Mediating Role of Knowledge Management between Human Capital and Organizational Resilience of Commercial Banks

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Abstract

Over the past few years, it has increasingly been recognized that lack of resilience to dynamic and turbulent business environment is a serious business problem, especially in the financial institution sector of Nigeria during the global pandemic of COVID-19. Lack of organizational resilience to the health pandemic had resulted in a range of negative business outcomes and causes of a decline in competitive advantage. The focus of this research is to investigate the function of knowledge management in mediating the relationship between human capital and organizational resilience in Nigerian commercial banks during the worldwide COVID-19 pandemic. A cross-sectional study design was utilized to randomly choose 313 senior managers from Nigerian deposit money banks. The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Human capital and knowledge management have a strong direct association with organizational resilience, according to the findings. Also, this research shows the function of knowledge management in moderating the relationship between human capital and organizational resilience of commercial banks in Nigeria. The findings provide a stronger insight into how commercial banks in Nigeria use human resources and knowledge management. As a result, financial institutions will be able to make informed decisions about how to integrate and apply knowledge management strategies. Furthermore, no studies have been conducted known to the researchers on how businesses' intangible resources and competencies, such as human capital and knowledge management, generate organizational resilience, with knowledge management serving as a mediating component.

Keywords: human capital, knowledge management, organizational resilience

1. Introduction

Deposit money banks play an important part in any country's financial system. Most importantly, they mobilize and allocate financial resources for economic activities to thrive effectively in the business environment that is characterized by increasing external threats and unpredictability. Consequently, the main goal of commercial banks in Nigeria is to provide the enabling environment for economic growth and

development which is intended to achieve reduce unemployment, inflation and instability in exchange rate among others (Igwebuike, Udeh & Okonkwo, 2019).

However, COVID 19 has posed a significant challenge to many banks' capacity to serve their clients due to the unexpected growth in demand for digital banking services (Echarte Fernández, Náñez Alonso, Jorge-Vázquez & Reier Forradellas, 2021). For example, the recent coronavirus (COVID-19) spread has created an unparalleled risk and huge financial losses and deposit money banks in Nigeria are being considered as most vulnerable (Zhang, Hu & Ji, 2020). These unprecedented environmental changes in Nigerian have shown how weak the organizational resilience of financial institutions could be. According to Goodell (2020), during a crisis, the banking industry is particularly sensitive to the possibility of a rapid decline in general savings and a high loan default rate. Lack of efficiency and effectiveness in mobilizing and allocating financial resources to negate the consequences of the COVID-19 lead to unemployment, recession and general instability of the Nigeria economy (Oseni, Okwu, Babalola & Adegboyega, 2020).

This helps explain why financial sectors in Nigeria are seeking different ways to reduce their vulnerability to the global pandemic of COVID-19 by increasing their mobilizing and allocation of financial resources for positive adaptation (Financial stability report (2020). Furthermore, the financial sector's sustainability is critical during crisis moments like the COVID-19 circumstance, which is negatively impacting other sectors. This is because financial institutions can greatly lessen the impact of the COVID-19 crisis on other sectors of the economy with appropriate policy interventions (Korzeb & Niedziółka, 2020). As a result, commercial banks in Nigeria have received a substantial amount of research attention from several authors and practitioners (Ojukwu-Ogba, 2017).

Because of the unpredictable nature of the financial sector, the economic outlook is undergoing rapid and unprecedented changes. As a result of this, human capital is gaining more importance due to its knowledge base to bring up innovative business ideas (Menéndez & Montes, 2017). Previous studies, therefore, have found that human capital significantly affects organizational resilience (i.e. Nilakant, Walker, Rochford & Van Heugten, 2013; Irawan, Prabowo, Kuncoro & Thoha, 2021).

This present study attempts to provide a model for how this effect takes place using knowledge management as mediating variable. The perspective is that, while

human capital determines specific intangible human resources at the disposal of an organization (Badrabadi & Akbarpour, 2013), the effective engagement of human capital for organizational resilience requires alignment with the knowledge management process (i.e. knowledge creation, knowledge sharing and knowledge application). Fundamentally, it is based on a capacity to integrate and reconfigure its human resources through the development, interchange, and application of knowledge. (Kianto, Ritala, Spender & Vanhala, 2014). For example, firm human capital capabilities alone will not be enough to achieve organizational resilience, unless there is a knowledge management process in the organization (Zaei & Kapil, 2016). So far, nevertheless, there has been little or no reliable empirical evidence on the indirect influence of knowledge management on the relationship between human capital and organizational resilience concerning Nigerian financial institutions. As a result, in respect of Nigeria, the objective of this current study is to explore the function of knowledge management in mediating the relationship between human capital and organizational resilience. The rest of the research is planned as follows: Section 2 presents literature review on human capital, knowledge management and organizational resilience. Section 3 discusses research methodology, Section 4 presents data analysis and results. Section 5 comprises of the discussion and conclusion. Section 6 relates the limitation and suggestion for further studies.

2. Literature review

Organizations are a network of a social entity composed of individuals formed into groups whose knowledge, skills and competence add to the collective capacity of the organization through complex social interactions internally and externally to achieve organizational goals (Lengnick-Hall, Beck & Lengnick-Hall, 2011). The word "Resilience" is seen as the bright side of vulnerability. Thus, organizational resilience is the process through which an individual employee, team, or organization develops and employs the ability to respond to environmental changes in such a way that it adapts positively and sustains positive functioning before and after adversity. (Williams, Eke & Anyanwu, 2017). This means that organizational resilience is concerned with events occurring before, throughout, and beyond a crisis. It also refers to an organization's ability to deal with disruption or shock to its working environment, as well as build a new operational direction constantly (Gilly, Kechidi, & Talbot, 2014).

2.1 Human Capital and Organizational Resilience

Employees are at the heart of every organizational setting, working to help the organization fulfill its mission. According to Wu and Chen (2014), human capital

refers to people's mental capabilities and other work-related abilities that are innate in their minds and cannot be retained by the business when employees are not physically present. Therefore, Human capital is organization's collection of skills, experience and other abilities embedded in its employees (Badrabadi & Akbarpour, 2013). Taking into account this literature review, this research recognizes that human capital is essential for commercial banks and that if these banks have valuable employees with the required skills and experience, they will gain a long-term competitive edge, resulting in increased organizational resilience. As a result of this statement, the following hypothesis emerges:

H_1: Human capital has a positive influence on the organizational resilience of commercial banks.

2.2 Knowledge Management and Organizational Resilience

The methods and techniques that enable firms to successfully manage existing intellectual assets and attain knowledge-based advantage are referred to as knowledge management (Dalkir & Beaulieu, 2017). Specifically, Brajer-Marczak (2016) describes knowledge management as the systemic process and activities that involve the creation, acquisition, exchange and use of knowledge that leads to the improvement of business processes. In other words, good knowledge management creates and shares knowledge for the design and efficient development of operational strategies (Dayan, Heisig & Matos, 2017). Previous studies reported that knowledge management has been found to have an impact on organizational learning and ultimately organizational resilience (Ling, 2013; Fani, Fard & Yakhkeshi, 2015). In difficult economic times, resilient companies typically have a repertory of knowledge resources that can help them adapt and compete more effectively (Wang, 2009; Mafabi, Munene & Ntayi, 2012). However, the majority of the work focused on the relationship between knowledge management and company effectiveness in a creative environment (Mafabi *et al*., 2012). Therefore, the current study suggests that knowledge management can be a significant contributing factor in commercial banks resilience in Nigeria. As a result, the following hypothesis is put forth:

H_2: Knowledge management positively influences organizational resilience.

2.3 Human Capital and Knowledge Management

The totality of a firm's knowledge-based intangible assets entrenched in its employees is known as human capital (Cohen, Naoum & Vlismas, 2014) that results from/to the flow of knowledge activities known as the knowledge management process (Shih, Chang & Lin., 2010). This implies that even the two concepts could overlap and interact to create value for the organization. However,

there is a key difference between human capital and knowledge management (Hsu & Sabherwal, 2012). According to Kianto *et al.* (2014), such capital exists and can be called an asset, but it cannot be naturally leveraged in a value system without information system managerial operations. Previous studies reported that human capital had been positively related to knowledge management (Al-Johani & Marghalani, 2015; Zaei & Kapil, 2016; Khan, Sentosa & Salman, 2018). However, most of the studies discussed the human capital relationship with knowledge management in a different context such as food and beverages or the healthcare sector. As a result, the hypothesis that follows is put forth:

H_3: Human capital is positively related to knowledge management in commercial banks in Nigeria

2.4 Mediating role of Knowledge Management between Human Capital and Organizational resilience

The critical role of human capital and how it affects organizational resilience has been a recent focal point of investigation for several researchers (Nilakant *et al*., 2013; Menéndez & Montes, 2017), and knowledge management on the other hand was also found to have an empirical contributory role in organizational resilience (Mafabi *et al*., 2012; Godwin & Amah, 2013; Mafabi, Munene & Ahiauzu, 2013; Fani & Fard, 2015). Remarkably, very little is known about human capital interacting with knowledge management to affect organizational resilience. According to Kianto *et al*. (2014), human capital in the context of interacting with knowledge management are the most vital static and dynamic capacity in all strategic and operational areas of an organization to sustainable competitive advantage, which leads to organizational resilience. Therefore, these past studies provide an opportunity and inspiration for further research on the link involving human capital and knowledge management in diverse settings, such as commercial bank organizational resilience in Nigeria. As a result, the following hypothesis is put forth by the study:

H_4: knowledge management mediates the relationship between human capital and Organizational resilience.

3. Research Methodology

3.1 Population and Sample Size

The focus of this study is on the permanent staff of Nigerian deposit money banks. The participants in this study were the 21 deposit money banks that were registered

with the Central Bank of Nigeria (CBN) as of June 8, 2020 (CBN, 2020). However, this study focused specifically on the Domestic Systemically Important Banks (D-SIBs) as labelled by CBN. The D-SIBs are First Bank of Nigeria Limited, Guaranty Trust Bank Plc. (GTBank), Zenith Bank Plc., United Bank for Africa Plc. (UBA), Access Bank Plc., Skye Bank Plc., and Ecobank Nigeria. (Ayodele, 2016). These banks are appropriate for this study, since they are the front-runners in the Nigerian banking industry and are among the institutions identified and classified by the central bank of Nigeria as those that cannot be bankrupt (Central Bank of Nigeria [CBN], 2014). This categorization fits the context of organizational resilience which is the focus of this study. The study based its sample size determination on the Krejcie and Morgan (1970) table. A total of 453 questionnaires were distributed to these selected commercial banks, however, only 313 valid copies of the questionnaire were returned with a response rate of 69%.

3.2 Measures of research variables

Subramaniam and Youndt (2005) designed and tested scales to operationalize human capital (independent variable) which was adopted in this study. A five-item scale was used to assess human capital. Knowledge management (the mediating variable) is a multidimensional variable that includes information creation, knowledge exchange, and knowledge application. Knowledge creation, a four-item scale and knowledge application, five-item scale were measured from a scale adapted from Gold, Malhotra and Segars (2001) while the five-item used to measure knowledge sharing were adapted from the Connelly and Kelloway (2003). Organizational resilience (dependent variable) was measured as a one-dimensional variable adapted from McManus (2008) and Stephenson (2010). Partial least squares structural equation modelling (PLS-SEM) using the smartPLS3 statistical software was adopted for this study.

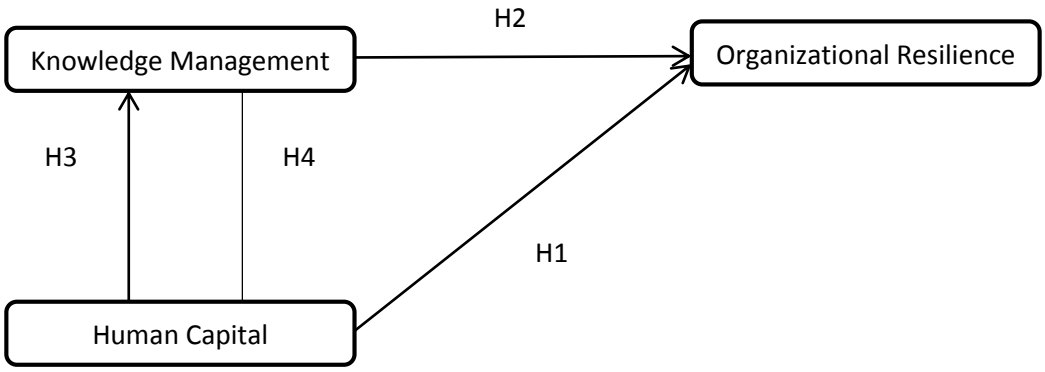

Fig. 1: Research Model

4. Data analysis and results

This study adopted the "second-order reflective-formative hierarchical model, type II with the two-stage repeated approach" (Becker, Klein & Wetzels, 2012). Therefore, in this study, human capital and organizational resilience are treated as first-order reflective constructs, while knowledge management is operationalized as a Reflective-Formative Type II construct (see Ringle, Sarstedt & Straub, 2012).

4.1 Measurement model validation

For each of the reflective constructs, the measurement model assessment includes item reliability tests, internal consistency reliability tests (composite reliability [CR]), convergent validity tests (average variance extracted [AVE]), and discriminant validity tests, as suggested by Henseler, Ringle, and Sinkovics (2009) and Hair, Hult, Ringle, and Sarstedt (2016), as well as the assessment of the formative construct in which two conditions for each indicator was examined (Hair *et al*., 2016).

Table 2
Measurement Model for Reflective Constructs

Constructs	Item	VIF	Loadings	AVE	CR
Human capital	HC01	1.951	0.813	0.757	0.926
	HC03	3.168	0.909		
	HC04	2.726	0.879		
	HC05	2.817	0.877		
Organizational Resilience	OR1	1.343	0.764	0.505	0.803
	OR4	1.160	0.621		
	OR5	1.469	0.733		
	OR6	1.411	0.718		

The first requirement was checked using the tolerance level or variance inflation factor (VIF) values to see if the indicators were homogeneous. The relevance of each formative indicator's statistical contribution to the major concept was assessed as the second requirement. The thresholds are outer loading "(>0.50), CR (>0.7), VIF (<5) and AVE (>0.5)" (Hair *et al*., 2016).

Table 2 indicated that based on the assessment of individual item reliability of reflective constructs (i.e. human capital and organizational resilience), three items (HC2, OR2 and OR3) that produced lower loading values of 0.434, 0.476 and 0.453 respectively, which are below the threshold value of 0.50 were removed. Outer factor loadings of at least 0.70 are present in the remaining 8 entries. Furthermore, the CR and AVE values are greater than the permissible level, indicating that the items are valid and acceptable for future investigation. Furthermore, discriminant validity was evaluated to ensure the external consistency of the research model. Fornell and Larcker (1981) recommended that the AVE of the latent construct ought to be larger than the squared correlations between the latent variables to ensure discriminant validity. Table 3 shows the results of the discriminant validity test.

Table 3
Fornell-Larcker Criterion

	HC	KM	ORR
Human capital (HC)	**0.870**		
Knowledge Management (KM)	0.768		
Organizational Resilience (ORR)	0.617	0.676	**0.711**

The square root of the AVE (in Bold) for every reflective construct is bigger than its association with every other construct, as seen in Table 3. This means that each construct in the study model shares more variation with its measures than with the other constructs.

4.2 Measurement model for the formative construct

Collinearity among the indicators with variance inflation factor (VIF) values was investigated for knowledge management as a formative concept. Hair *et al*. (2016) suggested that the VIF value of each indicator should not exceed five (5) to avoid multicollinearity.

Table 4

Measurement Model: VIF and Indicators Significance Testing Result

Formative Construct	**Formative Indicators**	**VIF**	**Outer Weights (Outer Loadings)**	**T Statistics**
Knowledge Management	Knowledge creation	3.947	0.395 (0.947)	26.317***
	Knowledge sharing	2.620	0.344 (0.888)	26.615***
	Knowledge application	2.652	0.359 (0.894)	24.813***

***p < 0.05;

Note: "The values in parentheses (i.e., outer loadings) represent absolute contribution, while their corresponding values by the left (i.e., outer weights) represent the relative contribution of an indicator to the main construct (i.e., knowledge management)". *(n=313)*

The outside weights and outer loadings of the indicators were used in this study to determine their relative and absolute relevance. There is empirical justification to keep the indicator if its weight is significant, that is if the t-value is greater than the critical value. In case it is not significant but the corresponding loading is relatively high (greater than 0.5), the indicator is retained (Hair *et al.*, 2016).

The bootstrapping procedure using 5000 samples as suggested by Hair, Ringle and Sarstedt (2011), with a two-tailed test at a critical value of 1.96 (significance level of 5%) was applied in evaluating the indicator weight and t-statistics. Consequently, the VIF value, outer weights and t-statistics for each formative indicator are given in Table 4

The results, as presented in Table 4, reveals that the VIF value of all the three-knowledge management formative indicators are below the value of 5, which indicates that there is the nonexistence of collinearity issues between each set of indicators of the higher-order model. VIF levels vary between 2.62 to 3.95. The indicator with the greatest VIF value was knowledge creation (3.947), which fell short of the required VIF value of 5 (Hair *et al.*, 2011). Furthermore, the t-value of the outer weights of knowledge creation, knowledge sharing and knowledge application on Table 4 confirmed that all these formative indicators were significant with a two-tailed test, whereby the t values are more than 1.96 and statistically significant at P-value less than 0.05. These indicate adequate evidence of the relative contributions of these formative indicators to the main construct (knowledge management). Similarly, all formative indicators' outer loadings are more than the threshold of 0.50, indicating that they provide an absolute contribution to the construct. In general, based on the above empirical evaluations, the structural model evaluation can adopt the reflecting and formative measuring models, because they are dependable and valid.

4.3 Structural Model Assessment

Path coefficient, coefficient of determination (R2), and effect size were used to estimate the structural model (f^2). The path coefficient data show the direct and interactive relationships between constructs that result in acceptance or rejection of the hypothesis. Table 5 and figure 1 shows all the direct and indirect relationship results.

Table 5

Structural Model (Direct and Indirect effect results)

Relationship	Beta	Standard Deviation	T Values	P Values
H1: HC -> ORR	0.240	0.066	3.622	0.000
H2: KM -> ORR	0.491	0.070	7.059	0.000
H3: HC -> KM	0.768	0.027	28.201	0.000
H4: HC -> KM -> ORR	0.377	0.056	6.680	0.000

Note: "**p<0.1, *p<0.05, ns= not significant (p>.05) (Two Tail)"

HC= human capital, KM=knowledge management, ORR= organizational resilience

Table 5 presents the result of three direct relationships and one indirect relationship. Consequently, the three hypotheses involving the three direct relationships indicated a positive path coefficient and were accepted based on the known decision rule that the t-value calculated is greater than the threshold value of 1.96.

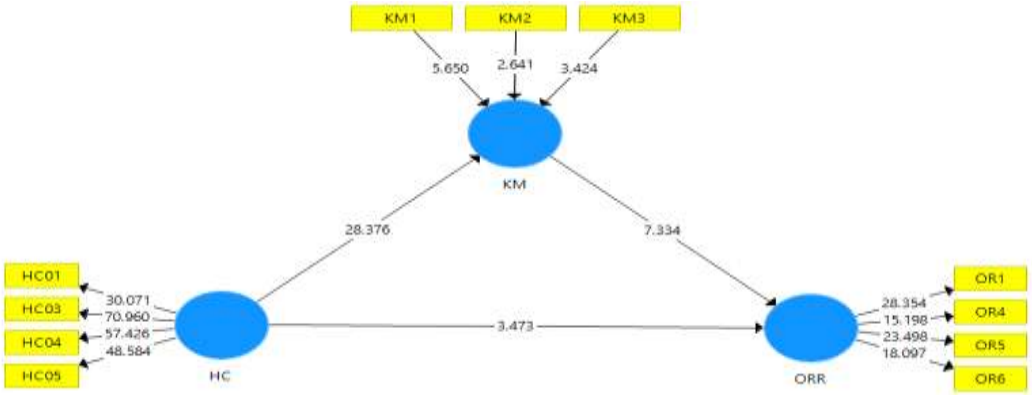

Fig 2: PLS-SEM Bootstrapping

Furthermore, Table 5 also shows the test of significant results of the indirect effects of human capital on organizational resilience obtained after the bootstrapping procedure. The results of bootstrapping on human capital's indirect effect have a beta value of 0.377 that is less than 0.05, indicating knowledge management is a mediator of the human capital → organizational resilience relationship given that the compound path was significant.

4.4 The coefficient of determination (R^2) and effect size (f^2)

The coefficient of determination was used to measure the structural model's capacity to estimate the level of the endogenous component (organizational resilience) (R2). In some academic domains, an R2 score of 0.20 is considered high (see Hair *et al.* 2011). In PLS-SEM modelling, Chin (1998) advocated that R^2 values of 0.67 and above is deemed substantial, R^2 values between 0.33 and 0.66 is deemed moderate and R^2 values between 0.19 and 0.32 are deemed weak. The result displayed in Table 6 indicates that the effect of human capital and knowledge management is moderate, because these two variables explained 48% of the variance in organizational resilience of commercial banks in Nigeria.

Furthermore, knowledge management accounted for 59% change in organizational resilience as also shown in Table 6. Furthermore, this survey examined the effect size (f^2) of human capital on organizational resilience. The recommendations for evaluating f^2 are that f^2 value of 0.02 is equal to small, f^2 value of 0.15 is equal to medium and f^2 value of 0.35 is equal to large effects of the exogenous latent variable (Cohen, 1988). The detailed results on the effect size analysis are also included in Table 6. Human capital has a big statistical significance (1.436) on knowledge management, while it has a small effect size on organizational resilience. The impact of knowledge management on organizational resilience was moderate.

Table 6
Results of R^2 and effect size f^2.

Exogenous Variable	f^2		R^2	
	KM	ORR		
HC	1.436	0.046	KM	0.590
KM		0.191	ORR	0.480

Note: HC= human capital, KM=knowledge management, ORR= organizational resilience

5. Conclusion and Recommendations

This study's findings revealed a strong positive directly and indirectly association connecting human capital and organizational resilience. This finding was expected and suggests that a business that believes in its employees and provides the necessary enabling environment is more likely to enhance its resilience in the long run. This finding could be explained by the fact that while organizations become more conscious of decrease situations, they are becoming more concerned about the influence of employee group dynamics and their precise efforts to successful crisis response. In other words, human capital is the medium through which organizations facilitate the quick exchange of information and knowledge to cope with environmental challenges (Linnenluecke & Griffiths, 2010).

Furthermore, this finding is in agreement with and supported by the resource-based theory, which proposes that the ability to cope with environmental challenges (i.e., organizational resilience) puts an organization in a favourable advantage in the marketplace through a heterogeneous set of internal resources and capabilities which are valuable, rare, inimitable and non-substitutable (Wernerfelt, 1984;

Barney, 1991). Empirically, human capital positive influence on organizational resilience which is significant is further supported by previous research works. For example, the results are consistent with Nilakant *et al*. (2013) and Menéndez and Montes (2017) discovered that the human capital aspects of intellectual capital and organizational resilience had a substantial positive link. This relative importance of human capital on organizational resilience can be linked to the needs of business organizations which may emerge as a consequence of high levels of turbulence, volatility, and unpredictability within the context of the global pandemic of COVID-19.

Furthermore, knowledge management was discovered to play a mediation role between human capital and organizational resilience in this study. This finding shows that when knowledge management techniques are used to generate and retain human capital, it becomes a basis of long-term competitive advantage, even in challenging business environments like the global COVID-19 epidemic (Seleim & Khalil, 2011). In other words, organizations that possess an effective knowledge management process may become more resilient to the global pandemic of COVID-19 due to the generation, sharing and application of knowledge from the human capital of the organization. This was possible because effective knowledge management is a significant element of human capital that aid in enhancing employees' skills and competence, therefore, improving organizations' ability to adapt to changing business environment through its organizational resilience. This finding is consistent with dynamic capabilities theory which states that the capacity of organizations to acquire, synthesize, and reconfigure not only internal but also external knowledge to handle rapidly changing contexts is the key to organizational resilience (Teece, Pisano & Shuen, 1997).

To improve on the organizational resilience of commercial banks in Nigeria, it was therefore concluded that to some extent, human capital in the form of individual team roles and their specific contributions is important to deal with environmental concerns through sharing information and expertise quickly. Moreover, these other resources can only be made productive by the use of human capital people. Therefore, the organizational resilience of any productive organization depends on human capital. As a result, the CBN's Financial System Strategy (FSS) 2020 offered a strategy plan for creating and maintaining high-calibre talent essential to fulfil the general FSS 2020 Vision (Soludo, 2007).
It is therefore recommended that as the impact of the crisis increases, the focus should be more on mind and body of employees and less on predefined roles and

responsibilities. This implies that the management of commercial banks should be more concerned about having a culture of coach through training to develop the specific and general knowledge of its employees. Training the mind to be relaxed even in stressful conditions is an important part of gaining resilience. Coaches assist employees by identifying their skills and discovering how to apply them to solve problems. This would most likely improve organizational resilience as employees' competence through knowledge, expertise, skills, experience, and abilities become the sources of new ideas and innovation not only during business-as-usual but also during turbulent environments that threaten organizational existence. Training and development could be done through facilitating an employee formal education by contributing part or whole of educational fees or the process of on-the-job training such as workshops to increase its employees' human capital.

Knowledge management has been increasingly crucial since the emergence of the knowledge-based economy because it acts not only as a direct link but also as a bridge between human capital and organizational resilience. Therefore, it is recommended firms should foster and make full use of knowledge, be conscious of complex external environment changes, be equipped with the ability of knowledge creation, sharing and applications. In other to ensure an effective knowledge management process (i.e., knowledge creation, knowledge sharing and knowledge application), This study further recommends that organizations should foster a positive environment at all levels of the organization by ensuring that all human resources are adequately endowed with the appropriate knowledge generation system and that they are prepared to communicate that knowledge among themselves to make decisions during disruptive situations. At the same time, organizational leaders must promote the creation and execution of knowledge management because knowledge has been recognized as a critical resource for organizational resilience.

6. Limitation and Suggestion for further studies

This study has limitations that may serve as avenue for further studies. First, this study conceptualized organisational resilience as a one-dimensional construct. Future research can divide organisational resilience measures into two or more segments as proposed in the literature, and investigate their relationship with intellectual capital. Second, this study tested hypotheses with a questionnaire instrument that provided only cross-sectional data; this study did not involve the collection of longitudinal data to observe changes in intellectual capital throughout the knowledge management process. Therefore, future studies can develop a

longitudinal study to find intellectual capital differences in the knowledge management process that could lead to organisational resilience.

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