EXAMINING THE RELATIONSHIP BETWEEN TACIT KNOWLEDGE OF INDIVIDUALS AND CUSTOMER SATISFACTION

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ABSTRACT

This research is focused on testing empirical relationship between individual-tacit knowledge and customer satisfaction in the telecommunication industry. Data was gathered using a mixed method research approach. This involved the use of structured and semi-structured questionnaire from 186 managers and other administrative & technical employees and 519 customers of the four major firms in the Global System for Mobile Communication (GSM) sub-market of Nigeria's telecommunications industry. Descriptive statistics, Correlation, Regression, T-Test and thematic analysis was carried to test the hypothesis for this research study. The findings showed a significant relationship between individual-tacit knowledge and customer satisfaction. Customers' level of satisfaction was also found to be significant but with the respondents' views not in total agreement with one another. The study recommended that managers in the telecommunication industry can enhance the organisation's customer satisfaction objective by encouraging employees to regularly document their experiences about their most prominent challenges encountered on the job.

Keywords: Individual-Tacit Knowledge, Organisational Knowledge, Customer Satisfaction, Telecommunication, Knowledge Management.

INTRODUCTION

Since Polanyi (1967) introduced the concept, tacit knowledge has increasingly gained attention from both researchers and practitioners in different fields. Tacit knowledge is one which the possessor is often quiet unconscious about, because it is built from experience and is difficult to transmit and express in plain language (Chilton and Bloodgood, 2007). According to Smith (2001) tacit knowledge is personalized knowledge to organizational members especially when high-level strategic problems are involved such as handling uncommon customer queries which the firm's information bank cannot readily answer. Identification of tacit knowledge in individuals is based on their perception of issues, value systems, emotional responsiveness and the actions they take at given times.

The authenticity of measuring tacit knowledge spreads across many fields of specialization, such as: Project execution/management (Anand, Ward and Tatikonda, 2010); informatics (Kurti, 2011); in knowledge intensive industries (Harlow, 2008) and so on. Individual-tacit knowledge can be captured based on skill/expertise, experience and attitude (Fei, Chen & Chen, 2009). Alony, Whymark and Jones (2007) observed that most practices of film

making and directing in the Australian Film industry is basically guided by tacit knowledge. In another study of the software industry, Ryan and O'Connor (2013) explained that tacit knowledge is essential for high-performing teams' effectiveness. Effectiveness here is determined by their ability to develop new products that satisfy customer requirements.

According to Gebert, Geib, Kolbe and Brenner (2003) and Guchait, Namasivayam and Lei (2010) the influence of organizational knowledge on customer satisfaction can be explained by the capability of employees and management of the organization to build relationship with customers. In their view, establishing relationships with customers can help the organization develop a database that serve as reference to customer queries when needed. So, managing customer relationship has been viewed as a strategic pathway to achieving customer loyalty and retention (Suraj and Bontis, 2012). However, this school of thought has not adequately explained individual's tacit knowledge, in the form of experience and skill, as a means of resolving unexpected customers' challenges that require on-the-spot solutions. For example, in the telecommunications industry where customers go through the firm's on-line knowledge base and yet cannot get their problems resolved, calling a direct attendant in the customer care becomes the last resort. Where the firm's attendant lacks the required problem-solving skill and knowledge regarding the customers' questions, an outcome of customer dissatisfaction might occur. Therefore, there is still a gap in literature regarding the relationship between individuals'-tacit knowledge, as a part of the firm's knowledge resource and customer satisfaction.

LITERATURE REVIEW

Theoretical Background

Human cognitive processes have been identified as important elements in the transformation of information to organizational knowledge (Jeong, Chang and Ribarsky, 2008). Davenport and Prusak (1998) describe knowledge as "a fluid mix of framed experience, contextual information, values and expert insight that provides a framework for evaluating and incorporating new experiences and information." This position identifies human perceptions, experiences and mental framework as major elements that define the scope of how information translates into knowledge. Nonaka and Toyama (2003) identified that a major characteristic of organizational knowledge is that it is created as human engage in relationships. Its survival and continuous existence is ensured as it is disseminated and exchanged among a significant number of persons and across circumstances (Abhary, Adriansen, Begovac, Djukic, Qin, Spuzic, Wood and Xing, 2009). Kongpichayanond (2009) asserted that although there exist several classification of organizational knowledge, the most frequently investigated classification is tacit and explicit knowledge.
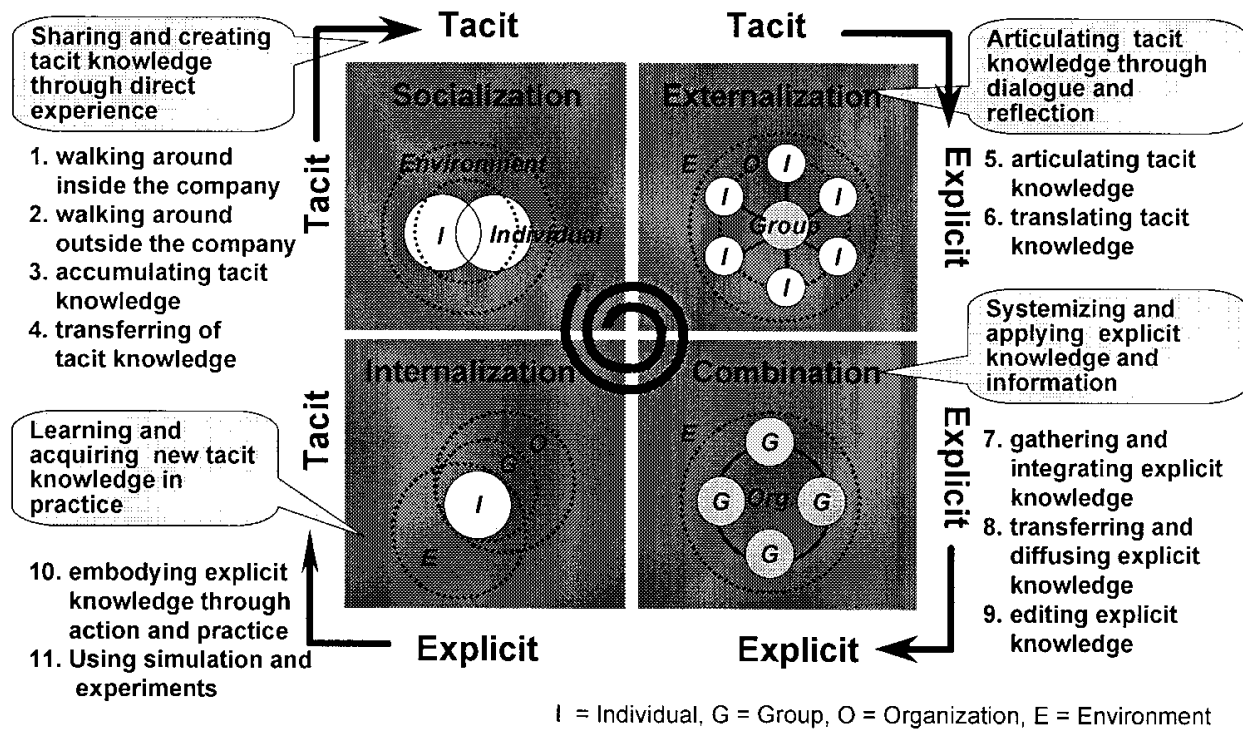
Individual knowledge is the capacity of organizational members to use their personal experiences, values, believes and discretions to analyze their organizational environment and enhance performance (Cecez-Kecmanovic, Jerram, Treleaven and Sykes, 2002). Bhatt (2002) suggested that the need for individuals and not just group, knowledge to be utilized in the workplace is evidenced by the prevailing dynamism that characterizes the business environment. In this view, individuals are believed to be confronted with situations that are dynamic and challenging, such that organizational routines and procedures might not be capable to speedily provide solutions to the dynamic situations confronting customers. However, the importance of organizational culture in guiding and enhancing the use of individual knowledge was also mentioned.

Tacit and Explicit Knowledge Sharing in Organisations

Resulting from the possibilities of experts and professionals leaving the firm, management science scholars consider it necessary that firms should have a strategy in place that can capture and retain knowledge from these experts. Knowledge management practices have thus become a common means through which organisational managers' capture and share valuable knowledge from and among organisational members. Knowledge management, according to Halawi, Aronson and McCarthy (2005), is the deliberate attempt of the firm to use processes, structures and technology to capture or generate, store and retrieve knowledge of organisational members for the actualization of organisational objectives. Knowledge management ensures that the right knowledge to execute and achieve organisational strategies and objectives are made available to the right employees through the practice of knowledge sharing or transfer. However, knowledge management can only create competitive performance for the organisation when it is modelled to fit the organisational context (Zheng, Yang & McLean, 2010). This implies that organisations' knowledge management technologies would differ depending on their strategy, culture and structural peculiarities. It is important to state that although several authors have discussed the knowledge management, sharing and transfer as independent concepts, there is a strong interconnection that tie them together (Alavi & Leidner, 2001).

In a bid to achieve knowledge retention in the organisation, the subject of knowledge sharing has become one of strategic concern for strategic management scholars and practitioners (Lawson, Petersen, Cousins & Handfield, 2009). Knowledge sharing is the process of acquiring, adapting and transferring expert knowledge from experienced professional members of the organisation to other members of the firm for the purpose of achieving organisational objectives (Ngah & Jusoff, 2009). According to Bhirud, Rodrigues and Desai (2005) organisations are increasingly appreciating the practice of knowledge sharing because knowledge shared increases the value of such knowledge. However, the major challenge facing most organisations relates to how they can go about motivating organisational members to share their knowledge (Gupta, Iyer & Aronso 2000; Quigley, Tesluk, Locke & Bartol, 2007). This is a major area of concern, especially since it has been shown that shared value among organisational members does not necessarily enhance their willingness for knowledge sharing (Yang & Farn, 2009). Therefore, in order to achieve maximum benefits for the organisation, managers should ensure proper management of the knowledge sharing process, such that employees who have agreed to share their knowledge would not become discouraged at some latter time.

Managing the knowledge sharing process involve identifying the two common steams of knowledge that exist in organisations. It was Polanyi (1958) who first identified and explained the comprehensive classification of organisational knowledge to include tacit and explicit knowledge. Since then organisational science scholars, such as Nonaka (1994) have proposed the SECI model that attempted to examine knowledge creation and sharing within organisational based on how knowledge continuously flows between the tacit and explicit interactions. In their view of the SECI model tacit and explicit knowledge can be shared through the processes of socialization, externalization, internalization and combination, at the different points within the spiral of knowledge. Based on these conceptualizations recent scholars have advanced reasoning about managing the knowledge sharing processes in organisations (Erden, von Krogh & Nonaka, 2008).

Sharing and creating tacit knowledge through direct experience

1. walking around inside the company
2. walking around outside the company
3. accumulating tacit knowledge
4. transferring of tacit knowledge

Learning and acquiring new tacit knowledge in practice

10. embodying explicit knowledge through action and practice
11. Using simulation and experiments

Articulating tacit knowledge through dialogue and reflection

5. articulating tacit knowledge
6. translating tacit knowledge

Systemizing and applying explicit knowledge and information

7. gathering and integrating explicit knowledge
8. transferring and diffusing explicit knowledge
9. editing explicit knowledge

I = Individual, G = Group, O = Organization, E = Environment

Source: Nonaka & Toyama (2003)

FIGURE 1
ORGANISATIONAL KNOWLEDGE CREATION AND SHARING MODEL

Socialisation is the process of converting tacit knowledge among organisational members through social interactions. It is considered to be greatly important to the organisation because it involves knowledge at the individual level. As such, knowledge sharing always occurs from one individual to the other and largely depends on the rate at which the learner is able to partake in the experiences of the knowledge possessor (Nonaka & Toyama, 2003). Tacit knowledge sharing through the socialisation process is commonly displayed through observations and imitation that occur when apprentices learn from the experiences and skilfulness of their masters. Apprentices are not often exposed to spoken words of guidance and written materials from their masters, rather they are made to learn and acquire knowledge by observing and practicing. Organisational members also gain tacit knowledge from relationships that they maintain with customers and suppliers (Gberevbie, 2010).

Externalisation is the process of converting tacit knowledge to explicit knowledge among organisational members. The purpose for externalising tacit knowledge is to enhance accessibility of such knowledge by other members of the organisation. Nonaka & Toyama (2003) observed that using dialogues with holders of tacit knowledge is a viable means to articulate and document their tacit knowledge in explicit forms. However, regardless of the efforts put in by managers to transform tacit to explicit knowledge, Smith (2001) opined that only about twenty percent of all knowledge that exists in the organisation is actually utilized. According to Bratianu & Orzea (2010) organisational managers can enhance the knowledge externalization process through education and motivation of employees. They emphasized that tacit knowledge holders are always particular about a justification for sharing their knowledge through the transformation of their tacit knowledge into explicit forms.

Combination is the process of gathering explicit knowledge from within and outside the organisation and the processing of same to suit the organisation's purpose. Fernhaber, Mcdougall-Covin and Shepherd (2009) opined that organisations use combinative method of knowledge sharing and transfer through alliance partnerships and networking with other organisations. In order to gain from a newly established relationship of knowledge sharing, they established that organisations should enhance their absorptive capacity, that is, the extent to which an organisation is able to assimilate and develop new knowledge. According to Zahra and George (2002), absorptive capacity is developed through prior experiences and putting in place of relevant knowledge facilitators, for example information technology that aid learning and knowledge storage. This implies that organisations can either gain or lose in the combination process of explicit-to-explicit knowledge sharing and transfer process, depending on their existing knowledge capability (Nielsen, 2005). Bratianu and Orzea (2010) opined that knowledge sharing during combination can only occur from a higher order of knowing to a lower level of knowing. Such that, there is no knowledge transfer when an organisational member brings knowledge that a recipient is already aware of.

Internalisation is the process of individuals in the organisation converting the explicit knowledge that have been transmitted into tacit knowledge. According to Nonaka and Toyama (2003), internalisation occurs through individual's practical engagement with explicit knowledge such that as they adapt to and with the explicit knowledge, it becomes highly personalized. The process of individual employees, adapting explicit knowledge in innovative ways to organisational tasks makes it to develop into tacit knowledge that becomes an individual asset. The internalisation of knowledge demands a continuous process of commitment to practice and experimentation with existing explicit knowledge to create new knowledge; in some cases the new knowledge might need to disrupt the old knowledge to enlarge the individual's knowledge absorptive capacity and learning experience.

In a study that examined the effect of multiple dimensions of motivation on knowledge sharing, Quigley, Tesluk, Locke and Bartol (2007) observed that incentives alone have a weak influence on employees' willingness to share knowledge but with the interaction of norms relating to providers' willingness to share knowledge and the receivers' perception of relevance of the knowledge, a stronger relationship was found between incentives and knowledge sharing practices. In another study, Choi, Lee and Yoo (2010) found that team performance is not simply enhanced just because of knowledge sharing practices. They opined that the application of the knowledge shared was important for team performance to be improved. Thus, the engagement of transactive memory systems (TMS) and information technology in organisations must be such that the knowledge acquired from team interactions during project execution should be relevant to the needs of the tasks and enhance their ability to apply the shared knowledge to the need at hand. Besides all these, Yang and Farn (2009) suggested that management of organisations can motivate experts to share knowledge by ensuring that opportunities and resources are established within the system to facilitate this purpose.

Organizational Knowledge and Customer Satisfaction

Customer satisfaction occupies an important position in the organization's drive for success (Ilieska, 2011). Satisfying their unique needs require that management understand what makes each category of customer distinct, establishing and sustaining relationship with them and maintaining a knowledge system that aids problem-solving. Within the Marketing literature, the influence of organizational knowledge over customer experience and by extension their loyalty

has been predicted (Chakravorti, 2011). There are also indications from Moses (2013) that a sound knowledge based culture would enhance organizational ability to compete in its product based market. Some existing literature, such as Gebert, Geib, Kolbe & Brenner (2003) and Guchait, Namasivayam and Lei (2010) view the firm's customer satisfaction objective from a relationship building perspective. In this sense, they argue that knowledge gained from customers and included into the firm's knowledge management system will facilitate the design of products and services to achieve customer satisfaction (Bose & Sugumaran, 2003). They also suggest that possessing knowledge about customers (such as knowledge about their histories, motives and social preferences) will be necessary in creating value adding products and services that enhance customer satisfaction (Gibbert, Leibold & Probst, 2002).

Knowledge-Based Customer Satisfaction in Telecommunication Industry

In recognition of the strategic role of customers towards the success of organizations, management continually consider it a priority to achieve customer satisfaction at all cost. One of the ways organizational managers attempt to achieve customer satisfaction is by a knowledge based approach which incorporates customer knowledge into the firm's customer relationship management initiative (Gebert, Geib, Kolbe & Brener, 2003; Meihami & Meihami, 2014). According to Garcia-Murillo and Annabi (2002) a proper way for accessing customer knowledge of products and service is through a social interaction that brings together firm employees with prospective customers. However, Garrido-Moreno and Padilla-Melendez (2011) opined that the relationship between organizations' acquisition of customer knowledge and relationship building with customers is not as much direct. They suggested that customer relationship and satisfaction can only be achieved through knowledge management with the support of organizational factors such as strategy, structure, top management and other human resources possessed by the organization.

Customer satisfaction discuss is very strategic to knowledge based research in the Nigerian telecommunication industry (Ogunnaike, Ibidunni & Adetowubo-King, 2014). The high rate of porting activities reported by the National Bureau of Statistics (2016) raises an alarm as to the way industry players utilize knowledge to achieve performance. For example, the report revealed the four telecommunication firms had the following porting data as at March 2016: MTN (361), Globacom (1,446), Airtel (8,177) and Etisalat (11,136). In a sense, the data seem to reflect the level of buyer power in the industry, thus accounting for the subscribers' freedom to switch among telecommunication operators at little or no cost. However, a closer analysis reveal that the high porting rate could point to the fact that issues relating to knowledge utilization in relation to customer satisfaction and operational efficiencies, among other performance indicators are lacking among industry players.

According to Suraj and Ajiferuke (2013), telecommunication firms must manage customer knowledge, such as those which come through suggestions from customers, by incorporating such views in their customer service initiatives, especially when such suggestions apply directly to their need. This could greatly influence customer experience during service encounters and thus result in repurchase behaviours, customer retention and loyalty. In another context, Plumb and Zamfir (2009) showed that service quality that drive customer satisfaction must emphasize employees' continuous development and collaborative efforts of sharing ideas and knowledge.

Despite the evidences shown existing literature about the linkages between organizational knowledge and customer satisfaction, there is little known about how individual employees can use their tacit knowledge to achieve customer satisfaction in situations where customer complaints are not documented explicitly in the firms' online knowledge base. Therefore, this research attempts to investigate on the relationship between individual-tacit knowledge and customer satisfaction in the telecommunication industry.

METHODOLOGY

The research study is descriptive and exploratory in nature. The use of descriptive research design is validated by the fact that the population for the study is already established, theories are not newly explored or determined and the research study, on one hand, simply attempts to describe the relationships among the variables included in the research (Jong & van der Voordt, 2002). Therefore, the research question that relates to this design seeks to establish whether individual-tacit knowledge can enhance customer satisfaction in the telecommunication firms of low technology economies, such as Nigeria.

The exploratory research design is meant to identify the extent to which employees of the telecommunication firms are aware of the use of individual-tacit knowledge on the job and to explain how these employees engage such knowledge dynamically in situations where the firms' on-line knowledge base does not have satisfactory answers to customers' queries. Thus, apart from describing the relationships that exist between tacit knowledge and customer satisfaction, this study explores the characteristics and forms of applications of individual-tacit knowledge within a collective work system.

Measures

This research benefitted from the ideas of existing research studies. Questions for the qualitative and quantitative research instruments that pertained to individual-tacit knowledge of the firms were developed based on Chilton & Bloodgood (2007), Fei, Chen & Chen (2009) and Huang (2014). Customers' satisfaction item was captured by identifying customers' perception of their network provider's service quality before going further to develop questions that measure their level of satisfaction. This was in line with the suggestions of Almossawi (2012) & Rahman (2014).

Sampling

Managerial and technical and administrative employees of firms in the Nigeria telecommunications industry form the population for this study. The telecommunication industry is pivotal to this research because in the global business economy, this industry is recognised to be highly technologically driven (Oghojafor, Ladipo, Ighomerebo & Odunewu, 2014). Yet, in developing countries, such as Nigeria, technological sophistication is still very low, as such there are many shortfalls associated with the operations of the telecommunication industry (Alabar, Egena & Gbande, 2014; Osabuohien & Efobi, 2012; CPC, 2010).

Specifically four organisations in the GSM sub-market of the industry were included in this study. The GSM sub-sector is pivotal to the Telecommunication industry because it has the highest number of subscribers (98.07 per cent), thus serving as the major driver of growth in Nigeria's telecommunication industry. A total sample size of five hundred and four (504)

managerial and other technical and administrative employees was determined for this research work. Also, based on Godden's (2004) infinite population sample size determination formula, six hundred (600) customers were sampled, as a means of ascertaining customer satisfaction in the course of this research work. A set of structured questionnaire were used in gathering responses for this research study.

Reliability and Validity of the Scale Items

The reliability of the research items was ensured using the internal consistency method while the validity of scale items was carried out using construct validity. The Coefficient Alpha (α) or Cronbach Alpha is the most popularly used to measure internal consistency (Pallant, 2005). The values of α range from 0-1. The closer the value of α to 1, the more accepted the reliability of the data. The Cronbach Alpha internal consistency of the items of the questionnaire was analysed using the reliability procedure in SPSS version 21 and is presented in Table 3 below.

Table 1 RELIABILITY OF CONSTRUCTS AND SCALE ITEMS			
S/No.	Construct	No. of Items	Cronbach's Alpha
1	Individual-tacit knowledge	4	0.878
2	Customer satisfaction (Firm perspective)	3	0.770
3	Customer satisfaction (Customer perspective)	11	0.889

Source: Ibidunni, Ibidunni, Oke and Ayeni (2017)

From the table above, Pallant's (2005) bench mark of 0.7 scale reliability is fulfilled by all the constructs. Therefore, the scale items were found to be reliable for the constructs of this research study because the Cronbach alpha value of all items in the research instrument surpasses the benchmark.

Construct validity, on the other hand has been used widely in literature as a means of ensuring that items in the research instrument are actually measuring the constructs they claim to be measuring (Brown, 2000). Whereas some literature identifies construct validity by using factor analysis to observe clustering of items, another way of determining construct validity is to explore the degree of convergent and divergent correlation among items of a construct (Weiner, 2007). Pae (2012) examined the use of correlation based construct validity on the Pearson Test of English academics. Therefore, this research study determined construct validity of the research items using the extent of convergence and divergent validity among the items in each construct of the research study. The results showed in Table 2 sufficient level of convergent among items of the same construct, thus validating convergence among the items. More so, the divergence conditions among the items of different constructs was also ensure by the uncorrelated results among items of different constructs.

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Table 2
INTER-ITEM CORRELATIONS

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	Mean	Std. Deviation	1	2	3	4	5	6	7
Individual-tacit Knowledge									
It is often difficult for me to explain the steps with doing my job (1)	2.1573	1.24224	1						
Writing down the procedures involved with my job tasks is difficult (2)	2.3000	1.23115	0.678[**]	1					
Most times, I don't have to think too long about how to go about my job (3)	4.0225	0.97675	-0.173	-0.072	1				
Doing my job is more of a natural ability/skill to me (4)	4.1209	0.85421	-0.175	0.067	0.446[**]	1			
Customer Satisfaction									
Our customers often express their desire for lower tariff on calls and other products/services of this company (5)	4.4222	0.61768	-0.196	-0.245[*]	0.124	0.050	1		
These past three years, our customer service centre has recorded increased customer complaints (6)	4.4333	4.34483	0.041	0.282[**]	-0.002	0.106	-0.018	1	
In these past three years, I can boldly say most questions customers ask have been responded to (7)	3.9655	0.89505	-0.142	-0.204	0.120	0.232[*]	0.132	-0.252[*]	1
** Correlation is significant at the 0.01 level (2-tailed)									
* Correlation is significant at the 0.05 level (2-tailed)									

DATA ANALYSIS AND RESULTS

Table 3 DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS		
Firm Respondents		
Demographic Characteristics	**Frequency**	**%**
Gender		
Male	96	51.6
Female	90	48.4
Total	186	100.0
Marital Status		
Male	72	38.7
Female	90	48.4
Others	1	0.5
Total	163*	87.6
Work Experience		
Less than 5 years	72	38.7
6-10 years	94	50.0
11-15 years	14	1.1
16 years and above	2	7.5
Total	182*	97.8
Customer Respondents		
Gender		
Male	262	50.4
Female	257	49.4
Total	519	99.8
Marital Status		
Single	300	57.7
Married	191	36.8
Others	6	1.2
Total	497*	95.6
Age		
Under 25 years	183	35.2
26-35 years	175	33.7
36-45 years	106	20.4
46 years and above	53	10.2
Total	517*	99.4

*Figures with * are less that the total number of expected responses because respondents did not answer the questions that pertained to the respective demographic characteristics. However, this omission did not deter the statistical analysis because respondents answered all questions that pertained to the study variables.*

A total of one hundred and eighty-six (186) copies of questionnaire was retrieved from the organisational employees while five hundred and nineteen (519) copies of questionnaire was retrieved from customers. The gender characteristics of respondents in the firm reveals that 96 respondents (51.6 percent) are male, while 90 respondents (48.4 percent) are female. Meanwhile, 72 respondents (38.7 percent) are single, 90 respondents (48.4 percent) are married and 1 respondent (0.5 percent) is in the other categories, such as divorced or widowed. The working experience of respondents was also captured and reported in the table. 72 respondents (38.7 percent) have worked less than 5 years; 94 respondents (50 percent) have worked between 6 and

10 years; 14 respondents (7.5 percent) have worked 11 to 15 years; while 2 respondents (1.1 percent) have worked for 16 years and above in the organisation. This may imply that the firm has a weak employee retention strategy and hence the organisational knowledge, especially tacit knowledge might not be sustainable over time since the carriers of such knowledge are not retained in the firm. Alternatively, the firm would be able to sustain its knowledge and establish a strong and competitive culture if it has mechanisms that capture knowledge of employees.

The frequency distribution of customers' gender shows that 262 customers (50.4 percent) are of the male gender, while 257 customers (49.4 percent) are female. The marital status distribution shows that 300 customers (57.7 percent) are single, 191 customers (36.8 percent) are married and 6 customers (1.2 percent) are either widows, widowers or divorced. The age distribution and highest educational qualification of customers: 183 customers (35.2 percent) are under 25 years of age, 175 customers (33.7 percent) are between ages 26 to 35 years and 106 customers (20.4 percent) are between the ages of 36 to 45 years old, while 53 customers (10.2 percent) are at least 46 years old.

The hypothesis suggests that: There is no significant relationship between individual-tacit knowledge and customer satisfaction in Nigeria's telecommunication industry. The hypothesis was statistically tested for using correlation and regression statistics to verify the possibilities of relationship between both variables and then to see to what extent the independent variable (that is, individual-tacit knowledge) impact on the dependent variable (customer satisfaction). This hypothesis was first measured from the perspective of employees in the four GSM organisations of the telecommunication industry.

Also, it was necessary to view customers' perspective about their satisfaction with the firm's knowledge-based products and services. The essence of examining customers perception about their satisfaction with the firms' knowledge based services is especially important for intangible-resources based theories, such as the resource based view and knowledge based view literatures. The evidences drawn from here will immensely give direction to the organisational knowledge based research and broadly strategic management literatures, about how individual employees of the firm can use their knowledge as an asset to achieve customers' psychological, physiological and relationship based expectations over the firms' products and services. This is especially important in the telecommunications industry where most often, customers interact with individual employees of the firm in an attempt to resolve their queries.

Table 4
CORRELATION COEFFICIENT OF ITK AND CUSTOMER SATISFACTION AMONG TELECOMMUNICATION FIRMS

Firm Category	Pearson Correlation (r)	Level of Significance	Remark
Firm 1	-0.265*	$p < 0.05$	Significant and weak negative relationship
Firm 2	-0.352*	$p < 0.05$	Significant and weak negative relationship
Firm 3	0.274	$p > 0.1$	Not significant and positive relationship
Firm 4	-0.164	$p > 0.1$	Not significant and negative relationship

*Correlation is significant at the 0.05 level (2-tailed)

Table 4 shows the correlation between individual-tacit knowledge and customer satisfaction based on the perception of firms' operators. Statistical results from the table indicates

that generally the notion about using individual-tacit knowledge by the organisations' employees is not considered to be of much importance to organisations' customer satisfaction objective. This is arguable from the perspective that among the four firms, only two (i.e., Firm 1 and 2) give employees the chance to use their individual-tacit knowledge in responding to customers queries. The last two organisations (i.e., Firm 3 and 4) do not even consider necessary at all. Generally, the relationships that exist between ITK and customer satisfaction across the two firms (Firm 1 and 2) is weak at r= -0.27 for Firm 1 and r= -0.35 for Firm 2. More importantly, from the table it is also noticeable that in the two firms where a relationship between individual-tacit knowledge and customer satisfaction exist, such relationship is inverse in nature. The result suggest that the engagement of individual-tacit knowledge yield a downward effect on customer satisfaction (r= -0.27) for Firm 1 and (r= -0.35) for Firm 2.

Table 5		
EFFECT OF ITK ON CUSTOMER SATISFACTION		
Variable	β	P-value
ITK	-0.056	0.063
R	0.124	
R^2	0.015	
F	$F_{(1,223)} = 3.497, p < 0.1$	

Dependent Variable = Customer satisfaction

Table 5 above summarizes the result of regression analysis carried out to determine the impact of individual-tacit knowledge on customer satisfaction. Using the linear regression to detect how much influence individual-tacit knowledge has on customer satisfaction shows that the ability of the independent variable to explain the outcome variable is quiet low ($r^2 = 1.5$ percent, $p \leq 0.1$). This implies that the explanatory power of individual-tacit knowledge on the firm's customer satisfaction objective is only 1.5 percent. This result has important implications for the firm because it validates the statistical results gotten from Table 1 above. It reflects the fact that even from a combine and holistic perspective, the four firms' attitude and responsiveness to the use of tacit knowledge of individual employees is not very encouraged in the GSM sub-market of the telecommunication industry.

The decision therefore, is to reject the null hypothesis which states that individual-tacit knowledge has no impact on customer satisfaction and to accept the alternate hypothesis which states that there is a relationship between individual-tacit knowledge and customer satisfaction. This therefore implies that for the firm to achieve better customer satisfaction through individual-tacit knowledge, the specific type of complaint the customer comes with should be a critical factor to consider. Also, the employee attending to the customer must ensure that where intuition or experience is to be used in solving critical problems, the employee must explain extensively to the customer about how to resolve the problem and be sure that the customer has a good understanding of the steps involved. Consequently, issues such as patience, polite response to customer queries, in-depth understanding of customer related issues and operational procedures relating to the firm and technological sophistications, generally, are vital to using individual-tacit knowledge to achieve better customer satisfaction.

Table 6 shows the mean scores of customers' satisfaction with the products and services they purchase from the GSM telecommunication firms. The essence of having this data is to get first-hand information, from customers, about their level of approval of the firm's product, services and employee relations. The mean scored of all eleven dimensions of customer

satisfaction responded to showed a little above average satisfaction of customers with the firms' products/services, technology and modernization of the firm and their equipment and customer relationship practices. However, most of the scores obtained from the standard deviation reflect that the views of respondents are largely dispersed from the mean scores. Therefore, it suggests that respondents are generally not harmonized in their views. This indicates that the telecommunication firms still have a large gap to fill in fulfilling customers' expectation across the above mentioned service areas under study.

Table 6
ANALYSIS OF OVERALL CUSTOMERS' PERCEPTION ABOUT TELECOMMUNICATION FIRMS' SERVICES

	N	Min.	Max.	Mean	Std. Deviation	Skewness	
						Statistic	Std. Error
Signal quality	511	1.00	5.00	3.8943	1.04628	-1.035	0.108
Voice call quality	512	1.00	5.00	3.9902	0.96205	-0.973	0.108
Using advanced technology	502	1.00	5.00	3.9323	0.99870	-0.793	0.109
Quality of call centre services	504	1.00	5.00	3.7738	1.01501	-0.761	0.109
Quality of services at retail/service shops	508	1.00	5.00	3.7874	1.07421	-0.728	0.108
Having retail/service shops in many places	506	1.00	5.00	3.8794	1.16691	-0.860	0.109
Mobile provider being modern	503	1.00	5.00	3.9980	0.96863	-1.039	0.109
Mobile provider being friendly	510	1.00	5.00	3.9667	0.98159	-1.047	0.108
Mobile provider keeping in touch	506	1.00	5.00	3.6621	1.16993	-0.681	0.109
Having user-friendly website	500	1.00	5.00	3.6740	1.17750	-0.640	0.109
Network/signal coverage	511	1.00	5.00	3.7710	1.17841	-0.818	0.108

Test of Difference between Customers in Lagos and FCT on Their Satisfaction with the Firms' Products and Services

Although the means of customer satisfaction have been derived in the table above, it will yet important to identify whether there is a difference between perceptions of customers in Lagos from those in FCT about the products and services the firms offer. Doing this will point out the extent to which customers in Lagos and FCT differ in their opinion as to the use of organizational knowledge by the four firms under study in achieving customer satisfaction objective.

In order to achieve this, T-test was adopted. T-test is used to show difference among two groups of respondents about a subject matter. However, according to Pallant (2005), whereas T-test only provides indications about whether or not there is a difference in the means of groups, it does not show the extent to which the difference exists. Therefore, as a way of determining the weight of such difference, the eta squared was recommended, using the formula:

$$\textbf{Eta Squared} = \frac{t^2}{t^2 + (N1 + N2 - 2)}$$

Where,
t^2= t-value
N1=Number of respondents for group 1
N2=Number of respondents for group 2

Therefore, this study followed this approach to determining whether or not there is a statistical difference between customers in Lagos and FCT on their satisfaction with the four firms' products and services.

Table 7 TEST OF DIFFERENCE IN PERCEPTION OF CUSTOMERS IN LAGOS AND FCT ABOUT THEIR SATISFACTION WITH THE PRODUCTS AND SERVICES OFFERED BY THE TELECOMMUNICATION FIRMS			
Location of Respondents	**N**	**Mean**	**Std. Deviation**
Lagos	273	3.7345	0.70752
FCT	239	3.9660	0.74026
Leven's Test of Equal variances	t(510) = -3.615, sig. (0.064, p>0.05)		
Mean Difference	-0.23149 (sig. = 0.000, p ≤ 0.05), 95% CI = -0.35732 to -0.10567		

Table 7 above shows the T-test difference in the perception of customers in Lagos and FCT about their satisfaction with the products and services offered by the four firms included in this study. The overall means are a little above average for the two groups. From table (b), since the P-value for the Levene's test of equality in variances is above the benchmark of 0.05, then it is appropriate to assume that the variances are equal. Therefore, from the table above, assuming that variances are equal, the p-value (2-tailed) indicates that p<0.05, hence signifying that there is a statistical difference in the perception of the two groups of customers about their satisfaction with the firms' products and services.

However, as earlier stated the eta squared test will show the weight of the difference.

$$\textbf{Eta Squared} = \frac{t^2}{t^2 + (N1 + N2 - 2)}$$

$$= \frac{-3.615^2}{-3.615^2 + (273 + 239 - 2)}$$

$$= 0.025$$

According to Pallant (2005), the levels of difference between two groups can be either small (when eta square = 0.01), moderate (when eta square = 0.06) or large (when eta square = 0.14). Thus the eta square calculated above as 0.025 is moderate. It therefore holds that statistically, the extent of difference in means in the perceived levels of satisfaction between telecommunications customers in Lagos and FCT is moderate in nature. By implication,

telecommunication firms are expected to bridge the gaps that make for differences in perception of customers' satisfaction.

QUALITATIVE RESULTS

Theme: Using Individual-Tacit Knowledge in Resolving Customer Complaints That Are Not Captured by Your Firm's Online Knowledge Base

Firm 1

A few group of respondents simply stated that they would by all means within their knowledge ability resolve the customers' query. Hence, indicating that employees demonstrate some form of tacit knowledge when the firm's online knowledge based does not contain answers to customers' complaints.

However, other employees out rightly stated that complaints that were beyond the scope of the online data base would be directed to their head office for attention. The following quotation depicts that state of mind of two respondents

> *"Any complaints above our capacity is directed to our bulk office for solution" (Respondent 2).*
> *"Issues directed to me will be solved by seeking information from the headquarters as regards the customer complaints that are not captured by the online knowledge base" (Respondent 11).*

There are possibilities that customers who come to such customer service centres with complaints beyond those provided on the online data base might have to spend longer period of time before getting their queries resolved.

The answer provided by some respondents points to the fact that it is important that Supervisors' possess adequate knowledge of different codes that relate to problems that may arise on their network. The respondents stated that:

> *"I can help the customers solve his/her problem by either telling which code to use or message to send back" (Respondent 5).*

Based on data collected, respondents that had either additional professional qualification, technical skills or both that related to information technology were better acquitted with using intuition, which is individual-tacit knowledge, to resolve customer complaints that are not captured in the firm's online knowledge base.

Firm 2

The responses gathered from the data revealed that the respondents would to a large extent attempt to resolve customer complaints based on their personal knowledge and experience. The manner of response to this theme reflected employees' commitment to customer satisfaction by all means possible.

> *"I respond to customer complaints in such situations by using my initiative and general knowledge of customer issues and general knowledge of past situation which are similar" (Respondent 2).*

The views of one respondent show cased a strong connection from tacit knowledge to

employees' attitude and emotional intelligence especially when attending to customers' complaints. The following statement *"always responding to customers' complaints with care and making sure that the answer to their complaints is satisfactory enough"* depicts a cautious listening attitude *(Respondent 7)*.

Some respondents also revealed that in the case where they are unable to resolve customer queries, they refer such issues to either the appropriate units or to the headquarters where colleagues who are better experienced in the concerned issues can attend to them.
"Normally I fix appointments with the customers and we discuss on a personal level, when it is a major complaint. But in the case of minor complaints I normally refer them to the head office" (Respondent 3).

"If I can attend to the issue, I will do that. But if not, I will forward their complaint to the appropriate unit. And after the issue has been resolved, a message will be forwarded to them to notify them that their complaint has been addressed" (Respondent 7).

Firm 3

Generally, there was scarcely any respondents found that was able to share any significant views about their use of individual-tacit knowledge to resolve customer complaints that are not captured on the firm's online knowledge base.
However, the responses of few employees reflect their reliance on the experience of colleagues when required. Others also emphasized the role of individual-tacit knowledge such as past experience.

One respondent said *"after listening carefully to the complaints, I put the customer on hold while I search for solutions. If I cannot discover any possible solution, I confer with my colleagues" (Respondent 10). "I basically use past experience or experience already encountered, but if it is an issue too large for me, I call on other colleagues to get help" (Respondent 2).*

Other respondents simply stated that such issues beyond the scope of the firm's online knowledge base will be *"forwarded to the relevant technical unit"* or *"referred to the manager" (Respondent 6).*

"I at best do referrals for issues that I am unable to handle (Respondent 3)"

Firm 4

Most respondents were unable to demonstrate any significant views about responding to customer complaints that are not captured by the firm's online knowledge base. However, very few respondents emphasized that they will depend on their individual-tacit knowledge gained from personal study.

"Basically, a lot of resources are drawn from personal study and research" (Respondent 1).
Other respondents who gave any significant response claimed that they will forward such complain to the higher authority, present it before the board or consult with colleagues.

"Any complaints above our capacity is directed to our bulk office at head office for solution" (Respondent 7).

"They are treated at the board meeting after been submitted to the manager in charge" (Respondent 12).

"I would source for the information from my colleagues and if the information does not satisfy the customer, I will ask him/her to drop a contact so that I can send an appropriate response when I have it" (Respondent 10).

Therefore, possibilities are that the firm largely promotes a culture of collectivism more than that of individualism. This is such that in using knowledge to resolve customer complaints, especially those which are beyond the coverage of its online knowledge base, employees would rather seek collective solutions than attempt to individually seek out a means.

DISCUSSION

The hypothesis which stated that there is no significant effect of individual-tacit knowledge on customer satisfaction was rejected. From the statistical results, it was revealed that individual-tacit knowledge has a significant effect on customer satisfaction. The present study fills a research gap in literature where there has been difficulty in explaining how knowledge embedded in individual employees can create or achieve customer satisfaction and hence create possibilities for customer loyalty. This argument is based on the proposition that most of the complaints made by customers are attended to by the individual employees in the organization, otherwise referred to as customer care representatives. The analysis of this hypothesis was carried out by, firstly, testing relationships between individual-tacit knowledge and customer satisfaction based on responses gathered from employees of telecommunication firms. Secondly, Anova analysis was used to identify any possible differences among perception of employees of the four firms about the hypothesized relationship. Thirdly, it was considered necessary to identify customers' perception about their satisfaction with the products and services they are offered by the organisations. Finally, the t-test analysis was carried out to identify whether there were any differences in perceived levels of satisfaction between customers in Lagos state and those in FCT.

The result from correlation and regression Tables (Tables 1 and 2) indicate that employees of the four firms generally agree to the fact that individual-tacit knowledge has significant influence on customer satisfaction. However, they have a weak perception of the influence of individual-tacit knowledge usage as a means to achieving the organisations' customer satisfaction objective. The results uncovered here may derive from the weak mean scores attached to individual-tacit knowledge use as reflected in table 4. Whereas two organisations included in the study showed a weak and negative correlation relationship between organisational knowledge and customer satisfaction, the other two did not reflect any relationship between the two variables at the five percent level of significant. However, the negative correlation coefficient indicated in statistical results imply that individual-tacit knowledge can enhance customer satisfaction but in a very minute way. This outcome can be explained based on the fact that personalized knowledge of employees is not an automatic guarantee for resolving customer complaints and queries.

Organisational knowledge that will yield customer satisfaction, for example through prompt and appropriate response to the queries and eventually result in customer loyalty must be customer centred. In essence, although it can be argued that individual-tacit knowledge can be a very useful aid to enhancing customer satisfaction and stimulating their continuous interest to stay with and patronise the organization, telecommunication organisations must also ensure that

the right caliber of employees are positioned at the customer care centres (Tsoukas & Vladimirou, 2001). This will entail, hiring or training employees with or to have adequate knowledge of customers' needs and about their personal interests. Individual-tacit knowledge of employees can be useful in subsiding increasing customer complaints, such as their perception about high tariff rates (Gebert, Geib, Kolbe & Brenner, 2003). They can also boost the firm's image as they use their tacit knowledge to respond accurately and within shorter time frame to customer complaints.

There are possibilities that when customers encounter employees who develop personality-based relationship with customers the outcome is most likely going to be customer satisfaction (Bhargava & Anbazhagan, 2014). Moreover, the results from semi-structured interviews revealed that respondents that had either additional professional qualifications, technical skills or both, that relate to information technology were better acquitted with using intuition, that is, individual-tacit knowledge, to resolve customer complaints that are not captured in the firm's online knowledge base. Again, examining the results in Table 4, points to the fact that employees in the four organisations hold a common view as to the effect of individual-tacit knowledge on customer satisfaction. This result reflects a state of commonality in knowledge based practices among organisations in the telecommunication industry. More interesting is the fact that the qualitative results strongly validate this claim. Employees from the four organisations agree that very often their first point of contact when attempting to resolve customer complaints is the on-line knowledge base of the organization. However, when their customers' queries are not provided for by such online means, they rely on their individual-tacit knowledge to resolve the queries and complaints. Therefore, calling attention to the fact that individual-tacit knowledge is strategic to organisations towards attaining higher levels of customer satisfaction. But their weak disposition towards individual-tacit knowledge is evidenced by the fact except for very few employees, there is a general perception that any complaint or query from customers that they cannot proffer solutions to will be referred to higher officers in the organization. This, for example, can explain why customers often are dissatisfied with responses they get from telecommunication operators or at least why their queries take long hours or days before they get resolved.

Amidst the discussions about the effect of individual-tacit knowledge on customer satisfaction, statistics about customer satisfaction with the telecommunication organization's products and services reveal only a moderate level of satisfaction. Although the mean scores of all indicators of customer satisfaction that were included in the research item reveal a moderately strong level of satisfaction, the high standard deviation scores also calls attention of decision makers and telecommunication operators to caution. The implication of high standard deviation scores as opposed to the mean scores is that despite the moderate satisfaction of customers with telecommunication operators, they largely have dispersed or differing views in this regard. More critical to this discuss is that respondents in both locations of Lagos state and the FCT have very closely related perceptions of these views about their levels of satisfaction with the telecommunication organisations. Therefore, organisational managers must note that there is still a lot of improvement work to be done in the area of the overall service quality and customer services rendered to telecommunication subscribers.

IMPLICATIONS

Academic Implications

The findings in this research work have shown the relationship between individual-tacit knowledge and customer satisfaction of organisations is very significant. Therefore, the study support the claim of Merrill (2014) that most innovative behaviours exist in the domain of human tacit knowledge because documented knowledge in organisational repositories and other knowledge management infrastructure consists of only about twenty percent of available knowledge.

Implications for Management Practice

The study showed that managers in the telecommunication industry can enhance the organisation's customer satisfaction objective by encouraging employees to regularly document their experiences about their most prominent challenges encountered on the job

CONCLUSION AND RECOMMENDATION

The study focused on investigating the relationship between individual-tacit knowledge and customer satisfaction in Nigeria's telecommunication industry. From the statistical results, the study concludes that individual-tacit knowledge significantly influences customer satisfaction. Employees of telecommunication firms should be encouraged to use their individual-tacit knowledge, such as intuition and experience, where possible to resolve customer complaints. This could save time, costs and efforts involved with long hours of solving customer queries. Employees should be encouraged at regular intervals to document their experiences about their most prominent challenges encountered on the job and how they were able to resolve it. The firm should also have a knowledge base mechanism that stores such information and can be retrieved when necessary.

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