; ability to support and drive innovation in the restaurant industry.

**Marketing performance:** This study was based on the work of Ramani and Kumar (2008) to measure marketing performance constructs with two dimensions: customer profit performance and customer relational performance. The respondents rated the marketing performance of the restaurants on a five-point scale in relation to knowledge creation and service innovations. Five (5) items were used to measure marketing performance; customer satisfaction, customer ownership, positive word of mouth, acquisition and retention of profitable customers, and conversion of unprofitable customers to profitable ones (Brown *et al.*, 2005; Newell *et al.*, 2003).

**Control variables.** For the purposes of effectively measuring the marketing performance of the restaurant industry the study identified organizational based factors that have the capacity to influence the outcome of performance indicators. The study therefore controlled for firm characteristics such as size of the restaurant which was measured as the total number of employees (Donkor *et al.*, 2018). The period or years the restaurant has operated (firm age) (Kankam-Kwarteng *et al.*, 2019) and the nature of ownership of the participated restaurants (firm ownership) (Pervan *et al.*, 2012) was also added as control variables in the study model.

## 5 Results

As part of the process of gathering the relevant information for this study, it was also appropriate to acquire demographic information concerning the respondents and their business. The demographic information of the respondents acquired included the job position, gender, and the respondents' age. Similarly, information specifying the size of the restaurant (measured by the number of employees), and the firm age (measured by the number of years the restaurant has been in existence). Table I gives a report the demographic characteristics of the respondents and sampled restaurants respectively. As presented on Table I, it is realized that most of the study respondents were males (55%), with female representing 45%. The report therefore suggested a fairly good gender distribution. The majority of the respondents were also observed to be both front desk executives (50%) and managers (50%). Concerning the age of the study respondents, reports indicate that majority of the respondent were within the economically active age groups. It was however observed that majority were within the ages of 25-35 years (50%). With reference to the age of firms, it was detected that most of the restaurants had existed for less than 10years (95.0%) and the majority of the restaurants have being family owned (65%).

**Table I: Respondent Profile**

Respondent		Frequency	Percentage (%)
Gender	Male	110	55
	Female	90	45
	Total	200	100
Position of respondent	Front Desk Executive	100	50
	Manager	100	40
	Total	200	100
Age of respondent	Less than 25	20	10
	25 to 34	100	50
	35 and above	80	30
	Total	200	100
Firm Age	1 to 4 years	90	45
	5 to 9 years	100	50
	10 years and above	10	5
	Total	200	100
Ownership	Family Business	130	65
	Non-Family	70	35
	Total	200	100

### 5.1 Reliability and Validity Test of Instruments

Following the presentation of the demographic characteristics of the firm as well as respondents, the validity and reliability of the research instrument and measurement scales were checked. Based on the study's conceptual framework, three principal constructs were posited to be used for the study analysis. This involved service innovation, knowledge creation and service innovation. All the constructs were captured by representative items adopted from other scholarly works. The confirmatory factor analysis was employed to test whether the constructs are robust using the maximum likelihood estimation process. As reported on Table II, the reliability of the measurement scales was assured given the values for composite reliability and

Cronbach's alpha coefficients. It is observed that all the Cronbach's alpha values were high and above 0.7 which is the statistically recommended value. This imposes that responses obtained for each construct were internally consistent and provide a reliable measure. To cross examine the reliability of the scales, the composite reliability values are also expected to be high and above 0.7. As observed on Table II, there is no reason to doubt the reliability of the measurement scales; as all the composite reliability coefficients were statistically higher than the recommended value of 0.7.

To examine the validity of the scales, literature recommends investigating if the scales achieve convergent validity and discriminant validity simultaneously. Convergent validity tests items that are expected to be related are in fact related whereas discriminant validity examines that measures that are expected not to be related are indeed not related. According to Hair *et al.* (2012), convergent validity is vital to ensure that the items used to measure the respective latent constructs measured exactly what they were purposed to measure. Convergent validity was examined by making sure that first, only the items that loaded significantly on their respective constructs were retained. Only the items with factor loadings in excess of 0.6 were retained. At the end of the purification process, 4 items were retained for evaluating customer service innovation and 5 items for evaluating knowledge creation. Marketing performance was on the other hand evaluated using 5 items. Furthermore, discriminant validity of the study instrument was also examined. Discriminant validity was examined by checking if the square root of the AVE scores of each construct is significantly higher than the maximum shared variance of the construct with other constructs, (see; Hair *et al.*, 2012).

**Table II: Reliability and Validity Test Results**

Construct	Items	Loadings	AVE	CR	CA	MSV
Service Innovation	Item SI 1	0.800	.531	.770	.735	.406
	Item SI 2	0.603				
	Item SI 3	0.768				
	Item SI 4	0.808				
Knowledge Creation	Item KC 1	0.826	.665	.907	.872	.171
	Item KC 2	0.944				
	Item KC 3	0.888				
	Item KC 4	0.672				
	Item KC 5	0.716				
Marketing Performance	Item MP 1	0.876	.688	.916	.888	.166
	Item MP 2	0.740				
	Item MP 3	0.921				
	Item MP 4	0.859				
	Item MP 5	0.734				

Note: CA = Cronbach's Alpha, CR = Composite Reliability; AVE = Average Variance Extracted; M.S.V = Highest Shared Variance

It is also important that the AVE scores are above the acceptable threshold of 0.5. As shown on Table II, the computed AVE scores were also all above .50 indicating the meeting of the acceptability level given by Hair *et al.* (2012). The maximum shared variances of each of the pair of constructs were lower than the square root of the AVEs and hence suggesting sufficient level of discriminant validity (Hair *et al.*, 2012).

## 5.2 Hypotheses Testing and Multiple Regression Results

Having obtained robust measures for the study constructs, the test of hypotheses was evaluated using the structural equation method. The multiple linear regression method has widely been used to examine mediating and moderating effects (see for instance, Acquah, 2010). The initial section of the quantitative analysis is presented focusing the descriptive statistics of the variables of interest. As Table 4.3 shows, the level of knowledge creation among the sampled restaurants is moderate. This is illustrated by the mean score obtained for knowledge creation (mean = 4.86; SD = 0.788;  $p < 5\%$ ). The implication is that knowledge creation is not a rampart exercise among the sampled firms. Notwithstanding, it is noted that the pursuit of innovative practices among the sampled firms is high. Customer service innovation (mean = 5.988, SD = 0.331) was perceived to be high among the sampled restaurants. This could be due to several reasons including market competition, demand for innovative services by clients and investments. The existence of imperfect market structures with fragile market supporting institutions and contract-enforcing mechanisms pose as serious constraints to the acquisition of resources, (Acquah, 2011). Consequent to this, restaurants who driven to improve, adapt and create new products and services that are relevant to customers; whilst controlling overhead costs.

**Table III: Descriptive Statistics**

Constructs	Mean	Median	Std. Dev	Min	Max
Service Innovation	5.988	6.000	0.331	4.500	6.830
Knowledge Creation	4.874	4.75	0.788	3.200	7.000
Marketing Performance	6.060	6.100	0.268	5.000	6.800

To test the hypothesized relationship between the constructs (service innovation, knowledge creation and marketing performance), the Hayes process multiple linear regression method for testing mediating effect was employed. The analysis involved three (3) interconnected models. The first set of the regression analysis involved the examination of the direct relationship between knowledge creation and marketing performance. The size of the restaurant, age and ownership were used as firm-specific control variables. The diagnostic test results show that the model was good and appropriate. This is demonstrated by the significance of the F-statistics and the values of the Durbin Watson (DW) as well as the R-squares (see Table IV below). For model 1, the result showed that firm size ( $\beta = .378$ ,  $p < 1\%$ ) and ownership ( $\beta = .215$ ,  $p < 5\%$ ) have a positive and significant influence on marketing performance. More importantly it was revealed that there is positive and significant relationship between knowledge creation and marketing performance ( $\beta = .358$ ,  $p < 1\%$ ). Thus hypothesis ( $H_2$ ) is supported. As part of the process to establish mediation relationship; it was pertinent to ascertain the relationship between knowledge creation and service innovation, as suggested by Preacher and Hayes (2008). This necessitated the estimation of model 2. As performed in the estimation of model 1, the analysis involved controlling for the effect of the age of the restaurant, its size and the ownership type. The diagnostic test results again show a strong model. This is demonstrated by the significance of the F-statistics and the values of the Durbin Watson (DW) as well as the R-squares (see Table IV). The results indicated that firm age ( $\beta = .280$ ,  $p < 1\%$ ) and ownership ( $\beta = .177$ ,  $p < 5\%$ ) have a positive and significant influence on service innovation. Similarly, it was discovered that knowledge creation has a positive and significant effect on marketing performance ( $\beta = .249$ ,  $p < 5\%$ ). Thus hypothesis ( $H_1$ ) is also supported. The final section of the mediation analysis is to explore the effect of knowledge creation on marketing performance

whiles controlling for service innovation (see Preacher and Hayes, 2008). According to literature, mediation is established if the inclusion of service innovation leads to a reduction in the effect size of the dimensions of knowledge creation such as their effect is brought to zero (for full mediation) or reduced but still significant (for partial mediation). It was observed that service innovation has a strong positive influence on marketing performance ( $\beta = .343, p < 1\%$ ); thereby providing support for hypothesis ( $H_3$ ). It is also found out that the effect of knowledge creation on marketing performance is positive but insignificant ( $\beta = .134, p > 10\%$ , *ns*) when service innovation is controlled in the analysis. Thus there is a significant reduction in the effect of knowledge creation on marketing performance after controlling for service innovation. This indicates that service innovation plays a full mediating role in the relationship between knowledge creation and marketing performance.

**Table IV Regression Analysis Results**

	Performance (MP)	Service innovation	Performance (MP)	VIFs
-Ownership type	.215 (2.224)**	.177 (1.749)*	.215 (2.224)**	1.124
-Firm age	-.177 (-1.427)	.280 (2.145)**	-.177 (-1.427)	1.958
-Firm Size	.378 (2.987)***	-.095 (-.714)	.378 (2.987)***	2.022
-Knowledge Creation (KC)	.221 (3.032)***	.226 (2.699)***	.134 (1.448)	1.492
-Service Innovation (SI)			.343 (3.099)***	2.165
<b>R<sup>2</sup></b>	.185	.103	.185	
<b>Adjusted R<sup>2</sup></b>	.141	.055	.141	
<b>F-statistics (DF)</b>	4.262 (99)**	2.155 (99)*	4.262 (99)**	

Note: t-values are in the parenthesis; \*  $p < .05$ ; \*\*  $p < .01$ .

VIFs – variance inflation factors

**Table V: Mediation analysis: (direct and indirect effects assessment)**

Path Relationship	Unstandardized $\beta$ s			Form of mediation
	Direct effect (D)	Indirect effect (I)	VAF	
KC ---> SI ----> MP	.221	.343*.226 = .0775	39.4%	Full

The indirect effect of knowledge creation on marketing performance through innovation is consequently using the Sobel test procedure as recommended by Preacher and Hayes (2008). It can be observed that the Sobel test indicate a significant indirect effect of knowledge creation on marketing performance through service innovation ( $\beta = 0.078, Z = 4.960, p < 1\%$ ). This indicates that service innovation plays a complete mediating role in the relationship between knowledge creation and marketing performance of restaurants. Thus hypothesis ( $H_4$ ) is supported.

## 6 Discussion of results

A critical question bothering the minds of academicians concerns how to measure the results of effective knowledge management on organizational outcomes. It has been argued that prudent knowledge management is essential to build innovation and consequently firm

performance; however not much empirical investigation has been conducted to explore these relationships; particularly in the hospitality industry. In an attempt to fill this lacuna, this study explored the causal relationships between knowledge creation, service innovation and marketing performance. A total of 200 restaurants were sampled for the study. Using survey instruments, the study sought to ascertain the level of involvement of the sampled restaurants concerning the level of knowledge creation, and how they affect the service innovativeness and its marketing performance. The Hayes process multiple linear regression technique was applied to ascertain the relationship between the study variables while controlling for some firm specific variables. The findings of the study show that knowledge creation is a significant contributor to marketing performance of restaurants.

This is consistent with the conclusions of Liu and Abdalla (2013) and Haney (2006) who noted that knowledge management adoption has a positive influence on firm performance. Meanwhile, the results of the study reveal that aside its importance to increasing firm performance; knowledge creation is also essential to service innovation. Nanaka and Nishiguchi, (2001) stressed that service innovation is the major outcome of effective knowledge management. According to Hunt and Madhavaram (2014) by exploring both new knowledge and knowledge processes, innovative organizations can constantly engage and motivate people, creating overall enabling context for knowledge creation. These organizations take a strategic view of knowledge, formulate knowledge visions, tear down knowledge barriers, develop new corporate values and trust, catalyze and coordinate knowledge creation, manage various contexts involved, develop intimate culture, and globalize local knowledge. Thus significantly, by focusing on knowledge creation, innovative enterprises in the hospitality industry especially restaurants are able to improve the level of innovativeness and thereby enhance their marketing performance. Besides, when a company devises a strategy and sets policies that protect the application of knowledge (Velu, 2015) that company can obtain high standard of knowledge and innovation, which result in improved performance (Chesbrough and Bogers, 2014). Furthermore, the findings of this study suggest that service innovation may act as mediator in the linkage between knowledge creation and marketing performance. This result is consistent with the findings of Nawab *et al.* (2015) and Alrubaiee *et al.* (2015) who found that knowledge management processes have an indirect significant impact on business performance through innovation in banking industry. The findings of this study emphasize the need for management to focus on knowledge management processes and innovation in the strategic policies towards enhancing marketing performance.

### **6.1 Implication for theory and practice**

This study provides certain important implications for theory and practice. First, organizations should cultivate a culture conducive to learning new skills, capacities and concepts is essential to create more knowledge and be innovative. Organizational Learning environment generate favorable conditions for the employees to generate, circulate and implement tasks with knowledge, and acquire and reacquire new class of skills. Learning culture supports providing both external and in-house skills to employees. This impacts new skills in employees, enhances the competencies of employees, and consequently enlarges the knowledgebase and innovation abilities of the enterprise. Second, business manager should support knowledge creation and provide an agenda for enterprise innovativeness. They should guide marketing executives in determining the manner through which knowledge can be generated, acquired, circulated and used. Through their actions and speech, business executives should encourage employees to enthusiastically exert their time and efforts in creating

knowledge. Managers should tactically put together the tasks that ensure and facilitate creation and growth of new knowledge, support its application, and encourage its circulation within the entity. Significantly, to support innovativeness, organization managers should cultivate a climate of learning by action.

They should be tolerant towards mistakes and should consider them as learning opportunities. Third, enterprises in the restaurant industry should create or recreate their operational system in a way that it contributes to knowledge creation and service innovation and marketing performance. An enterprise structure should be framed such that it generate the frequency of interaction among employees; provides prospects for knowledge acquisition, circulation and usage; allows analytical solutions to challenges; quickens implementation of innovation; and advances the effectiveness and efficiency of the implementation of news.

### **6.2 Limitations and suggestion for Future Research**

Regardless of the positive findings of this paper, this study has certain limitations. First, the sample was relatively homogenous as it consisted largely of restaurant operators from the Kumasi metropolis. Moreover, same sample provided the information regarding each variable, and that too, without any time lag. All this might have led to common-method variance and reduced generalizability of findings. In future, researchers should consider studying heterogeneous participants representing dissimilar sectors so that different assumptions could be captured and increase the generalizability of the study findings. Second, knowledge creation and service innovation can be influenced by organizational culture, however, this study failed to recognized organizational culture as a critical variable. Future research should investigate the interaction effect of organizational culture on this hypothesized model. Third, essential variables, including organizational structure, leadership styles, corporate objective and human resource practices, have been found to significantly affect knowledge creation, service innovation and marketing performance, however, these variable were not included or controlled in the current research. Future studies should examine their effects to yield more diverse findings. Last, participants' assumptions concerning service innovation operations and marketing performance were measured subjectively. Future research should measure them more objectively by applying secondary or available existing data, such as the organizational reports and industry publications.

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