

IMAGE: A MAP OF THE STARS OF THE ORION CONSTELLATION

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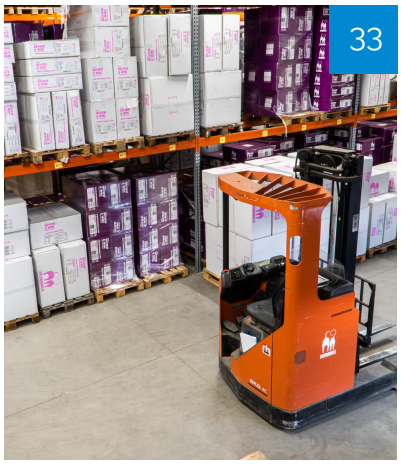
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The Moderating Effect of Organizational Culture on the Relationship between Knowledge Transfer Strategy and Performance of Medium Size Family Owned Businesses in Selected Counties in Kenya

Mworia Kaibung'a, Anne Muchemi & Dr. Evans Mwasiaji

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ABSTRACT

Family owned medium businesses contribute significantly to Kenyan economic development. Despite this vital contribution, family owned medium enterprises have been performing poorly. Profits, sales growth, intergenerational transition and family members' satisfaction has been proved to be low. Extant literature shows that knowledge transfer strategy may influence performance of medium size family owned businesses and organizational culture may moderate the relationship. This study therefore sought to establish the moderating effect of organizational culture on the relationship between knowledge transfer strategy and performance of medium size family owned businesses in Kenya. The study was premised on institutional and balanced scorecard theory. The philosophy applied was positivism while the research design was descriptive and explanatory approaches. The study targeted four senior managers of 320 mid-size family businesses in selected counties in Kenya. Proportionate stratified sampling of the manufacturing, service and trade sectors were used to establish a representative sample of 560 respondents. A questionnaire was used to collect primary data, and a document review guide was used to obtain secondary data.

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The Moderating Effect of Organizational Culture on the Relationship between Knowledge Transfer Strategy and Performance of Medium Size Family Owned Businesses in Selected Counties in Kenya

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ABSTRACT

Family owned medium businesses contribute significantly to Kenyan economic development. Despite this vital contribution, family owned medium enterprises have been performing poorly. Profits, sales growth, intergenerational transition and family members' satisfaction has been proved to be low. Extant literature shows that knowledge transfer strategy may influence performance of medium size family owned businesses and organizational culture may moderate the relationship. This study therefore sought to establish the moderating effect of organizational culture on the relationship between knowledge transfer strategy and performance of medium size family owned businesses in Kenya. The study was premised on institutional and balanced scorecard theory. The philosophy applied was positivism while the research design was descriptive and explanatory approaches. The study targeted four senior managers of 320 mid-size family businesses in selected counties in Kenya. Proportionate stratified sampling of the manufacturing, service and trade sectors were used to establish a representative sample of 560 respondents. A questionnaire was used to collect primary data, and a document review guide was used to obtain secondary data. Face, construct, and content validity were all ensured with the help of experts and supervisors, as well as confirmatory factor analysis with factor loadings of 0.4 or above. Cronbach's Alpha was used to measure reliability, and a coefficient of 0.7 was found to be satisfactory. Descriptive and inferential statistics were used to analyze the data. Inferential analysis examined moderating effect of organizational cultute on the relationship between knowledge transfer strategy and performance of medium size family owned businesses in Kenya through the use of multivariate analysis and hypothesis testing. Results were presented using charts and tables. It was established that firm culture has positive and significant moderating effect on the link between knowledge transfer strategy and medium size family owned businesses performance in selected counties in Kenya. The study recommends that family owned medium size businesses should empower both family and non-family staff members to make decisions for the best interest of the organization. Such firms should also involve professionals who could even be non-family members in management of the businesses. Medium size family owned businesses should also have a working organizational structure where every position whether held by a family or non-family member is respected.

Keywords: organizational culture, knowledge transfer strategy, family owned medium size businesses, performance of family owned businesses.

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I. INTRODUCTION

In all types of companies, performance denotes a measure of objectives, outcomes and aspiration significant to different stakeholders in a firm (Seijts, Latham, Tasa, & Latham, 2004). Businesses are often seen as economy welfare drivers regardless of their size by improving the economy, providing job opportunities, trade and merchandise, which lead to successful businesses. Businesses are of different types depending on ownership and those owned by families are considered to be one of them. Abouzaid (2011) stated that businesses owned by families are the most common and oldest type of business firms globally. Family organizations have been vital business landscape features for many years and today are still significant. They range from small, medium/large and are in every sector and the three industrial revolutions (Andrea & Mary, 2013). Knowledge transfer strategy is key in sustaining good performance in family owned businesses.

Knowledge transfer (KT) strategy has brought about a novel method of resource sharing and experience to all individuals; this has formed a basis of solid existence of explicit and tacit knowledge that stresses the value of experiences and ideas. The approach of knowledge management use has been in different industries like technology, education, business and social (Hussin & Mokhtar, 2018). Suppiah and Sandhu (2011) argued that the culture of an organization plays a vital role in transfer of knowledge in organizations. Firm performance may rely on the set regulations, norms, traditions, beliefs, values and ideologies embedded in the organization (Amabile, 1996).

1.1 Knowledge Transfer Strategy

knowledge transfer strategy is a systematic process of disseminating knowledge from generation to generation or between members in a similar generation (Barroso, Sanguino & Bañegil, 2013). People in non-family firm environments are unlikely to share their knowledge with others, because they see them as competitors in the labour market (Trevinyo-Rodriguez & Tapies, 2006). However, within family businesses KT is more easy than in other firms (Cabrera-Suárez *et al.,* 2013). The reason is because of stable, personal, long-term, trust-based relationships between individuals which are essential foundations for effective management of knowledge. Selecting a suitable knowledge transfer strategy highly determines knowledge transfer success (Law & Kamoche, 2015).

Lopez and Ramon (2004) recommended organizational learning strategy, personalization strategy, codification strategy and communities of practice as strategies that can be adopted for effective transfer of knowledge. Hung et al., (2008) proposed organizational learning strategy, codification strategy, mentorship strategy and personalization strategy as strategies for knowledge transfer. This study adopted organizational learning, codification, personalization and mentorship strategies as the measures of knowledge transfer as they are applicable to medium size family businesses.

1.2 Organizational Culture

Culture explains the underlying group of values and norms that are precise to a particular group and forms and distinguishes beliefs, behaviors and individuals' personal traits in the peculiar group (Thomas &Mueller, 2000). Also, the culture of the organization comprises a myriad of beliefs, norms, regulations, traditions and ideologies ingrained in a company which impacts on the manner the firm undertakes its job (Poškienė, 2006). Culture of an organization is significant in the integration internally and adaptation on the outside, which are essential factors for performance results. Though culture may provide a fairly stable and smooth pathway for enhancing firm performance, little has been researched on the same (Owino & Kibera, 2019).

According to Barney (1986), resource based view theory, has highly increased organi- zations' understanding on the importance of strategic resources in enhancing competitive advantage. The firm culture has traditionally been seen as a vital intangible resource in ensuring competitive advantage (Denison, 1990; Hayton, & Salvato, 2004). The culture of an organization is of

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immense significance in family businesses, where a group of interests, values and belief are impacted by relations in the family (Chrisman, Chua, & Steier, 2002). Firm culture is a vital ingredient for the performance of the firm and leads to competitive advantage sustainability. Culture is also an element that is essential in unifying different cultures in an organization in the corporate structure (Kenny, 2012). The managers in a company may develop an appropriate culture to incorporate the firm culture and its performance. Liu (2010) explains that culture and knowledge are highly integrated in a company.

Quinn (1988), identified hierarchy, market, clan and adhocracy as the four dominant organizational cultures. So, while balancing the needs of numerous shareholders, organizations make some choices in the level in which the cultures show norms and values that represent four varied orientations on culture (Morgan & Vorhies, 2018). The culture of clan constitutes relations among people (O'Reilly et al., 1990; Chatman & Caldwell, 1991) showed by in-house unity, staff welfare, commitment and loyal nature of staff to the firm. Adhocracy/creative culture is a development form of culture showed by taking risks, change and innovation (Quinn & Spreitzer, 1991). Market (competitive) culture takes place when there is control and stability. This culture is rational and stresses on achievement and efficiency (Quinn & Spreitzer, 1991). Hierarchy (control) culture in placed between internal focus of the firm and dimensions of stability/control. This culture shows the norms and values linked to bureaucracy (Quinn & Spreitzer, 1991).

Gibb (2004) identified four common cultures dominant in family owned businesses: the laissez-faire, paternalistic, professional and participative cultures. In paternalistic culture, relationships are arranged hierarchically and members of the family remain with all authority and power and come up with vital decisions (Koiranen, 2003). The family does not trust outsiders and employees are closely supervised. However, the members in the family are given special treatment. With participative culture, the family power and status are not stressed. Staffs are trusted and the staffs are given an opportunity to show and improve their talents by the family. In Laissez-Faire Culture, the members in the family are treated specially and staffs are required to accomplish family goals. Members experience excessive freedom; staff are perceived as trustworthy and given the role to make decisions (Baykal, 2019). The pattern on professional culture is available in organizations where the family makes a decision to put the running of the organization to non-family professional managers where individual motivation and achievement are significant. This study adopted bureaucracy, employee empowerment and family involvement identified from Gibb (2004) analogy on culture as measures of organizational culture as they are more specific to family firms.

1.3 Family Owned Medium size Businesses in Kenya

A FOB is an organization where the majority voting is by the family in control; plus, the founders who aim to transfer the business and knowledge on to their offspring's (Gulzar & Wang, 2010). In the present years, there has been a proposal of multi-method definitions. Research by Smyrnios, Romano and Tanewski (2017) opined that a business entity can be considered as a family one when it has at least met four criteria which include: one family holds fifty percent or more of the ownership, two or more families hold fifty percent or more of the ownership and a group of one family controls the firm effectively or most of the senior managers come from the same family.

Kenya is considered one of the most developed economies in Eastern Africa. Family owned businesses are approximated to be the greatest contributors to most countries' GDP (Rodrigo, 2013). In Kenya, majority of medium size family businesses owned by families are well known for their spirit of innovation and entrepreneurship and the main drivers in the economy of Kenya. There are several challenges that medium size businesses owned by families in Kenya face especially in the business environment full of turbulence. Most of the challenges are based on ownership and reward, conflict, profitability,

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benefits and pay, succession and family member's engagement (Waweru, Mutuma & Chege, 2011). Waweru *et al.,* (2011) indicated that in Kenya, the average period a family-owned business can exist is 24 years. According to Otieno (2008), Kijana Wamalwa's family is engaged in a management tussle which has affected the performance of the businesses. Lack of effective generational management was linked to the dismal performance of Thuo and Partners Company that was dealing in stock brokerage, Brokers and Discount Securities Company by Nyaga and company which lead to their ultimate closure (Aron, 2015).

Despite the many challenges faced, there are still success stories. Sarit Centre is a perfect example of firms in Kenya that have transitioned to third generation. Sarit Centre is a shopping mall offering diversified services and is ranked among the top leaders in East Africa. The business is currently under the management of Kenyans who are third generation from the business founders who are traced to have come to the country in early 20th century (Whitehead, 2012). Other most successful cases are those of the Ndegwa family, the Chandaria and the Shah family companies. Majority of SMEs are businesses owned by families (Esuha & Fletcher, 2013). Over the recent years, a number of family business failures have been highlighted by the media, most of them being SMEs. Such occurrences motivated this study to establish whether knowledge transfer strategy can trigger improved performance in family owned businesses in Kenya.

1.4 Performance of Family Owned Businesses

Barney (2011) defines performance as the strategic results used by organizations to achieve their success or goals. Firm performance comprises the financial and non-financial measures that assist in examining the level to which a firm goals have been achieved (Kaplan & Norton, 2012). A study by Norton and Kaplan (1992) revealed that firm performance ought to be measured based on non-financial indicators like quality, delivery time, innovation and flexibility. Family business non-financial goals such as intergenerational transition or continuity, brand presence and family members' satisfaction levels can complement family business financial goals of profitability, return on investment and return on equity; and, alignment of family and business objectives lead to better results for the business and family (Craig & Moores, 2010, Carr et al., 2011).

Performance in family enterprises differ from the non-family ones because families may come up with objectives in their own ways and may be more than financial results (Williams, 2015). In studies on family firms, financial metrics are used by researchers in measuring performance (Astrachan & Jaskiewicz, 2018; Zellweger & Sieger, 2012). Moreover, performance measurement only with metrics on financial performance assumes legitimacy and dominance of financial objectives in an organization's goals (Venkatraman & Ramanujam, 2016). However, concerns have been expressed by some researchers on the assumptions that finance goals are the primary goals of family firms (Westhead 1 & 2017). In this study, performance will be measured by profits, sales growth, intergenerational transition and family members satisfaction.

1.5 Problem Statement

Businesses owned by families form part of the most significant contributors to GDP and c employment creation in most countries of the world (Venter *et al.,* 2016). Despite the vital contribution by these businesses, their performance across generations is low. SMEs owned by families in Kenya contribute over 70% of the nation's GDP. This is in spite of the many issues surrounding this sector including low performance as compared to non-family firms, high mortality rate especially after the exit of the founder, low finances among others (Mburu, Gichira & Kyalo, 2017).

In Kenya, it has been established that 80 to 90% of every business enterprises are family owned but there have been concerns on their performance and the level at which these businesses fail before getting to the fourth and fifth generation or very few are able to that level. Many family businesses start facing severe performance challenges from

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their second generation (Pinfold, 2011). The statistics in Kenya indicates that only 30% of the family business sustains good performance for up to 2nd generation with only 12 percent making it to the third generation and a paltry 3% get to the fourth generation (Ntale *et al.,* 2018).

According to PWC year 2017 survey on performance of family businesses in Kenya, majority of firms performed poorly on profit and sales growth parameters. Of the firms surveyed, 73% recorded negative profits and sales growth especially in 2nd and subsequent generation firms. Intergeneration transition was lowest at 3% after 3rd generation (PWC report, 2019). Transitioning from generations to the other is the greatest challenge in Kenyan owned family business model. Customer and family members' satisfaction as measured by customer and family members' satisfaction index was found to be declining from 86%,78%,64%,60% and 70%,62%,55%, 52% respectively for the years 2016, 2017, 2018 and 2019 survey in that order. Family members' satisfaction was very low from the 2nd generation in most of the firms in the four years under review (PWC reports, 2016, 2017, 2018 and 2019). The need to examine why many family businesses don't attain the desired performance is a concern that this study sought to address.

Reviewed literature indicates that various studies on family businesses in Kenya have been carried out, but studies on the role played by organizational culture on the relationship between knowledge transfer strategy and performance of medium size family owned businesses has not been exhaustive. Syed-Ikhsan and Rowland (2004) noted that there are insufficient studies done on knowledge transfer strategy and organizational culture, and fewer in developing nations. The high number of studies that focused on establishing knowledge transfer strategy as a vital field explains large organization practices. On the contrary, there is noted lack of studies on role of organizational culture on the relationship between knowledge transfer strategy and performance of medium size family owned businesses (Lavía & Otero, 2011). Also, the studies done on knowledge transfer strategy and culture in family enterprises are few (Mazzola, Marchisio & Astrachan, 2008). Actually, there is a gap in the understanding the role of organizational culture in ensuring effective transfer of both tacit and explicit knowledge within and across generations in family businesses (Trevinyo-Rodríguez & Tàpies, 2010).

Gibb (2004) studied Culture and Continuity in Family Firms which was only a conceptual review. From the considered studies, it is confirmed that most of the studies on knowledge transfer and performance of family businesses have been carried outside Kenya and Africa. The extant literature reviewed has also shown that studies done on knowledge transfer strategy and performance didn't incorporate a moderating variable. This study was undertaken to fill the existing contextual, conceptual and empirical research gap as highlighted above by conducting a research to establish the moderating effect of organizational culture on the relationship between knowledge transfer strategy and performance of medium size family owned businesses in selected counties in Kenya.

1.6 Objectives of the Study

To determine the moderating effect of organizational culture on the relationship between knowledge transfer strategy and performance of medium size family owned businesses in selected counties in Kenya.

1.7 Research Hypotheses

The study tested the following null hypotheses:

$H_{01:}$ Organizational culture does not have significant moderating effect on the relationship between knowledge transfer strategy and performance of medium size family owned businesses in selected counties in Kenya.

II. LITERATURE REVIEW

2.1 Institutional Theory

The foundations of this theory were laid from 1977 to 1983 after publications by Rowan and Meyer (1977), Zucker (1977), Meyer and Scott (1983), DiMaggio and Powell (1983) and Zucker1 (1983). They stated that an institutions environment

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highly impacts the formal development structure more than pressures from the market. The theory seeks to explain the expansion of rules, norms and cultural needs to which firms should follow if they are to get support legitimacy (Meyer& Scott, 1983). The function of social, cultural, political, and economic frameworks through which organizations operate and earn legitimacy is the focus of institutional theory.

Scott (2001) explained that firms provide the game rules and define the available operation ways through discouragement, constraining or encouragement of certain patterns of behavior. They influence the process of decision making by providing signs of what should be acceptable and determines the people socialization of norms and behaviors in a certain society. While institutional theory is recognized broadly as a major noticeable methods to firm research now (David & Bitektine, 2009; Greenwood et al., 2011), a lot of differences are there between scholars regarding the references of important aspects and the main assumptions about how social norm and anticipations impact firms. For instance, the word 'institution' is used to show certain firm practices or need (Meyer & Rowan, 1977), while it can also be used to mean whole businesses (Selznick, 1949) or to wide network of norms and values that feature in a certain group in the society (Friedland & Alford, 1991).

A lot of knowledge is rooted in employees' minds (Drucker, 1999); so, firms ought to encourage the staff to share knowledge, experiences and data to circulate, spread and accumulate knowledge towards finally forming major firm values. Other than organizational norms, trust has been identified as an essential aspect that influences the sharing of knowledge and innovative performance (Gilsing & Nooteboom, 2006). Individuals create knowledge; so, employees' interactions are essential in developing and creating novel knowledge for organizations. But, trust is the vital factor that pushed employees' interaction (David & Bitektine, 2009). This theory was anchor organizational culture variable.

2.2 Balance Scorecard Model

The theory was first propounded by Norton and Kaplan in 1992 in an article published in Harvard Business review. The theory postulates that to measure organization performance, financial measures, like ROI or operating profit, are not adequate. To achieve a wider view on performance, non-financial indicators should also be added. Selecting the measures also impacts on managers' behaviors (Kaplan and Norton, 1992). The measures selected should be relevant to the company strategy. There is a problem in financial measures since they provide past report and does not guide on what to do afterwards (Kaplan and Norton, 1993).

The theory further argues that the performance indicators should be chosen from financial, customers, internal procedures and learning and growth (Norton & Kaplan, 1992). By choosing a limited number of measures, the management can stay focused on them and not have too much to follow while similarly perceiving the company from four different perspectives. The numerous indicators prevent the organization from being too short-sighted in seeking fast profits in the short term while forgetting about development in the long run (Kaplan & Norton, 1992). This theory anchors performance variable of the study.

2.3 Empirical Literature Review

Tedla (2016) studied the effect of firm culture on firm performance. The goal was to find out appropriate strategies that companies can use to determine firm culture to enhance performance. The study applied Denison model for firm culture as the study conceptual framework. Purposive sampling of 20 directors from a firm group on Ethiopia took part in the study. The studies concluded that absence of effective culture in a firm and poor integration of culture impact on firm performance and reduce stakeholders' earnings.

Zakari, Poku and Owusu-Ansah (2013) researched on the culture and firm performance in Ghana banking industry. Using11the1denison's Organisational Model, because of its integrative nature and stress on internal and external

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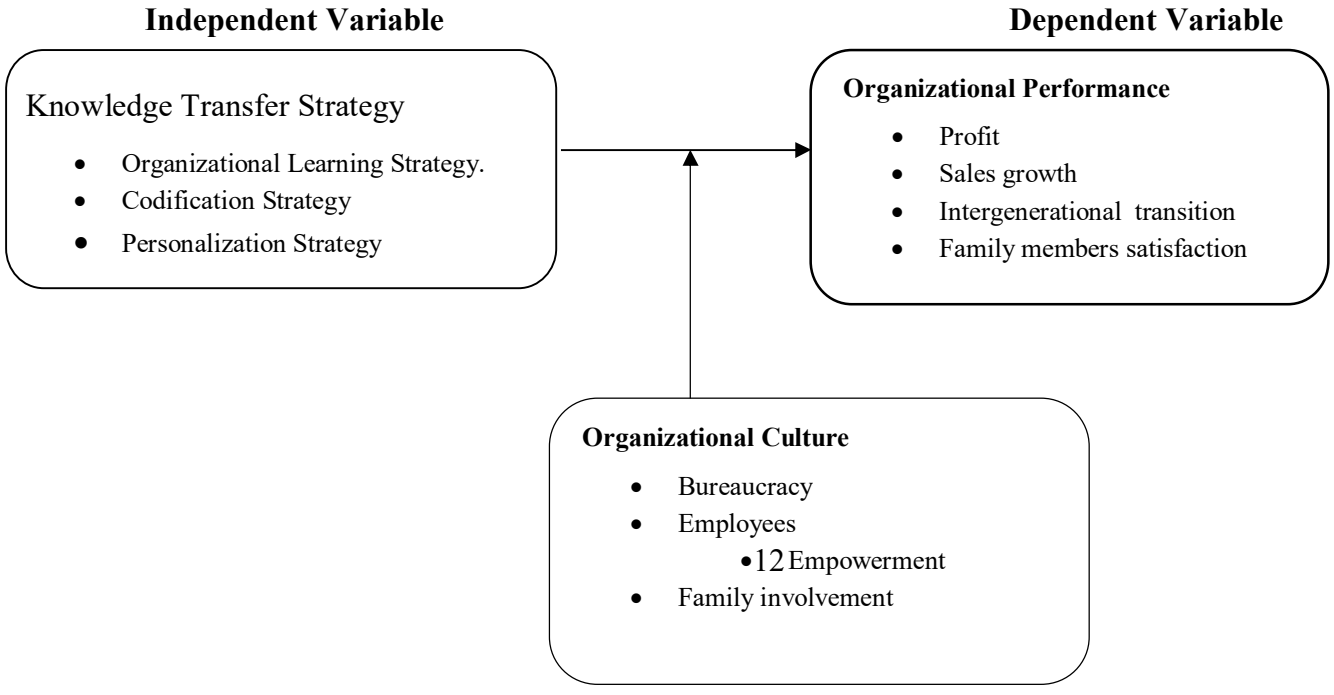
elements, the study evaluated the link between culture and firm performance in Ghana. Data was collected from 9 Ghana banks comprising 60 percent of banks which were private, public and multinational. The study respondents were 296. It was noted that though there were great differences between banks in regard to culture, there were no great differences in performance. Notably, among the banks none was more innovative than other. Generally, organization culture and performance in the banks were positively related. In every case, the culture trait was the mission it had the greatest potential of positively affecting performance.

Ahmed and Shafiq (2014) studied the effects of firm culture on firm performance in telecommunication industry. The study purpose was to explore how firm culture affects performance in the organization so as to find out how firm culture help in improving firm performance. Firm performance was measured by use of balance score card. Quantitative methods were used whereby a questionnaire was adopted for data collection. The results indicated that all culture dimensions' impact on various perspectives of firm performance.

Zafer and Pinar (2012) researched on the impact of firm culture and innovativeness on healthcare firms' performance. The study aim was to determine firm culture and innovativeness effects on company performance. The study administered a questionnaire survey to 332 staff of 65 private hospitals. Data analysis was by use of SPSS 15 by use of multivariate data analysis methods through the hypothesis. The results of the study found that innovativeness and culture impact on firm performance in hospitals.

2.4 Conceptual Framework

Conceptual framework in research is based on the reviewed literature both conceptual and empirical. This is presented graphically to show the connection between different variables affecting and determining the objective of the study relationships.



Source: Researcher(2020)

Figure 1: Conceptual framework

The framework presupposes that organizational performance is the dependent variable, an is influenced by the following independent variables: knowledge transfer strategy. In the proposed model, culture of the organization is the moderating variable of the link between

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knowledge transfer strategy and performance of medium size family owned businesses.

III. RESEARCH METHODOLOGY

The study used positivism research philosophy. Positivism basis is that research may be objective, the researcher is independent and results are valid, reliable and replicable (Shaun & Remenyi, 2004). According to positivists, there is stability in reality and therefore it is possible to view and describe them from objective viewpoint. Positivism research philosophy seeks facts of social phenomena regardless of the subjective nature of the individuals; it presumes social world exists objectively (Maylor, Blackmon & Huemann, 2016). The research design used was descriptive survey. Creswell and Clark (2007) explains that the descriptive method is about what, who and how of a situation about the study. Berg (2008) supported this by arguing that this study design is aimed at producing statistical data and gives the room for findings generalization and flexibility. The study target population comprised of 320 medium size family owned businesses operating in 44 counties in Kenya as at December 2020 as provided for by Kenya National Bureau of Statistics. The firms were categorized into three; manufacturing, service and trade. Mid-size family owned businesses will be chosen because of the imminent challenges due to their growth, their importance in contribution to GDP and finally data availability due to the survey conducted by KNBS annually. The study sample frame was finance directors, general managers, human resource managers and marketing managers. The study used simple and stratified random sampling methods to determine a sample of 175 firms from a total of 320 firms. From each firm a finance director, a general manager, a human resource manager and a marketing manager acted as respondent totaling to 54% of the respondents. The sample of 175 firms was achieved by calculation of a population of 320 respondents at 95 percent level of confidence and 0.05 error. In addition, inferential statistics were carried out using correlation and regression analysis to establish the extent and nature of the relationship between the variables of the study (Jobson, 2012). The study used the adjusted coefficient of determination (R-squared (R2) to show the extent to which the changes in which family owned medium size business performance is explained by changes in organizational culture in selected counties in Kenya. Additionally, F-statistic was also tested at a confidence level of 95% to test the existence of a significant relationship between organizational culture and performance of medium size family owned businesses in selected counties in Kenya. P-values were used to help make a decision on test of hypothesis at 0.05 significant level and at 95% confidence level (Sekaran, 2011). The sample of 175 firms was achieved by calculation of a population of 320 respondents at 95 percent level of confidence and 0.05 error by use of the below formula used by Kothari (2004).

$$n = \frac{z^2 \cdot N \cdot \partial_P^2}{(N-1)e^2 + Z^2 \partial_P^2}$$

Where,

n =Size of sample

N = Population size(320)

e = Error term

∂_ρ = population standard deviation (0.5)

Z = standard variate at 95% level of confidence (1.96).

Table 1: Distribution of Sample

Operational Area	Number (N_i)	Sampling factor	Sample size
Finance directors	175	0.8	140
General managers	175	0.8	140
HR Managers	175	0.8	140
Marketing manager	175	0.8	140
	$\sum N_i = 700$		**560**

Source: Researcher (2020)

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IV. RESPONSE RATE

A response rate of 75%, according to Nulty (2011), is acceptable for analysis, drawing conclusions, and inferring about a population. Furthermore, Fincham (2010) states that for analysis, a response rate of 60% or above is appropriate. Furthermore, according to Kothari (2012), a response rate of 50% should be considered normal, 60 percent to 70 percent ought to be considered sufficient, and beyond 70 percent ought to be considered outstanding. This infers that the 82.5 percent response rate was adequate for analysis, drawing conclusions, and reporting.

Questionnaires	Sample Size	Response rate
Dully filled Questionnaires	462	82.5
Unreturned	98	17.5
Total	560	100

V. RESEARCH FINDINGS AND DISCUSSION

5.1 Validity and Reliability of the Research Instruments

Validity is about the integrity of conclusions generated from a study. It is the level at which a tool measures what it purports to measure. Saunders et al. (2012) indicates that validity is the degree whereby methods of data collection accurately measures what it aims to determine and the level to which study results are what they should be. Both Content and construct validity were determined. Content validity of the study tool was determined by seeking expert opinion in the study field who include the lecturers and supervisors in the business school as suggested by Kane (2013) while construct validity was determined by conducting Confirmatory Factor Analysis and based on a recommendation by Field (2009), factor loadings greater than 0.4 were adopted for valid constructs. Reliability is inclination to consistency and so, numerous measures of a similar concept or similar measurement done repeatedly over time can provide similar results (Treiman, 2009). Reliability was tested using Cronbach Alpha. Field (2009) notes that a value of Cronbach alpha of at least 0.70 shows that the research tool is reliable.

Table 2: Reliability Statistics

Variable	No of Items	Cronbach's Alpha
Organizational Culture	8	.750
Performance	4	.764

The reliability test results shown in table 2 above shows that the scales for the variables are reliable as they are more than the Cronbach's Alpha value threshold of 0.7 recommended by Field (2013). Accordingly, none of the items in the questionnaire were deleted after the pilot study. The tool was adequate for use in the final study.

5.2 Descriptive Statistics for Organizational Culture

This section presents descriptive analysis for independent variables, dependent variable, moderating variable and finally mediating variable. The study used ai5-pont Likert scale questionnaire to measure the variables.

Participants were required to indicate their level of agreement with on statements related to firm culture and performance of family owned businesses in Kenya using the scale. iNot at all, 2-Littlei extent, 3-Moderat eiextent, 4-Largei extent, 5-iVery large extent, the findings obtained were as presented in Table 3.

Table 3: Descriptive Statistics for Organizational Culture

	N	Min.	Max.	Mean.	Std. Dev.
Bureaucracy					
In our organization every department has an established organizational chart	462	1.00	5.00	3.9329	.64354
Decision making in our organization is done through a organized process	462	1.00	5.00	4.0043	.62831

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Employees empowerment					
In our firm employees take part in decision making to a small extent	462	1.00	5.00	3.9524	.67966
Our organization employees are given an opportunity to make decisions	462	1.00	5.00	4.0108	.64694
Family involvement					
Family members are involved in ownership of p of the business	462	1.00	5.00	3.8442	.75786
Business is managed by professionals with family members play no active role.	462	1.00	5.00	3.6580	1.39099
Family members take part in the management of the organization	462	2.00	55.00	3.5671	.93082
Aggregate score				3.868	1.045

Source: Survey Data (2021).

The findings specifically show that the participants to a moderate extent agreed on bureaucracy that decision making in their organization is done through an organized process (M=4.0043, Sd=.62831), and to a little extent that in their organization every department has an established organizational chart (M=3.9329, Sd=.64354). Respondents also moderately agreed on employees' empowerment that their organization employees are given an opportunity to make decisions (M=4.0108, SD=.64694), and that in their firm, employees take part in decision making to a little extent (M=3.9524, SD=.67966).

The outcomes also show that the participants to a little extent agreed on family involvement that family members are part of ownership of part of the business (M=3.8442, SD=.75786), to a little extent that business is managed by professionals with family members playing no active role (M=3.6580, SD=1.39099), and to a little extent that family members take part in the management of the firm (M=3.5671, SD=.93082). Overall, the respondents, to a moderate extent agreed on the statements on organizational culture as a knowledge transfer strategy as illustrated by an aggregate mean of 3.868. This infers that the issues on bureaucracy, employee empowerment and family involvement are to a moderate extent implemented by management of family owned medium size firms. The aggregate SD of 1.045 implies no much variation regarding respondent views.

5.3 Descriptive Statistics for Performance of Family Owned Medium Size Businesses

Performance of a business is a set of both financial and non-financial indicators capable of assessing the degree to which organizational goals and objectives have been accomplished. In this study, intergenerational transition, profits, sales growth and family members' satisfaction were used to measure performance. The participants were asked to rate how much they agreed with certain assertions that related to performance of family owned medium size businesses in Kenya. They used the scale iNot at all, 2 -Littleiextent 3-Moderat eiextent, 4- Larg eiextent, 5-iVery large extent. The findings presented in tablei4 below;

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Table 4: Descriptive Statistics for Performance

	N	Min.	Max.	Mean	Std. Dev.
Intergenerational transition					
Our company has seamlessly transitioned to our current generation	462	1.00	5.00	3.5476	1.36142
Profits					
The levels of profits in the organization have improved from period to period and from generation to generation	462	2.00	5.00	3.5974	.91873
Sales growth					
The levels of sales in the organization have improved from period to period and from generation to generation	462	1.00	5.00	3.7965	.75513
Family members satisfaction					
Family members are happy with the company progress.	462	1.00	4.00	3.8030	1.1091
Aggregate score				3.686	1.036

Source: Survey Data (2021).

The findings show that the respondents to a little extent agreed on intergenerational transition that their company has seamlessly transitioned to their current generation (M=3.5476, SD=1.36142). On profits, participants agreed to a little extent that the levels of profits in the organization have improved from period to period and generation to generation (M=3.5974, SD=.91873). The respondents to a moderate extent agreed on sales growth that the levels of sales in the organization have improved from period to period and generation to generation (M=3.7965, SD=.75513). It was further established on family members' satisfaction that the respondents moderately agreed that the family members are happy with the company progress (M=3.8030, SD=1.1091).

On average, with the statements on performance of family owned medium size businesses, the respondents to a moderate extent agreed with the statements on profits, sales growth, intergenerational transition and family members' satisfaction with an overall mean of 3.686. The aggregate SD of 1.036 implies no much variation regarding respondent views.

5.4. Correlation Analysis for Knowledge Transfer Strategy

Table 5: Correlation Analysis Results

		Performance	Organizational learning	Codification strategy	Personalization strategy	Mentorship strategy	HR competences
Performance of family owned business.	Pearson correlation	1					
	Sig. (2-tailed)						
	N	462					
Organizational learning strategy	Pearson correlation	.696**	1				
	Sig. (2-tailed)	.000					

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Codification strategy	Pearson correlation	.635**	.275**	1			
	Sig. (2-tailed)	.000	.000				
	N	462	462	462			
Personalization strategy	Pearson correlation	712**	158**	.287**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	462	462	462	462		
Mentorship strategy	Pearson correlation	.707**	.196**	.235**	.166**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	462	462	462	462	462	
Human resource competences	Pearson correlation	.674**	.210**	.302**	.447**	.245**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.002	
	N	462	462	462	462	462	462
**Correlation is significant at the 0.05 level (2-tailed)							

Source: Research data (2021)

From the findings in table 5 above, organizational learning strategy has a strong positive correlation with firm performance (r=0.696, p-value=0.000). Since the p-value obtained (0.000) was below the selected significance level (0.05). The findings also show that codification strategy has a strong positive correlation with performance (r=0.635, p-value=0.000). Since the p-value obtained (0.000) was below the selected significance level (0.05),I the relationship was icon sidereditoibei significant. The findings agree with those of Singh and Zollo (2014) that accumulation of tacit knowledge and performance were significantly related in highly homogenous experiences and codification of knowledge enhances performance when there is high post-acquisition integration in situations where the company challenge is complex.

Personalization strategy was established to have a very strong positive correlation with firm performance (r=0.712, p-value=0.000). Because the p-value obtained (0.000) was less than the selected significance level (0.05), the relationship was considered to be significant. The findings concur with the findings of Njenga (2019) that personalization and performance had a significant and positive link. In the data, there was no violation of the homoscedasticity criterion. Also, mentorship strategy had a strong positive correlation with performance in the organization (r=0.707, p-value=0.000). As the p-value obtained (0.000) was below the selected level of significance (0.05), the relationship was considered to be significant. The outcomes are in line with those of Neupane (2015) that mentoring has significant positive impact on staff and overall company performance.

Moreover, the study discovered that there is high positive correlation amid human resource competences and organizational performance (r=0.674, p-value=0.000). Since the p-value gotten (0.000) was below the selected level of revealed that there was a moderate positive correlation amid organizational outcomes and organizational culture with a coefficient of 0.589 and p-value 0.000 which is below the critical P-value of 0.05

5.5 Hypotheses Testing

To test the hypothesis, the study conducted multiple regression analysis. The outcomes were illustrated in Table 5 below

Table 6: Regression Model Summary

Model	R	R Square	Adjsuted A Square	Std. Error of the Estimate
1	.891[a]	0.794	.782	0.4468

Predictors: (constant), Organizational Learning Strategy, Codification Strategy, Personalization Strategy, Mentorship Strategy

Source: Survey data (2021)

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The results noted that the coefficient of correlation was 0.891 indicating the presesnce of a very strong link between the predictor variables (Organizational Learning Strategy,Codification Strategy,Personalization Strategy and Mentorship Strategy) and organiztional performance.In addition, Adjusted R^2 was 0.782 implying that there was 78.2% of variations in1performance1of medium size family owned businesses in selected counties in Kenya is explained by organizational learning strategy, codification strategy, personalization strategy and mentorship strategy. The remaining 21.8% imply that there are other factors that affected performance1of medium size family owned businesses which were not included in the model. The ANOVA was used to find out whether the data used in the study is significant. The results are as illustrated in Table 4.15 below

Table 7: Analysis of variance

Model		Sum of squares	df	Mean Square	Sig.	F
1	Regression	49.648	4	12.412	39.675	.001[b]
	Residual	174.341	557	0.313		
	Total	223.989	461			

Dependent variable: Family Businesses performance Predictors: (constant), organizational learning strategy, codification strategy, personalization strategy, mentorship strategy.
Source: Survey Data (2021).

From the ANOVA table 7 above, the parameters had a significance level of 0.001. This reveals that the data is ideal and can be used to make conclusions on the parameters of the population as the significance value (p-value) is below 0.05. The F calculated was more than F critical (39.675 > 2.388). This demonstrates that the model was fit in predicting1performance1of medium size family owned businesses in selected counties in Kenya.

Table 8: Regression Coefficients

Model		Unstandardized Coeffectients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	0.987	0.098		10.071	.000
	Organizational learning strategy	.343	.123	.374	2.789	.004
	Codification strategy	.631	.190	.584	3.317	.001
	Personalization strategy	.699	.117	379	3.410	.000
	Mentorship strategy	.450	.136	.365	3.294	.002

Dependent Variable: Family Business Performance

Source: Survey data (2021)

Table 8 above indicates that the Beta coefficients for the constant was 0.987 indicating that when we hold every of the elements impacting performance of medium size family owned businesses in selected counties in Kenya constant, the performance of medium size family owned businesses would be 0.987. The results also show that if we increase organizational learning strategy by one unit, performance of medium size family owned businesses in selected counties in

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Kenya should rise by 0.343 all other factors held constant. In addition, a unit change in codification strategy could cause 0.631 rise in performance of medium size family owned businesses in selected counties in Kenya every of the factors held constant. Moreover, a unit change in personalization strategy would result to 0.699 increases in outcomes of medium size family owned businesses in selected counties in Kenya holding every of the elements constant. Similarly, a unit change in mentorship strategy would cause a 0.450 rise in outcomes of medium size family owned businesses ceteris paribus. Thus, the model was as below:

Family Business Performance = 0.987+ 0.343 Org Learning Strategy + 0.631 Codification Strategy + 0.699 Personalization Strategy + 0.450 Mentorship Strategy

From the model above, personalization strategy had the highest effect on medium size family owned business performance followed by codification strategy then mentorship strategy and organizational learning strategy had the lowest effect on the performance of medium size family owned businesses in selected counties in Kenya. The study variables were significant at significance level of 0.05 as shown by their respective P-values. These results are in consistent with those of Kumar and Ganesh (2004) who concluded that knowledge transfer strategy allows family firms to harness knowledge hence sustainable performance. Further, Akhtar, Arif, Rubi and Naveed concluded that adoption of effective organizational learning strategy positively and significantly affected the firm performance. On the other hand, Njenga (2019) reached a conclusion that personalization and performance had a significant and positive link. Firms that implemented a personalized strategy to manage knowledge were also more likely to achieve high performance than those that did not. Neupane (2015) concluded that mentoring has significant positive impact on the overall company performance.

5.6 Correlation Analysis for Organizational Culture

Analysis of correlation was conducted to determine the strength of the link between organizational culture and performance of family owned medium size businesses in selected counties in Kenya. The outcomes were as illustrated in table 8.

Table 9: Correlation for Organizational Culture

		Performance	Organizational Culture
Performance of family owned business.		Pearson Correlation	
	Sig. (2-tailed)		
	N	462	
Organizational Culture	Pearson Correlation	.589**	1
	Sig. (2-tailed)	.000	
	N	462	462

Since the p-value gotten (0.000) was below the selected level of significance, the study revealed that there was a moderate positive correlation between organizational performance and organizational culture with a coefficient of 0.589 and p-value 0.000 which is below the critical P-value of 0.05

5.7 Regression Analysis for Moderated Relationship

The study's objective was to find out the moderating effect of organization culture on the association between knowledge transfer strategy and performance of medium-sized family-owned firms selected counties in Kenya. In this study Baron and Kenny (1986) two steps approach was adopted. The results are shown in tables 5, 6 and 7.

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Table 10: Model Summary for Knowledge Transfer, Organizational Culture, and Performance

Model	R	R Square	R Square	Std. Error of the Estimate
1	.653[a]	.426	.423	.66289
2	.654[b]	.427	.422	.66313

a. Predictors: (Constant), KT, Organizational Culture, Performance
*b. Predictors: (Constant), KT, Organizational Culture, Performance Org*KT*

Source: Survey Data (2021).

The first model 10 included knowledge Transfer strategy (KT), Organizational Culture and performance. The R squared between these variables and performance of medium size family owned businesses in Kenya was 0.426, which implied that 42.6% of the performance of medium size family owned businesses in Kenya can be explained by knowledge transfer strategy and organizational culture . However, in the second model, which constituted the interaction of knowledge transfer strategy and Organizational Culture, Org*KT, the r-squared was 0.427. This infers that the introduction of organizational culture in the second model led to a rise in r-squared, showing that organizational culture moderates the link between knowledge transfer strategy and performance of medium size family owned businesses in Kenya.

Table 11: ANOVA for Knowledge Transfer, Organizational Culture and Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	149.526	2	49.842	113.425	.000[b]
	Residual	201.258	459	.439		
	Total	350.784	461			
2	Regression	149.823	3	37.456	85.178	.000[c]
	Residual	200.960	458	.440		
	Total	350.784	461			

a. Dependent Variable: Performance
b. Predictors: (Constant), KT, Organizational Culture
*c. Predictors: (Constant), KT, Organizational Culture, Org*KT*
Source: Survey Data (2021).

The F-calculated for the first model, as indicated in Table 11, was 113.425, while the F-calculated for the second model was 85.178. Because the F-calculated for the two models was higher than the F-critical, 2.624 (first model) and 2.391 (second model), the two models were strong fits for the data and could thus be used to forecast the moderating impact of organizational culture on the link between knowledge transfer strategy and performance of medium size FOB in selected counties in Kenya.

Table 12: Regression Coefficients for Knowledge Transfer, Organizational Culture and Performance

Model		Unstandardized Coeffectients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.183	0.378		3.130	.629
	Organizational Culture	0.344	0.057	0.216	6.035	.001
	KT	0.504	0.074	0.650	6.811	.000

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2	(Constant)	1.959	0.632		3.100	.001
	Organizational Culture	0.437	0.171	0.549	2.556	.004
	KT	0.673	0.196	0.326	3.434	.003
	OC*KT	0.354	0.087	0.451	4.069	.001
a. Dependent Variable: Performance						

Source: Survey Data (2021).

Model 1 resulting from the first stage in regression modeling would be as follows, as shown in Table 12, by replacing the beta values as well as the constant term:

$$Y = 1.183 + 0.344\ OC + 0.763\ KT$$

Where: OC is organizational culture, and KT is knowledge transfer strategy.

The findings show that organizational culture has a statistically significant effect on performance of medium size family owned businesses in Kenya as shown by a regression coefficient of 0.344 (p-value=0.001). The findings further show that knowledge transfer strategy has a positive and statistically significant effect on performance of medium size family owned businesses in Kenya as shown by a regression coefficient of 0.504 (p-value=0.000).

By replacing the beta values as well as the constant term in the second regression model, modeli2 resulting from the second stage in regression modeling as below:

Family owned Businesses Performance= 1.959 +

$$0.437OC + 0.673KT + 0.354OC*KT$$

The model indicated that organizational culture had a positive and statistically significant effect on the performance as shown by a regression coefficient of 0.437 (p-value=0.004). Further, knowledge transfer strategy had statistically significant effect on performance of medium size family owned businesses in Kenya as shown by a regression coefficient of 0.673 (p-value=0.003). The results further show that the interaction between organizational culture and knowledge transfer strategy has statistically significant effect on the performance of medium size family owned businesses in Kenya as shown by a regression coefficient of 0.354 (p-value=0.001).

Table 13: Summary of the Hypotheses Testing

• Hypotheses	• Results	• Decision
H_{01}: Organizational culture does1not have significant moderating1effect1on1the relationship between knowledge transfer strategy and performance of medium size family owned businesses in Kenya	Multivariate linear regression analysis	Reject null hypothesis H_{01}

VI. CONCLUSIONS

The study sought to find out the moderating effect of organizational culture on the association between knowledge transfer strategy and performance of medium size family owned businesses. From the results of the study,it was concluded that organizational culture moderates the link between knowledge transfer strategy and performance of medium size family owned businesses.

RECOMMENDATIONS

The study concluded that organizational culture had a significant moderation effect on the relationship between knowledge transfer strategy and performance of medium size family owned

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businesses. The study therefore recommends that family owned medium size family owned firms should empower both family and non-family staff members to make decisions for the best interest of the organization. Such firms should also involve professionals who could even be non-family members in management of the businesses.

Medium size family owned businesses should also have a working organizational structure where every position whether held by a family or non-family member is respected.

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Hospitality Management: Role of Sociology in Teaching Organisational Behaviour

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INTRODUCTION

Organisational behaviour can be viewed as a social science discipline that is taught in business schools but has its intellectual roots in probably the advent of the 20th century. Organisational behaviour can be seen having two dimensions; one is related to the nature of the people of the organization and the behaviour, and the other one is the nature and behaviour of the business organization in its environment. There are two general theories of organizational behaviour, Micro and Macro. The micro theory dwells in small groups and individuals which is related to psychology. Macro theory, on the other hand, focuses on the business organization itself and also on its environment; in this case, sociology plays a major role. Apart from these a new update regarding 'Meso theory' has been emerged which is based on a simultaneous study on two levels, where one level is concerned with the group processes or with the individuals in the organization (Ferraz 2018). The other level deals with business or organizational processes and serves as a link to relate these two different levels of meso-theory. The main purpose of this essay is to discuss the role of sociology in teaching organistaional behaviour and also to exhibit a few proposals regarding hospitality management trainees or managers.

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Hospitality Management: Role of Sociology in Teaching Organisational Behaviour

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I. INTRODUCTION

Organisational behaviour can be viewed as a social science discipline that is taught in business schools but has its intellectual roots in probably the advent of the 20th century. Organisational behaviour can be seen having two dimensions; one is related to the nature of the people of the organization and the behaviour, and the other one is the nature and behaviour of the business organization in its environment. There are two general theories of organizational behaviour, Micro and Macro. The micro theory dwells in small groups and individuals which is related to psychology. Macro theory, on the other hand, focuses on the business organization itself and also on its environment; in this case, sociology plays a major role. Apart from these a new update regarding 'Meso theory' has been emerged which is based on a simultaneous study on two levels, where one level is concerned with the group processes or with the individuals in the organization (Ferraz 2018). The other level deals with business or organizational processes and serves as a link to relate these two different levels of meso-theory. The main purpose of this essay is to discuss the role of sociology in teaching organistaional behaviour and also to exhibit a few proposals regarding hospitality management trainees or managers.

II. BODY OF CONTENT

Therefore, it can be stated that organizational behaviour is a multidisciplinary field that deals with the behaviour of the people in the organisation and also with the organizational structure and behaviour of the organization. It is a matter of fact that as psychology focuses on individuals, on the other hand, sociology deals with individuals in relation to the social environment of the organisation and also within the organisation culture ("Hospitality Management And Organisational Behaviour - Laurie J. Mullins - 9780273758372 - Geography - Human Geography (117)" 2021). Sociology is concerned with a few aspects, which are: behaviour of the group of individuals inside the business organisation, communication within the organisation, organisational culture, the structure of the organisation, power, conflict and how the order is maintained among the above-mentioned groups within the organisation. Sociological theories, concepts, models and various techniques immensely help to understand the formal organisational theory and its structures, beurocracy, power conflict, and intergroup behaviour within the business organization ("Importance Of Studying Sociology In Business" 2021). Sociology is concerned with human interaction and where communication is the key that influences individuals within the social setting. To draw a link between sociology and organisational behaviour; it can be said that sociology can be considered as a study of plural behaviour where two or more individual's communication constitute a pattern of plurality in the behaviour, thus sociology can be seen as a systematic study of social systems. Business organisations according to sociologists are a variety of people having different statuses and degrees of authority inside the premises and serves different purposes within the organisations. According to sociologists the business leaders try to achieve their goals by achieving the individuals' loyalty towards the organisation and also by sustaining a positive work culture within the organization (Ferraz 2018). To attain these things maintaining a

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positive organisational behaviour is very important and there sociology plays a major role in teaching organisational behaviour to the hospitality management trainees and business managers which is the central idea of this essay. These subjects of the studies are immensely related to the understanding of human behaviour of the managers and the other employees within the contemporary business organisations which can be considered as social constructions.

While teaching management studies and how sociology contributes to management studies some of the elements should be named which are directly related to the professionalism and the strategies taken by the managers which operationalise the structure of the curricular units and the teaching-learning activities developed for the cause. The teaching of organisational behaviour can best be described as a pendulum as it oscillates between two main disciplines and those are psychology and sociology. It should be considered that though each one of these disciplines is adequate for a specific level of analysis than the other and they are mostly complementary and interdependent as well (Saoula, Johari and Fareed 2018). The behaviour within a business organisation is as complex as the behaviour of human beings which involves a variety of rationality from technical systematic to the logic of societal, organisational through the psychosocial dimension of interpersonal relations. The way of teaching organisational behaviour deals with a variety of paradigms that are relevant to social sciences when anyone tries to analyse the reality in question. There is a problematic approach to numerous topics which appear in the curricular unit of organisational behaviour in standard USA MBA programs, apart from that there is also an absence of a second dimension in the role of sociology in higher education. The central role of sociology in teaching organisational behaviour is in the understanding of reflexives pluralism which is scientifically based on common sense which does not forget the roots of social human action. Therefore it can be said that sociology plays a vital role in the main objective of teaching organisational behaviour. Sociology can significantly contribute to the development of competences among management students in a transversal and broader sense. Sociology can definitely foster in future business students or manager's capacity for self-reflexivity on the management of the organisations as in professional activity, a space of conflicts of interests, social logic and also positive leadership ideologies. Therefore to achieve the above-mentioned qualities it will be important for the students to be aware of the importance of integrated and articulated sociological competencies which are theoretical, relational, methodological, operative and reflexive. The above-mentioned competencies constitute a major link between knowledge as 'contents', 'products' and 'professional action'. This is a major issue in the curricular units of organisational behaviour studies ("Disciplines That Contribute To Organisational Behaviour" 2021). By the scientific metrics of the curricular unit of standard USA MBA programs where sociology plays a strong role in the area of expertise training where reflexivity is seen absent due to dominant valorization of an operationalism and an increase in demand for creativity while facing problems can be seen dissociated from critical thinking.

The usual contemporary curricular units of organisational behaviour in the business schools deals with behaviour of individuals within the organisation, the roles and importance of ethical conducts, understanding what motivates the individuals to get involved in critical thinking at the time of crisis, to understand what their needs are, to understand basic dynamics of inter and intragroup processes within the organisations and many more. Clearly, these are not enough, and sociology can play a more significant role in bridging the gaps among the above-mentioned areas to learn at business schools.

III. CONCLUSION

To conclude it can be said that while teaching organisational behaviour psychology and sociology serves as a couple of inter depending and complementing pillars that provide a general idea of individuals and studies individuals in relation to their behaviour within the organisation and the behaviour of the organisation. The

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notable contributions of the sociologists in the field of organisational behaviours are through their studies of group behaviour within organisations and group behaviour within particularly complex and formal business organisations. There are some areas within the curriculum of organisational behaviour in many business schools, which has been benefited by valuable input from famous sociologists related to organisational culture, formal theory of organisation and organisational structure, organisational communications, organisational power, conflict of interests within the organisation and most importantly organisational technology. Deriving from the well recognised sociological theories can be said that human interaction can serve as a key influencing factor among the individual within a social setting. Therefore a systematic study of the social system by the leaders of the business organisations, a social system which can be considered as an operational unit can definitely serve the purpose of maximising the production by keeping the individuals loyal towards the management. It is a matter of fact that employees are the heart of any business organisation, and therefore the leaders should be able to study the social system within the organisation to sustain the productivity and profitability of any organisation while sustaining order and discipline within the area of work. Therefore it can be said that sociology plays a pivotal role in teaching organisational behaviour to the students of hospital management.

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Formative and Reflective Indicators: Applications of Formative Measurement

Arun Khatri

ABSTRACT

Information systems research scholars always seek for clarity on construct development and the use of structural equation modeling to conduct research in the emerging domains with scarcity of established models in the literature and theory. Specially in the deductive studies the scholars are required to comprehensively define the formative and reflective constructs to reach to a feasible model, thus attention is given during theoretical development as to the formative or reflective nature of these constructs. This research provides a review of these constructs in terms of the usage current recommendations for formative and reflective constructs. A futuristic view for IS and other researchers to address construct development and aid in the determination of whether their constructs should be tested as formative or reflective variables are presented to enhance the transportability of constructs.

Keywords: formative, reflective, latent variable, structural equation modeling (SEM) measurement model.

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Formative and Reflective Indicators: Applications of Formative Measurement

Arun Khatri

ABSTRACT

Information systems research scholars always seek for clarity on construct development and the use of structural equation modeling to conduct research in the emerging domains with scarcity of established models in the literature and theory. Specially in the deductive studies the scholars are required to comprehensively define the formative and reflective constructs to reach to a feasible model, thus attention is given during theoretical development as to the formative or reflective nature of these constructs. This research provides a review of these constructs in terms of the usage current recommendations for formative and reflective constructs. A futuristic view for IS and other researchers to address construct development and aid in the determination of whether their constructs should be tested as formative or reflective variables are presented to enhance the transportability of constructs.

Keywords: formative, reflective, latent variable, structural equation modeling (SEM), measurement model.

Author: Fellow MDI Gurgaon; Prof. N P Singh, MDI Gurgaon; Hriday Katri, DCRUST Murthal.

I. INTRODUCTION

This writing is an attempt to help the researchers to understand the applications of formative and reflective indicators. Use of an incorrect measurement indicator undermines the content validity of constructs, misrepresents the structural relationships between them, and may lower the usefulness of management theories for business researchers and practitioners. The distinction between formative and reflective indicators is important because proper specification of a measurement indicator is necessary to assign meaningful relationships in the structural model (Anderson and Gerbing, 1988). Theoretical work in construct validity (Blalock, 1982; DeVillis, 1991; Edwards and Bagozzi, 2000) and structural equation modeling (Baumgartner and Homberg, 1996; Chin and Todd, 1995; Shook, Ketchen, Hult, and Kacmar, 2004) increases our understanding, however, considerable debate still exists regarding the procedures a working researcher should follow to achieve construct validity (e.g., Diamantopoulos, 2005; Finn and Kayande, 2005; Rossiter, 2005).

II. INDICATORS AS DEFINED

We first define constructs and measures prior to our discussion of the relationships between the two. We first define constructs and measures prior to our discussion of the relationships between the two. Constructs can describe the unobservable (i.e. attitudes) and are "verbal surrogates" for the phenomena named by the construct. These are also known as latent variables. Measures are defined as "an observed score gathered through self-report, interview, observation, or some other means" (Edwards et al. 2000). Measurement model misspecification occurs when researchers do not pay attention to the directional relationship between measures and the construct (Chin 1998). Indicators that are influenced by latent variables are called 'effects' indicators. The measurement models that validate these indicators and their latent variables are known as reflective models. Measures are quantifiable, for example, an empirical score gathered from a survey instrument. The relationship between measurement items and constructs is often ignored. By default, the

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relationship between construct and item is assumed to be reflective, meaning that the measurement items are a reflection of the construct. Many times, though, the nature of the construct is not reflective, but rather formative. Formative constructs occur when the items describe and define the construct rather than vice versa (Petter S., Straub D. W., Rai A.) Constructs can describe the unobservable (i.e. attitudes) and are "verbal surrogates" for the phenomena named by the construct. These are also known as latent variables, indicators or scale items, can be distinguished as either ones that are influenced by (reflect) or influence (form) latent variables (Bollen et al. 1991) Measures are defined as "an observed score gathered through self-report, interview, observation, or some other means" (Edwards et al. 2000). Measures are quantifiable, for example, an empirical score gathered from a survey instrument. Measures, also called indicators or scale items, can be distinguished as either ones that are influenced by (reflect) or influence (form) latent variables (Bollen et al. 1991). Measurement model misspecification occurs when researchers do not pay attention to the directional relationship between measures and the construct (Chin 1998). Indicators that are influenced by latent variables are called 'effects' indicators.

2.1 Reflective Indicators

The measurement models that validate these indicators and their latent variables are known as reflective models. Reflective Latent Variable shows a common latent factor structure with reflective indicators and show that changes in the underlying latent construct are reflected by changes in the indicators. In addition, the indicators are subjected to errors of measurement in the reflective model. An example of a reflective measurement model well-known to the IS community is Perceived Ease of Use (Davis et al. 1989). Perceived Ease of Use is defined as "the degree to which a person believes that using a particular system would be free of effort". Perceived Ease of Use is measured by six reflective indicators: easy to learn, controllable, clear and understandable, flexible, easy to become skilful, and easy to use. Based upon this example, an increase in Perceived Ease of Use is reflected by an increase in all six indicators. Therefore, the measures all represent the underlying construct in a reflective model and are expected to be correlated. Due to the high correlations between the indicators, the indicators are also interchangeable and dropping an indicator should not alter the conceptual meaning of the construct (Jarvis et al. 2003).

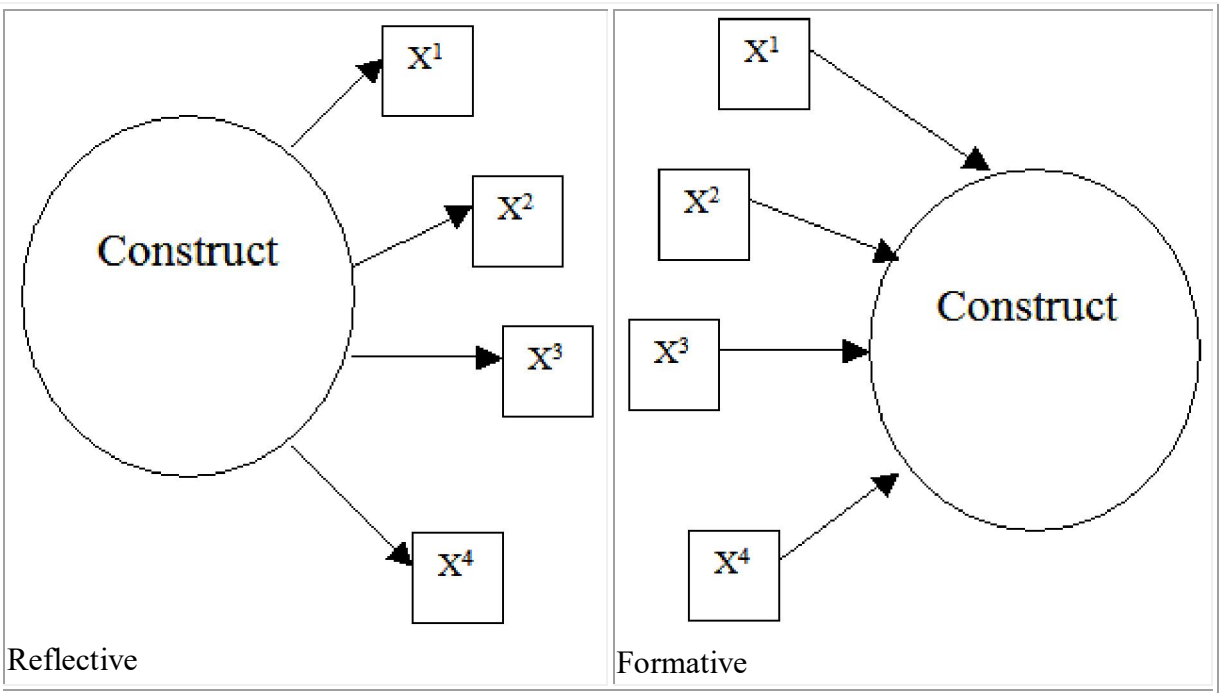


Figure 1: Causal Structures

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2.2 Formative

The second type of measurement model is called formative. Formative Composite Variable, the indicators influence the construct. These are often called 'causal' indicators and the construct is often termed as a combination variable (Maccallum et al. 1993) or composite variable (MacKenzie et al. 2005). This means that the measures cause the construct and that the construct is fully derived by its measurement. As indicated in Figure 2, the measurement error is at the construct level, meaning that part of the construct is not explained by the measures. An example of a formative construct is Socio-Economic Status (SES) (Heise 1972). SES is caused by three measures: education, income, and occupational prestige. For example, an increase in income would increase SES even if there are no increases in education or occupational prestige. Therefore, one would not require a simultaneous increase in all of the indicators (Bollen et al. 1991). Due to the direction of causality with formative models, high correlation between the indicators is not expected, required or a cause for concern. However, dropping an indicator would be similar to dropping a part of the construct (Bollen et al. 1991) and should not be done once an indicator is verified as part of a construct. Practical guidelines exist to assist researchers on the development and evaluation of reflective and formative constructs (Jarvis et al. 2003; MacKenzie et al. 2005). A simple exercise discussed in Chin (1998) asks the question: "Is it necessarily true that if one of the items (assuming all coded in the same direction) were to suddenly change in a particular direction, the others will change in a similar manner?" If one answers 'no' to this question, the construct is formative. First and foremost, however, researchers must clearly define their construct domain, and then it will be easier to evaluate the relationship between the measures and the construct.

2.3 Indicators and constructs

Information Systems scholars often identify structural relationships among latent, unobserved constructs by statistically relating covariation between the latent constructs and the observed variables or indicators of the latent constructs (Borsboom, Mellenbergh, and Heerden, 2003, 2004). This allows scholars to argue that if variation in an indicator X is associated with variation in a latent construct Y, then exogenous interventions that change Y can be detected in the indicator X.

Most scholars assume this relationship between construct and indicator is reflective. In other words, the change in X reflects the change in the latent construct Y. With reflective (or effect) measurement models, causality flows from the latent construct to the indicator. Tim Coltman, Timothy M. Devinney, David F. Midgley, Sunil Venaik, "Formative versus Reflective measurement Models: Two Applications of Formative Measurement", *Journal of Business Research, 61(12), 2008, 1250-1262*.

A formative or causal index results (Blalock, 1964; Diamantopoulos and Winklhofer, 2001; Edwards and Bagozzi, 2000) where causality flows in the opposite direction, from the indicator to the construct. Although the reflective view dominates the psychological and management sciences, the formative view is common in economics and sociology.

The distinction between formative and reflective measures is important because proper specification of a measurement model is necessary to assign meaningful relationships in the structural model (Anderson and Gerbing, 1988). Theoretical work in construct validity (Blalock, 1982; DeVillis, 1991; Edwards and Bagozzi, 2000) and structural equation modeling (Baumgartner and Homberg, 1996; Chin and Todd, 1995; Shook, Ketchen, Hult, and Kacmar, 2004) enhances our understanding, however, considerable debate still exists regarding the procedures a working researcher should follow to achieve construct validity (e.g., Diamantopoulos, 2005; Finn and Kayande, 2005; Rossiter, 2005).

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defined as "an observed score gathered through self-report, interview, observation, or some other means" (Edwards et al. 2000). The popularity of using SEM as well as the ease with which many SEM programs allow the testing of relational models necessitates sound theoretical grounding of constructs. A review of recent IS articles indicates the explanation of constructs is not sufficiently described to determine if they have been properly grounded as either reflective or formative constructs.

A Framework for Assessing Reflective and Formative Models

S.N.	Considerations	Reflective model	Formative model
1.	Theoretical Considerations Nature of construct	Latent construct is existing Latent construct exists independent of the measures used	Latent construct is formed Latent constructs is determined as a combination of its indicators
2.	Direction of causality between items and latent construct	Causality from construct to items. Variation in the construct causes variation in the item measures. Variation in item measures does not cause variation in the construct	Causality from items to construct. Variation in the construct does not cause variation in the item measures. Variation in item measures causes variation in the construct.
3.	Characteristics of items used to measure the construct	Characteristics of items used to measure the construct. Items share a common theme. Items are interchangeable. Adding or dropping an item does not change the conceptual domain of the construct.	Items define the construct. Items need not share a common theme. Items are not interchangeable. Adding or dropping an item may change the conceptual domain of the construct.
4.	Measurement items are a reflection of the construct	Removal of an item does not change the essential nature of the underlying construct	Formative constructs occur when the items describe and define the construct
5.	Empirical Considerations Item intercorrelation	Items should have high positive intercorrelations. Empirical test: internal consistency and reliability assessed via Cronbach alpha, average variance extracted, and factor loadings (e.g., from common or confirmatory factor analysis)	Items can have any pattern of intercorrelation but should possess the same directional relationship. Empirical test: indicator reliability cannot be assessed empirically; various preliminary analyses are useful to check directionality between items and construct.
6.	Item relationships with construct antecedents and consequences	Items have similar sign and significance of relationships with the antecedents/consequences as the construct. Empirical test: content validity is established based on theoretical considerations, and assessed empirically via convergent and discriminant validity.	Items may not have similar significance of relationships with the antecedents/consequences as the construct. Empirical test: nomological validity can be assessed empirically using a MIMIC model, and/or structural linkage with another criterion variable.

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7.	Measurement error and collinearity	Error term in items can be identified. Empirical test: common factor analysis can be used to identify and extract out measurement error.	Error term cannot be identified if the formative measurement model is estimated in isolation. Empirical test: vanishing tetrad test can be used to determine if the formative items behave as predicted. Collinearity should be ruled out by standard diagnostics such as the condition index.

Structural equation modeling (SEM) distinguishes two measurement models: reflective and formative (Edwards & Bagozzi, 2000).

As noted by Bollen and Lennox (1991), these two models are conceptually, substantively, and psychometrically different.

Theoretical considerations

Three broad theoretical considerations are important in deciding whether the indicator is formative or reflective. These considerations include:

1. The nature of the construct,
2. The direction of causality between the indicators and the latent construct, and
3. The characteristics of the indicators used to measure the construct

Consideration 1:

The nature of the construct. In a reflective model, the latent construct exists (in an absolute sense) independent of the measures (Borsboom et al., 2004; Rossiter, 2002). Typical examples of reflective scenarios include measures of attitudes and personality that are measured by eliciting responses to indicators. Practically all scales in business and related methodological texts on scale development (Bearden and Netmeyer, 1999; Bruner II, James, and Hensel, 2001; Netmeyer, Bearden, and Sharma, 2003; Spector, 1992) use a reflective approach to measurement. For example, examination of papers in the Journal of International Business Studies and the Journal of Marketing in 2006 reveals that nearly 95 percent of the constructs measured with multiple items use a reflective structure without consideration of an alternative formulation.

In contrast, in a formative model, the latent construct is dependent upon a constructivist, operationalist or instrumentalist interpretation by the scholar (Borsboom et al., 2003). For example, the human development index (HDI) does not exist as an independent entity. Rather, it is a composite measure of human development that includes: health, education and income (UNDP, 2006). Any change in one or more of these components is likely to cause a change in a country's HDI score. In contrast to the reflective model, few examples of formative models are seen in the business literature.

Consideration 2:

Direction of causality. The second key theoretical consideration in deciding whether the measurement model is reflective or formative is the direction of causality between the construct and the indicators. As shown in Figure 1, reflective models assume that causality flows from the construct to the indicators. In the case of formative models, the reverse is the case, causality flows from the indicators to the construct. Hence, in reflective models, a change in the construct causes a change in the indicators. In the case of formative models, it is the other way around; a change in the indicators results in a change in the construct under study. Thus, the two models in Figure 1 are different, both psychometrically and conceptually (Bollen and Lennox, 1991). The difference in causal direction has profound implications both for measurement error (Diamantopoulos, 2006) and model estimation; topics discussed in section 2.2.

Consideration 3:

Characteristics of indicators. Significant differences are present in the characteristics of the indicators that measure the latent constructs under reflective and formative scenarios. In a reflective model, change in the latent variable must precede variation in the indicator (s).

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Effect Model (Reflective indicators) Causal Model (Formative indicators) interchangeability, enables researchers to measure the construct by sampling a few relevant indicators underlying the domain of the construct (Churchill, 1979; Nunnally and Bernstein, 1994). Inclusion or exclusion of one or more indicators from the domain does not materially alter the content validity of the construct.

However, the situation is different in the case of formative models. Since the indicators define the construct, the domain of the construct is sensitive to the number and types of indicators representing the construct. Hence, adding or removing an indicator can change the conceptual domain of the construct. However, as Rossiter (2002) points out, this does not mean that we need a census of indicators as Bollen and Lennox (1991) suggest. As long as the indicators conceptually represent the domain of interest, they may be considered adequate from the standpoint of empirical prediction.

Table 1: Formative vs. Reflective

Concept	Reflective	Formative
Causal Priority	Indicators are realized From construct to indicators	Indicators are explanatory From indicators to construct
Measurement Error	Established practices important at the item level	Statistical assessment is problematic, but should be done at the construct level
Internal Consistency	Indicators should possess internal consistency	Internal consistency is not implied
Correlations	Should be high	Not expected
Identification	"Rule of three"	Two emitting paths plus formative indicators
Error terms	Yes, at indicator level	No – only disturbances at construct level
Measurement Interchangeability	Removal of an item does not change the essential nature of the underlying construct	Omitting an indicator is omitting a part of the construct
Measurement Model Assumption	More estimable and testable	Measures have no error

Source: Freeze, Ronald D, Robyn L., "AN ASSESSMENT OF FORMATIVE ANREFLECTIVE CONSTRUCTS IN IS RESEARCH"

Formative measurement provides an option for researchers to use measures that tend to be specific, actionable attributes of a phenomenon (Barki et al. 2007; Mathieson et al. 2001).

Formative measurement is a useful alternative to reflective measurement but one that continues to lack in the same degree of guidance as compared to reflective measurement. With this in mind, we sought to provide further guidance in terms of the interpretation of formative measurement results. First, we emphasize the increased role formative measurement results can play in empirically supporting theory and the corresponding importance in reporting and interpreting formative measurement results. Second, we identified six issues to be considered when researchers interpret the results of formative measurement, a step often not performed in IS research.

These six issues concern

1. Multicollinearity,
2. The number of indicators specified for a formatively measured construct,
3. The possible co-occurrence of nega tive and positive indicator weights,
4. The absolute versus relative contributions made by a formative indicator,
5. Nomological network effects, and
6. The possible effects of using partial least squares versus covariance-based SEM techniques.

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Measurement in Information Systems Research". 704 MIS Quarterly Vol. 33 No. 4/December 2009.

To make a significant contribution to the future of IS research; researchers must understand the differences between formative and reflective constructs and their respective methods of identification and validation. We therefore suggest the following guidelines for researchers. The contextual domain for both reflective and formative constructs must maintain its current emphasis. This is especially critical for formative constructs and the researchers need to proactively address this issue. A clear construct definition assists in understanding the contextual domain of the construct and how that construct is measured. Researchers should recognize that there are clear differences between reflective and formative constructs. Construct identification and validation depends on the type of construct specified by the researcher. Researchers should not assume that all constructs are treated similarly and should clearly state the type of construct.

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Keywords: financial performance, inventory management, inventory procurement, inventory security, inventory usage.

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Inventory Management and Financial Performance of Listed Manufacturing Firms in Nigeria

Ismail Alhassan[α] & Halima Musa Muhammad[σ]

ABSTRACT

This study examined the impact of inventory management on the financial performance of Nigerian listed manufacturing companies. The study collected data using a combination of primary and secondary methods. The population of the study is made up of listed manufacturing companies in Nigeria throughout a ten-year period from 2011 to 2020. For the administration of the structured questionnaire, the target group consisted of 200 employees from the finance and store divisions, while secondary data were acquired using the enumeration technique. By examining the structures of the questions in the questionnaire, content validity was employed to validate the study instrument. The study instrument passed the Cronbach Alpha reliability test with an overall score of 0.925, which is greater than the 0.70-0.80 requirement. A total of 170 questionnaires were retrieved, accounting for 85 percent of the total disseminated surveys. Secondary data were gathered from audited yearly reports and accounts during a ten-year period. Inferential statistics were used to examine the hypotheses. Inventory control has a considerable favorable effect on the financial performance of listed industrial enterprises in Nigeria. The study revealed that inventory control has a significant impact on the financial performance of quoted industrial companies in Nigeria. According to the report, managers should improve their strategic relationships with suppliers and provide adequate automated security for tracking inventory movements around the company.

Keywords: financial performance, inventory management, inventory procurement, inventory security, inventory usage.

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I. INTRODUCTION

The business world is speedily increasing, and companies from all over the world are competing for a larger share of the market. Globalization allows businesses to target customers from all over the world, regardless of their location, making this possible. Furthermore, technology improvements have raised customer awareness of the availability of certain goods and services in other countries, leading to a more sophisticated demand for goods and services. Customers' exposure to specific goods and services in many countries may render identical products and services offered by local businesses obsolete if those goods and services do not meet global standards for quality, delivery timeliness, and cost (Thanasak & Patricia, 2013). Businesses must apply strong strategies focused on offering value to customers, sustaining profitability, and expanding market share to accomplish this milestone. According to Raymond, Vincent, Mercy, and Bellah (2015), marketing strategy, product design and packaging, lower pricing, timeliness of delivery, good quality, and well-motivated staff members are all effective

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techniques for gaining a larger market share (2015). From the foregoing, it can be deduced that product quality, rather than other forms of methods, is what gives clients the amount of happiness they desire. This is due to the fact that when quality is assured, all other methods succeed. Customers will only use their hard-earned cash if they are satisfied that the product or service they are purchasing will deliver the value and satisfaction they require. According to Vipulesh (2015), the materials/inputs used and the technology used to process them determine product quality. This is based on the idea that when low-quality materials are treated with high-technology equipment or high-quality materials are processed with low-technology equipment, the finished product may not be of the required quality. As a result, materials/inventory used in the manufacturing process are an important part of achieving organizational goals in terms of quality delivery, and they are part of business current assets, which, due to the nature of their operations, also represent the largest cost for manufacturing and trading companies (Vipulesh, 2015). As a result, companies should implement fundamental controls to ensure that the right amount and quality of supplies are delivered to the right place at the right time for the best price (Gbadamosi, 2016).

Consequently, the company's operating environment typically influences the adoption of good inventory control procedures to achieve high and long-term financial success. Most firms in developed economies throughout the world, such as the United Kingdom, the United States of America, Germany, and Japan, operate in a more competitive, organized, and accommodating business climate than enterprises in Africa, according to Timothy, Patrick, Nebat, and Virginia (2013). The organized business environment, combined with the competitive nature of firms in the industrialized world, allows them to properly manage their inventories since the environment supports inventory planning and control within businesses. However, in Africa, particularly in Nigeria, the use of inventory control techniques to achieve high financial performance is still lacking, as inventory planning and control are frequently hampered by poor competition among companies, a lack of trust between inventory suppliers and companies, and within an organization's ordering and inventory handling units (Gbadamosi, 2016). Manufacturing enterprises had been witnessing falling profitability due to rising production costs. Every company's major goal is to maximize profits, and one of the most successful methods to do so is to employ cost-cutting techniques. A diminishing profit can be addressed by reducing waste, boosting productivity, and enhancing profitability when the proper inventory is used in production. Buying the right amount of inventory at the right time reduces the risk and cost of stock-outs and obsolescence, decreasing costs and increasing profits. This will also help the company to take advantage of quality discounts, allowing it to buy at a reduced price and so increase profit. Similarly, cash that would have gone into inventories could have yielded a better return. Inventory control is viewed as a vital approach for correcting the declining profitability circumstances that have plagued most businesses in recent years, particularly manufacturing industries (Akpakip, 2017). The purpose and hypotheses of the study, literature review, methodology, data analysis and interpretations, as well as conclusions and recommendations, are all included in the following sections of the paper.

1.2 Purpose of the Study

The purpose of the study is to examine the impact of inventory management on the financial performance of manufacturing firms in Nigeria. The specific objectives are to:

i. Examine the impact of inventory control on the financial performance of Nigerian listed manufacturing firms.
ii. Examine the impact of inventory turnover period on the financial performance of Nigerian listed manufacturing firms.

1.3 Research Hypotheses

The following hypotheses are formulated for the study

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Ho1: Inventory control has no significant effect on the financial performance of listed manufacturing firms in Nigeria.

Ho2: Inventory turnover period has no significant effect on the financial performance of listed manufacturing firms in Nigeria.

II. LITERATURE REVIEW

2.1 Conceptual Review

Financial Performance is a comprehensive measure of a company's overall financial strength over time that can be used to compare and evaluate similar businesses in the same industry. Financial performance is a metric that measures a company's financial stability and profitability. The goal of assessing an organization's financial health is to offer information to various stakeholders inside the company. Stakeholders in an organization might range from trade creditors to bond holders, lenders, investors, employees, and management, and each has unique information demands that push them to keep track of the company's financial success. Different metrics can be employed to examine or compute financial performance, but each one depicts or illustrates a different part of it. The entire financial health of a business over time is referred to as financial performance. Financial performance analysis is a method of assessing a company's operating and financial features from financial statements, and it is quantified as return on assets using accounting figures in this study (Olusakin, 2015; Caroline et al., 2017).

Inventory, according to Kilonzo et al. (2016), refers to under-utilized physical goods/stock with a high economic value that organizations keep for packaging, processing, or sale. The nature of inventory held by businesses, as well as its monetary value, varies from one to the next. That is, an organization's finished goods inventory can be used as input by other organizations. Otuya and Eginwin (2017) define stocks of raw materials, semi-finished items, and finished goods held by businesses to aid in the production process. Inventory, according to Ashok (2013), is "the entirety of all tangible property retained by enterprises for sale in the ordinary course of their business, for further production for such sale, and processed to be made accessible for sale."

Organizations can cut expenses and, as a result, enhance profits by employing a number of inventory control approaches. The study has carefully chosen a variety of inventory controls that have been categorized and will be compared to other inventory control systems. Inventory Security Control (Regular Stock Taking and Use of Technology), Procurement Control (Strategic Supplier Partnership and Material Requirement Planning), and Inventory Usage Control (Just-In-Time and Safety Stock Level). The principal inventory control classifications, as well as their sub-classifications, are Inventory Usage Control (Just-In- Time and Safety Stock Level).

2.1.1 Inventory Procurement Control

Businesses either buy or manufacture their own inventories to make a variety of products. When materials must be produced in-house for quality reasons, organizations may still need to buy component parts from outside sources, necessitating procurement controls aimed at forecasting and determining future inventory needs, determining the strength and reliability of suppliers, and developing formidable negotiation skills, among other things (Denisa, 2014). This study looks at two procurement controls: strategic supplier partnerships and material need planning. According to Timothy et al., (2013), a supplier partnership is an agreement between parties such as customers/firms and suppliers/vendors to build a strategic relationship based on mutually agreed-upon win-win conditions. The strategic vendor alliance, according to this notion, focuses on beneficial working relationships between consumers and suppliers rather than disputes. Companies' shift to a "Just-in-Time" production style aimed at reducing waste, shortening delivery gestation periods (lead time), improving flexibility, and simplifying the supply of major component parts by suppliers sparked the desire for and development of the concept of a "Strategic Suppliers Partnership" in the 1980s (Davood et al., 2013). Working backwards from a master production flow plan's schedule of quantities and

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specification of the need dates for finished products to establish the inventory component requirements needed to meet the company's master production plan is known as material requirement planning (Raymond, et al., 2015). According to Caroline et al., (2017), procurement/material requirement planning encompasses the entire process of getting inventory, and it starts when the company recognizes or specifies inventory needs and decides on procurement requirements ahead of time.

2.1.2 Inventory Security Control

Organizations that deal with inventory, whether for manufacturing or resale as finished items, should try to have some type of inventory security system in place to avoid inventory loss. Because of the large financial investment in inventory and the repercussions that inventory loss due to poor security measures can have on the manufacturing process as well as the organization's financial resources, inventory security is necessary in every firm. Acquired inventory, used inventory, and unused inventory will all be balanced at all times thanks to the security measures or controls. Various industrial and mercantile enterprises must build a well-organized and official procedure for internally ensuring inventory security (Benjamin & Daniel, 2016). If inventory handlers and storage specialists succeed in preserving internal inventory security, firms will be able to develop a written protocol for dealing with inventory security challenges (Troxell, 2015). Management usually establishes internal inventory security strategies, which are referred to as internal inventory loss prevention practices. According to Jolla (2014), businesses use internal practices such as documented record keeping, procedural and sequential stock marking, stock taking, documented procedural stock audit and surveillance, and stock checking procedures to maintain inventory security (2014).

2.1.3 Inventory Usage Control

Inventory is purchased and stored by businesses for use in the manufacturing or production process. The utilization of inventories, on the other hand, is influenced by the type of demand experienced by the company as well as its industry size. While some businesses may just store the inventory required to produce predetermined goods, the majority strive to have buffer or safety stock on hand to ensure that production continues until ordered supplies arrive. The inventory usage controls used in this research are Just-in-Time and Safety/Buffer Stocks. Just-in-Time Inventory and Production, also known as Zero-Stock Inventory and Production, is a term used to describe organizational approaches for avoiding inventory waste, with an emphasis on the procurement of inventories required to generate specified commodities (Cynthia & Amuhaya 2015). This means that the just-in-time strategy is an inventory management technique for producing a predefined number of products by storing just enough resources in just the right place at just the right time. Safety stock, according to Anichebe (2013), is the amount of inventory held by businesses to avoid stock outs caused by factors such as extended lead times, inaccurate inventory forecasts, quantity delivery variances (the difference between requisitioned and delivered material), and inventory price fluctuations. According to this definition, a company's safety inventory must take into account the company's inventory consumption pattern, which is typically assessed by looking at previous consumption records or forecasting future consumption. According to Anichebe (2013), the problem with inventory control is calculating the optimal stock safety level due to the unpredictability of demand.

2.2.1 Inventory Security Control and Financial Performance

Kariuki (2013) used safety stocks as a proxy for inventory control and net profit as a measure of performance to evaluate the relationship between inventory management and the profitability of a few chosen Nairobi businesses. The regression results revealed a robust correlation between stock purchases on a regular basis and financial performance. Cynthia and Amuhaya (2015) examined the impact of inventory control on sugar manufacturing firms' procurement performance in Kenya's western sugar belt. The

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main purpose of the study was to see how lean inventory systems, just-in-time (JIT), technology, and strategic supplier alliances affected the performance of sugar producers in Kenya's western sugar belt. A survey descriptive research approach was used to conduct the study. Because of the study's methodology, data were collected using a self-administered questionnaire. The data were analyzed using SPSS, and the variables were described using tables and figures. The association between the variables was evaluated using ANOVA, which demonstrated a non-significant link between the use of technology in inventory control and the return on equity of western sugar enterprises. Kwadwo (2016) considered the impact of effective inventory control on the profitability of Ghanaian manufacturing using a cross-sectional study technique. To span a sixteen-year period (2004–2014), primary and secondary data from the annual reports of four manufacturing enterprises listed on the Ghana Stock Exchange, as well as a questionnaire, were used. The dependent variables were ROA and NPBT, while the independent variables were strategic supplier partnerships and regular stock taking. Ordinary Least Squares (OLS) analysis revealed a positive and significant relationship between regular stock taking, strategic supplier partnerships, and return on assets. Salawati et al. (2012) studied the relationship between inventory control practice and company performance and capital intensity on eighty-two (82) construction businesses in Malaysia over a five-year period (2006–2010). As proxies for independent variables, material requirement planning and computerized inventory systems, as well as the use of technology, were used, while financial performance was measured using Return on Assets (ROA). The findings of the correlation and regression analyses demonstrated a significant positive relationship between the use of technology and the financial performance (ROA) of the organizations under investigation.

Kilonzo et al. (2016) investigated the inventory management and financial performance of a few Kenyan manufacturing companies. The study relies on original data collected via a questionnaire. The questionnaires were tested for both reliability and validity in a pilot study. Strategic supplier relationships, the use of technology in stock record keeping, and material need planning were independent variables in the study, while Return on Asset (ROA), Tobin's Q, and Return on Equity were dependent variables (ROE). The variables were subjected to pre-estimation tests such as multicolinearity and homoscedasticity tests. Descriptive and inferential statistics were used to assess the linear relationship between the dependent and independent variables. The study discovered a positive and significant correlation between the use of technology and the firms' return on investment (ROI).

JIT, Computerized Inventory System, Strategic Supplier Relationship, and Material Requirement Planning were utilized as proxies for inventory control procedures in the financial performance of Mombasa County enterprises by Raymond et al., (2015). (Textile, rolling mills, and food and beverage manufacturing firms in Mombasa County). ROE and NPBT were also used to assess the financial performance of the organizations under study. To test the reliability of research tools, the Split Half Reliability Test was utilized. Similarly, Egberi and Egberi (2011) employed a well-structured questionnaire to gather data from 216 randomly selected employees in order to study the link between efficient inventory control and the profitability of an industrial organization. Regular stock taking and safety stock were independent variables, while ROE was the dependent variable. The findings of the study revealed that there is a correlation between frequent stock taking and the financial performance of the business under study, among other factors.

2.2.2 Inventory Usage Control and Financial Performance

Fariza, Rohaizah, Mohd, and Rushami (2015), on the other hand, evaluated the inventory control methods used by a few Malaysian businesses. One of the independent variables in the study was the JIT inventory control system, and performance was determined using ROA. In the study, JIT was

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found to have a negative and insignificant relationship with financial performance. Agu et al., (2016) considered the relationship between Just in Time (JIT) and the performance of a set of businesses. A primary data collection technique used in the study were questionnaire and interview. The regression analysis performed to test the hypothesis found that there is no significant relationship between JIT and the performance of the companies studied (ROCE). Furthermore, Thanasak and Patricia (2013) considered the influence of inventory control in the Pennsylvania food manufacturing business. A questionnaire was used to collect data for the study. Furthermore, the return on investment (ROI) was employed as the dependent variable, while the safety stock was used as a surrogate for the independent variable. The conclusions of the study found no substantial link between safety stock and financial performance, which is in accordance with the findings of another study (Damitrios, 2008; Anichebe, 2013; Olusakin, 2014; and Caroline et al., 2017). Furthermore, in their study on inventory control and SMEs profitability, Atuya and Eginiwin (2017) found no significant relationship between demand management and SMEs profitability in Delta state, using both ROA and net profit. Kennedy et al., (2009), on the other hand, examined the role of inventory control procedures in the financial performance of Mombasa County enterprises using JIT, Computerized Inventory System, Strategic Suppliers Relationship, and Material Requirement Planning as proxies (textile, rolling mills, and food and beverage manufacturing firms in Mombasa County). ROA, ROE, and NPBT were used to assess the financial performance of the enterprises under investigation. To test the reliability of research tools, the Split Half Reliability Test was utilized. According to the conclusions of the study, there is no link between strategic supplier partnerships and the ROE of the companies studied. EOQ and safety stocks were used as independent variables, while ROCE and NP were used to analyze financial performance. According to the Chi-square analysis, there is a significant correlation between safety stocks and financial performance (ROCE). This finding is similar to those of Enock, Georgery, Elizabeth, and John (2017), who looked at inventory control, service level, and safety stock in the financial performance of fifteen (15) textile manufacturing firms in Nairobi County, Kenya, as well as Alin (2016), who looked at inventory control, service level, and safety stock in a company's financial performance. The findings of Ashok (2013), who looked at the relationship between safety stockpiles, inventory conversion times, and firm profitability as measured by net operating profit in top Indian cement companies, contradict the conclusions above. Using both main and secondary data sources, the regression findings revealed a negative and inconsequential connection between safety stocks and business profitability.

Most inventory control studies in Nigeria and other countries (Kilonzo et al., 2016; Cynthia and Amuhaya, 2015; Enock, et al., 2017; Caroline et al., 2017) used a variety of inventory management strategies such as just in time, material need planning, and safety stock. Kilonzo et al., 2016; Cynthia and Amuhaya, 2015; Enock, et al., 2017; Caroline et al., 2017), had used several measures of inventory control such as just in time, material requirement planning, and safety stock, but none had been able to combine all of these variables as used in this study (Kilonzo et al., 2016; Cynthia and Amuhaya, 2015; Enock, et al., 2017; Caroline

In contrast to previous research, this study's inventory management methods included inventory procurement control (IPC), inventory usage control (IUC), and inventory safety control (ISC). These measures appear to be more effective based on the underlying assumptions. Furthermore, no study concentrating on a specific business sector in the Nigerian environment was located within the scope of the studies examined.

2.3 Review of Empirical Studies

Several studies on the impact of inventory management on financial performance of businesses in various countries have been undertaken. In terms of procurement control and return on asset, Benjamin and Daniel (2016) investigated the impact of inventory control on the financial performance of agrochemical

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distributors and dealers in Nakuru Central Sub-County. The primary data was collected via a drop-and-pick questionnaire that was sent to 100 people. The use of technology in stock record keeping and strategic supplier partnerships (independent variables), as well as the return on investment (ROI), are all variables in the study (dependent variable). According to SPSS, the regression revealed a significant relationship between the strategic suppliers' relationship and the return on asset of the studied firms.

Kwadwo (2016) examined the impact of effective inventory control on the profitability of Ghanaian manufacturing using a cross-sectional study technique. To span a sixteen-year period (2004–2014), primary and secondary data from the annual reports of four manufacturing enterprises listed on the Ghana Stock Exchange, as well as a questionnaire were used. The dependent variables were ROA and NPM, while the independent variables were strategic supplier partnerships and regular stock taking. The data were evaluated using Ordinary Least Squares (OLS), which revealed that strategic supplier relationships and profitability had a positive and significant link (NPBT). In a similar vein, Timothy et al., (2013) explored the impact of inventory control practices on the financial performance of eight sugar manufacturing companies in Kenya over a six-year period (2002-2007), using the lean inventory method, strategic supplier partnerships, material requirement planning, and technology, and measuring performance using Net Profit Before Tax (NPBT) and Return on Assets (ROA). The study employed both a survey and an ex-post facto research design, allowing it to obtain both primary and secondary data from the firms' annual financial statements published in their year books. Descriptive statistics and correlation were used to describe the inventory control approaches. Correlation analysis was used to identify the type and magnitude of the link between the dependent and independent variables. The study's findings reveal a statistically significant positive relationship between strategic supplier connections and NPBT.

Cynthia and Amuhaya (2015) also looked at the impact of inventory control on the procurement functions of sugar producing enterprises in Kenya's western sugar belt. The study's main purpose was to see how lean inventory systems, JIT, technology, and strategic supplier alliances affected the performance of sugar production firms in Kenya's western sugar belt (NPBT, ROE, and ROCE). The researchers utilized a survey descriptive research design to conduct the study. Because of the study's methodology, data were collected using a self-administered questionnaire. The data were analyzed using SPSS, and the variables were described using tables and figures. The findings of an ANOVA analysis of the relationship between the variables demonstrated a strong link between strategic supplier relationships and NPBT of western sugar businesses. The study employed strategic supplier management and safety stock as inventory control proxies, while ROA and Net Profit were used as performance proxies, and the regression revealed a positive and significant link between strategic supplier management and net profit. Using a case study of new Kenya Cooperative Creameries, Kiplagat and George (2014) explored the impact of inventory control on the performance of manufacturing enterprises in Kenya.

Raymond et al., (2015) used JIT, Computerized Inventory System, Strategic Suppliers Relationship, and Material Requirement Planning as proxies for inventory control practices in the financial performance of firms in Mombasa County (textile, rolling mills, and food and beverage manufacturing firms in Mombasa County). ROA, ROE, and NPBT were used to assess the financial performance of the enterprises under study. To test the reliability of research tools, the Split Half Reliability Test was utilized. The outcomes of the study revealed that strategic supplier agreements have no impact on the NPBT of the organizations studied. This finding is similar to that of Ogbo, Onekanma, and Wilfred (2014), as well as Pawan and Bahl (2014), who discovered a significant correlation between demand management and the financial performance of the 7up bottling company, the Enugu plant and numerous Iranian companies.

The impact of material requirement planning, vendor controlled inventory/strategic supplier

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partnerships, and safety stock maintenance on Gianchore Tea Factory's ROA and operational performance was further studied by Kennedy, Magret, and Walter (2009). A total of 119 persons took part in the survey. To evaluate the link between the variables studied, the study's data was analyzed using descriptive and regression analysis. According to the findings of the study, there is no correlation between vendor-controlled inventory and strategic supplier agreements and financial performance (ROA).

In support of Kennedy et al., (2009) submission, Raymond et al., (2015) looked at the impact of inventory control on the financial performance of Mombasa County firms (textile, rolling mills, and food and beverage manufacturing firms), using JIT, Computerized Inventory System, Strategic Suppliers Relationship, and Material Requirement Planning as proxies for inventory control practice. To test the reliability of research tools, the Split Half Reliability Test was utilized. The results of the study revealed that there is no significant link between strategic supplier agreements, material need planning, and the companies' ROA.

Over a five-year period (2006–2010), Salawati, Michael, and Norlina (2012) empirically examined the relationship between inventory control practice and company performance and capital intensity on eighty-two (82) Malaysian construction businesses. As proxies for independent variables, material requirement planning and computerized inventory systems, as well as the use of technology, were used, while financial performance was measured using Return on Assets (ROA). The correlation and regression findings revealed a considerable negative relationship between material requirement planning and the return on assets of the companies studied.

Kilonzo et al., (2016) investigated the inventory control and financial performance of a few Kenyan manufacturing enterprises in a similar vein. The study relies on original data collected via a questionnaire. The questionnaire's reliability and validity were tested in a pilot study. Strategic supplier relationships, the use of technology in stock record keeping, and material need planning were independent variables in the study, whereas Return on Asset (ROA), Tobin's Q, and Return on Equity were dependent variables (ROE). Pre-estimation tests, such as multicollinearity and homoscedasticity tests, were performed on the variables. Descriptive and inferential statistics were used to assess the linear correlations between the dependent and independent variables. The study discovered a positive and significant association between strategic partnerships with suppliers and the return on assets of businesses. Over a six-year period, Timothy et al. considered the impact of inventory control procedures on the financial performance of eight sugar production firms in Kenya (2002-2007). The study included NPBT and ROA as performance measures, as well as the lean inventory system, strategic supplier alliances, material need planning, and technology. The study employed both a survey and an ex-post facto research design, allowing it to obtain both primary and secondary data from the firms' annual financial statements published in their year books. Descriptive statistics and correlation were used to describe the inventory control approaches. Correlation analysis was used to identify the type and magnitude of the link between the dependent and independent variables. The study's findings reveal that strategic alliances with suppliers have a statistically significant positive relationship with ROA.

The impact of inventory control on manufacturing firm performance in Kenya was studied by Kiplagat and George (2014). The study included inventory control proxies such as strategic supplier management and safety stock, as well as ROA and Net Profit as performance proxies. The regression demonstrated a strong and favorable relationship between strategic supplier management and return on asset.

2.4 Theoretical Framework

Because of its argument for utilizing a reduced or lean inventory system to improve a company's profitability by cutting inventory carrying expenses, this study determined lean theory to be

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the most applicable inventory theory to this study. Henry Ford invented the Lean Inventory Theory in the 1450s in Arsenal in Venice as a result of his thinking on the integrated manufacturing process. Lean inventory theory, which is an extension of Just-in-Time inventory management, is an inventory control concept that emphasizes the importance of having minimal inventory in line with production process needs (Eroglu & Hofer, 2011). Womack (1990) was the first to propose the lean inventory theory, which is based on the idea of keeping stocks minimal in a company. The goal of lean inventory theory is to reduce costs in an organization's inventory system by making decisions that focus on manufacturing, warehousing, and the broader supply chain (Troxell, 2015). The theory (Lean) is founded on the Economic Order Quantity (EOQ) postulate, which tries to maximize inventory quantity by finding the right quantities of inventory to order per time, according to Jolla (2014). As a result of the aforementioned, the idea raises the possibility of becoming dynamic in manufacturing and operating systems used to monitor inventory levels, as well as distinct types of inventory that may require different treatment. In a highly competitive economy, keeping extra inventories has a detrimental influence on a company's net cash flow. Lean inventory theory helps businesses gain a competitive advantage, increase market share, and increase profits (Nyabwanga, 2013). The lean inventory theory was employed to provide theoretical explanations for this study's subject matter. This decision is predicated on the need to explore how inventory control influences organizational performance, demanding a cautious inventory management approach. It also helps firms increase their return on investment by lowering the amount of inventory they have and the costs associated with it.

III. METHODOLOGY

3.1 Research Design

The research design of the study includes both primary and secondary data collected from ten (10) listed manufacturing firms in Nigerian Stock Exchange over a ten-year period from 2011 to 2020. A field survey study design was adopted due to the nature of the data needed to measure the independent variables. Secondary sources (annual reports) were unable to extract information on the firm's suppliers, material handling technologies, or stock taking method, necessitating the use of primary data via the administration of 200 structured questions in a Likert scale style. A total of 170 questionnaires were found, accounting for 85 percent of the total disseminated surveys. The responders were picked at random from a set of twelve (12) personnel with direct responsibilities in inventory control. To confirm the results derived from the source data, inventory control was quantified as inventory turnover period using an empirical survey (expost facto) design.

The questionnaire was divided into five sections, with section A focusing on the respondent's demographic characteristics, sections B to D focusing on inventory control (section B examining the effect of inventory procurement control, sections C and D examining the effect of inventory security control and inventory usage control, and section E focusing on financial performance), and section E focusing on financial performance. At least 15 copies of the questionnaire were filled out by employees whose employment are directly related to inventory control in each of the ten (10) organizations. The Cronbach Alpha Reliability Test was used to assess the questionnaire's content and predictive validity, as well as its reliability, yielding a value of 0.925, which was greater than the anticipated range of 0.70-0.80 threshold. For secondary data, the yearly reports and accounts are considered reliable because they have been thoroughly audited and confirmed by expert auditors, as well as a signed and recognized opinion on the reports' quality. In accordance with the Company and Allied Matters Act (CAMA) sections 352 -354 for independent audit of annual reports, the auditors' reports are recognized as dependable and reliable. If the yearly reports are audited in line with the regulations, users of financial statements can have confidence that the financial information contained in the financial statement is reliable and can be used to make informed economic decisions.

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The data from the administered questionnaire was coded and analyzed using percentages and multiple regression analysis utilizing Excel and E-views 11.0 software. A simple linear regression model was used to examine the effect of inventory turnover period on financial performance in order to validate the reports provided from the study using primary data. As post-estimation checks, the heteroscedasticity test and the serial correlation test were employed to ensure that the model was adequately defined for the estimation and to avoid biased results. The secondary data sources were analyzed using Stata 16.

3.2 Model Specification

The impact of inventory control on the financial performance of Nigerian listed manufacturing enterprises was explored in this study. The econometric model developed by Enock et al., (2017) was adopted with modifications as follows:

$$ROAit = a0 + \beta 1EOQit + eit \quad (1)$$

Where:
ROAit = Dependent Variable at time t (financial performance)
a0 is the constant term
β1 EOQit represents independent variable (inventory control) and its change (β1) at time t, and eit is the error term

However, this study's dependent variable is represented by financial performance FP while the independent variable is represented by inventory control (IC). Thus, the model of Enock (2017) was modified to formulate the model of this study as:

$$FPit = a0 + \beta 1Inventory\ Controlit + eit \quad (2)$$

The regression equation for this study as stated thus:

$$FPi = a0 + \beta 1IPCi + \beta 2ISCi + \beta 3IUCi + ei \text{ (using primary data)} \quad (3)$$

$$ROAit = \beta 0 + \beta 1ITPit + \mu it \text{ (using secondary data)} \quad (4)$$

Where:
IPC = Inventory Procurement Control
ISC = Inventory Security Control
IUC = Inventory Usage Control
ITP = Inventory Turnover Period
FP = Financial Performance
ROA = Return on Assets

IV. RESULTS AND DISCUSSION OF FINDINGS

The results of the regression analysis on the effect of inventory control on financial performance of listed manufacturing firms in Nigeria is as shown in Tables 1 and 2 respectively.

Table 1: Primary Data Regression Analysis

Variable	Coefficient	Std Error	t-Stat.	Prob.
IPC	1.743	0.676	2.697	0.031**
ISC	0.899	0.166	4.731	0.047**
IUC	1.542	0.392	2.702	0.062**
Constant	2.733	1.244	2.197	0.772
R-squared	0.654			
F-Statistics (Prob)	8.33 (0.01**)			

Source: Researcher's computations, (2021)

*FP ** = significant at 5%*

As a result of the regression analysis examining the effect of inventory control on financial performance, Table 1 shows that Inventory Procurement Management (IPC) has a significant positive effect on financial performance at a 5% significant level (= 0.031). According to the finding with the coefficient of 1.743, a unit increase in inventory control will result in 1.743 increases in the firm's financial performance. The financial performance of listed manufacturing enterprises in Nigeria increases by 1.743 units as inventory control increases by one unit; consequently, this study contradicts the null hypothesis that inventory procurement control

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has no substantial impact on financial performance. Inventory Security Control (ISC) was also determined to have a favorable and significant impact on the financial performance of Nigerian listed manufacturing enterprises, with a p-value of 0.047 being less than the 5% significant level. A unit increase in inventory security control would result in 0.899 gains in financial performance, according to the analytical coefficient of 0.899. This suggests that for every unit of inventory security management improved, the financial performance of listed manufacturing enterprises in Nigeria improves by 0.899. As a result, this study refutes the hypothesis that inventory security control has no significant impact on the financial performance of listed manufacturing enterprises in Nigeria. Finally, inventory security management solutions in manufacturing organizations have a significant positive impact on their financial performance.

In the outcome of the multiple regression model provided in Table 1, it was observed that Inventory Usage Control (IUC) had a substantial positive effect on financial performance, with a p-value of 0.062 being less than the 5% specified threshold of significance. According to the 1.542 coefficient, a unit increase in inventory usage control leads to a 1.542 unit increase in financial performance; when inventory usage control increases by a unit, financial performance improves by 1.542 units. As a result, the null hypothesis is rejected in this study, which claims that inventory utilization control has no significant impact on the financial performance of listed manufacturing enterprises in Nigeria. As a result, inventory usage control has a positive and significant impact on the financial performance of publicly traded industrial companies. The probability of F-statistics of 0.01 (less than 5% accepted significance level) indicates that inventory control (inventory procurement control, inventory security control, and inventory usage control) has a significant impact on the financial performance of Nigerian listed manufacturing firms when the combined effect of inventory control (inventory procurement control, inventory security control, and inventory usage control) is considered. Because the coefficient of multiple determination is 0.654, changes in inventory control (inventory procurement control, inventory security control, and inventory usage control) can explain 65.4 percent of the variation in financial performance, while the remaining 34.6 percent is due to changes in other factors not captured in this model. Finally, this study refutes the null hypothesis that inventory control (inventory procurement, inventory security, and inventory usage control) has no significant impact on the financial performance of Nigerian quoted manufacturing enterprises.

Table 2. Secondary Data Regression Analysis (Pooled OLS)

Variable	Coefficient	Std.Error	t-tes	Prob
Constant	3.64	1.04	2.75	0.002**
ITP	4.64	4.33	0.54	0.611**
R2; F-Stat (Prob)	0.0062; F(1, 110) = 0.69			0.41
Hausman Test	chi2(1) = 8.22			0.46
Testparm	F(21, 84) = 1.31			0.65
Heteroskedasticity Test	chi2(1) = 0.74			0.43
Serial Auto-Correlation Test	F(1, 5) = 0.088			0.74

Source: Researcher's Computation (2021)

*FP **significant at 5%*

The results of the Hausman test to choose the best regression estimator between fixed and random, as shown in Table 2, revealed that fixed effect is the most appropriate estimator, but the results of the confirmatory tests carried out using testparm test nullifies the result of the Hausman with an insignificant probability value (p-value of 0.46) making the chosen fixed effect inappropriate for the estimation, thus Pooled OLS is adjudged to be the m The Breusch-Pagan/Cook-Weisberg Test is used to determine if there is a problem with heteroscedasticity, or if the variations in the

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residuals of the model during the period "t" in both models are trending with time. The variation in the model's residuals is constant across time with a p-value of 0.65, showing that there is no heteroscedasticity in the model. Similarly, the Wooldridge test was used to see if the associations between the model's coefficients and residuals were unhealthy, as this would result in the error terms being smaller than normal and the co-efficient of determination being higher than expected; with a p-value of 0.74, the test confirms the null hypothesis that there is no first order autocorrelation. Based on the results of the diagnostic tests, the model is created using Pooled Ordinary Least Square. Table 2 shows the findings of the regression analysis, which reveal that Inventory Turnover Period (ITP) has a negligible positive effect on financial performance (Return on Asset), with a p-value of 0.611, which is higher than the 5% level of significance used in this study. In contrast to the conclusions of the original data analysis, which showed that the combined inventory control approach had a considerable impact on financial performance. Inventory value, which is just a valuation of an entity's closing inventory at the end of reporting periods, may be found to be insufficient to represent all of the inventory control methods implemented by the entity's management. As a result, the delivery of a structured questionnaire was selected as the primary data collection method. The questionnaire was created to capture three key aspects of inventory planning and control: inventory acquisition, inventory security, and inventory usage. Inventory procurement control, inventory security control, and inventory usage control are the three categories of inventory planning and control.

This study concluded that data obtained through the administration of a structured questionnaire is more comprehensive and robust than simply analyzing the effect of closing inventory value on returns of the ten (10) sampled manufacturing firms based on the findings of both primary and secondary data.

4.1 Discussion of Findings

According to the regression study, inventory procurement control has a positive and significant impact on financial performance. The outcome corresponds to the a priori expectations. Timothy et al., (2013) and Kilonzo et al., (2016) discovered that strategic supplier alliances and material requirements planning as inventory procurement control measures had a significant favorable impact on firm financial performance. The findings, on the other hand, contradict those of Raymond et al., (2015), who looked at the impact of inventory control procedures on the financial performance of Mombasa Country businesses (textile, rolling mills, and food and beverage manufacturing firms). They reported that there is no significant link between JIT, Computerized Inventory System, Strategic Supplier Relationship, and Material Requirement Planning as proxies for inventory control practice. The findings also support the study's theoretical foundation, resource dependency theory, and Kitaeva's (2014) claim that long-term customer-supplier relationships enable organizations to protect themselves from both internal and external organizational as well as environmental changes and achieve optimal inventory control. According to the conclusions of this study, inventory security control has a significant positive impact on financial performance. This conclusion backs up Kariuki's (2013) findings of a strong link between frequent stock taking and financial success, as well as Raymond et al's (2015) findings of a positive and significant link between computerized inventory systems and the return on equity of the companies studied. Kilonzo et al., (2016) and Salawati et al., (2012) both discovered a significant positive relationship between the use of technology and the financial performance (ROA) of the businesses they studied. On the other hand, Cynthia and Amuhaya (2015) discovered no link between the use of technology in inventory control and the return on equity of western sugar enterprises. The findings are also in line with the study's theoretical foundation, lean inventory production theory, which is based on the idea of keeping stocks low in a business. It was founded on the premise that inventory cost optimization may be

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achieved by making decisions that span manufacturing, warehousing, and the entire supply chain (Troxell, 2015).

Inventory utilization control has a positive and considerable impact on the financial performance of Nigerian listed manufacturing enterprises, according to the findings of this study. According to Fariza et al., (2015), there is a minor negative correlation between JIT and financial performance. However, according to Agu et al., (2017), there is no significant link between JIT and the performance (ROCE) of the studied firms. Thanasak et al. (2013) discovered that the relationship between safety stock and financial performance is minimal. The findings corroborated those of Adeyemi and Salami (2010), who investigated the impact of inventory control on the performance of a Nigerian bottling company's Ilorin plant and discovered a strong link between safety stocks and financial performance (ROCE); and Enock, et al. (2017) and Akin (2016), who investigated inventory control, service level, and safety stock in a company's financial performance. The outcomes of this study also support the underlying theory, which argues that by reducing inventory stock and carrying costs, lean inventory theory minimizes excess buffer stocks and inventory wastage, allowing for better flexibility in the production process.

4.2 Implications of Findings

According to the findings of this study, the enterprises' managements have established stringent controls to guarantee that inventory costs are maintained to a bare minimum, resulting in higher reported profit. Looking beyond typical financial checks in relation to inventory control has exposed management to a number of new approaches for establishing tight inventory planning and controls, resulting in lower inventory costs and overall production costs. In order to provide useful advise to the management of the companies in question, practitioners such as auditors and consultants should look beyond financial records when performing their tasks in terms of inventory audit, planning, and control.

V. CONCLUSION AND RECOMMENDATIONS

This research looked into the impact of inventory control (inventory procurement, inventory security, and inventory usage control) on the financial performance of Nigerian listed manufacturing enterprises. A numerical description of all variables under study was obtained to depict the movement of values and determine the variations of each of the independent variables with the dependent variables. Based on the results of the multiple regression analysis undertaken, inventory control (inventory procurement control, inventory security control, and inventory usage control) had a significant impact on the financial performance of listed conglomerate firms in Nigeria. The study therefore, recommends that management should strengthen their connection with suppliers; have regular meetings with suppliers to discuss significant issues connected to inventory procurement; and endeavor to keep effective inventory chain management from suppliers to avoid pilferage. Management should also make sure that adequate security measures are in place to prevent unauthorized access to inventory.

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ABSTRACT

This research focused on carrying out a diagnosis of the Internal Control System at the New and Digna Life Foundation of the city of Montería, using the COSO internal control model. The sample unit corresponds to the Foundation, taking for the study 12 subjects participating in the managerial, administrative, operational and control positions that were directly related to the control activities; the instruments used for data collection were a questionnaire containing 18 items and a check or checklist, used to expand the information obtained through the questionnaire applied. As a result of the investigation, it was possible to obtain that the organization under study is exposed to various risks of a financial, economic and legal nature, since there are failures in the implementation and structuring of the Internal Control System, where it could be evidenced that no There is a designated or responsible area for managing it, which affects the independence of one process from another when establishing controls and carrying out the preventive and / or corrective measures that may take place. The Internal Control System is an essential tool in this type of organizations because it helps minimize risks and make better decision-making, resulting in greater operationality and process flow.

Keywords: internal control, non-profit entity, diagnosis, processes and procedures, policies.

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Diagnosis of the Internal Control System at the new and Digna Life Foundation of the City of Montería

Diagnóstico del Sistema de Control Interno en La Fundación Vida Nueva Y Digna de la Ciudad de Montería

Carlos Andrés Causil Lengua

RESUMEN

La presente investigación se centró en realizar un diagnóstico del Sistema de Control Interno (SCI) en la Fundación Vida Nueva y Digna de la ciudad de Montería, utilizando para ello el modelo de control interno COSO. La unidad muestral corresponde a la Fundación, tomando para el estudio 12 sujetos participantes de los cargos gerenciales, administrativos, operativos y órganos de control que se encontraban relacionados directamente con las actividades de control; los instrumentos utilizados para la recolección de datos fueron un cuestionario que contenía 18 ítems y una lista de verificación o chequeo, empleada con el fin de ampliar la información obtenida a través del cuestionario aplicado. Como resultado de la investigación se pudo obtener que la organización objeto de estudio se encuentra expuesta a diversos riesgos de índole financiero, económico y legal, toda vez que existen fallas en la implementación y estructuración del Sistema de Control Interno, donde se pudo evidenciar que no existe un área designada o encargada del manejo del mismo, lo cual afecta la independencia de un proceso frente a otro al momento de establecer los controles y realizar las medidas preventivas y/o correctivas a que hubiese lugar. El Sistema de Control Interno es una herramienta esencial en este tipo de organizaciones porque ayuda a minimizar riesgos y realizar una mejor toma de decisiones, obteniendo como resultado una mayor operacionalidad y flujo en los procesos.

Palabrasclave: control interno, ESAL, diagnóstico, procesos y procedimientos, políticas.

ABSTRACT

This research focused on carrying out a diagnosis of the Internal Control System at the New and Digna Life Foundation of the city of Montería, using the COSO internal control model. The sample unit corresponds to the Foundation, taking for the study 12 subjects participating in the managerial, administrative, operational and control positions that were directly related to the control activities; the instruments used for data collection were a questionnaire containing 18 items and a check or checklist, used to expand the information obtained through the questionnaire applied. As a result of the investigation, it was possible to obtain that the organization under study is exposed to various risks of a financial, economic and legal nature, since there are failures in the implementation and structuring of the Internal Control System, where it could be evidenced that no There is a designated or responsible area for managing it, which affects the independence of one process from another when establishing controls and carrying out the preventive and / or corrective measures that may take place. The Internal Control System is an essential tool in this type of organizations because it helps minimize risks and make better decision-making, resulting in greater operationality and process flow.

Keywords: internal control, non-profit entity, diagnosis, processes and procedures, policies.

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I. INTRODUCCIÓN

En un mundo globalizado como el de hoy, las organizaciones cada día sin importar su naturaleza jurídica o su objeto social intentan obtener la mayor confiabilidad en sus operaciones y en los sistemas de información que adoptan e implementan. Todos los cambios que ha traído consigo el fenómeno de la globalización afectan de forma directa el actuar de las organizaciones generando de esta manera un mayor interés por alcanzar un alto grado de competitividad en el mercado y el sector en que se desarrollan, teniendo en cuenta que "La globalización mejora, en conjunción con la nueva ola de desarrollo de las tecnologías, la eficiencia de la economía en general y, por tanto, la productividad y el crecimiento mundial" (De la Dehensa, 2000, p.165). Esto demuestra que las compañías, entidades u organizaciones, ya sean de carácter público o privado están siendo forzadas a medir e impulsar sus actividades de acuerdo a las características que presentan los nuevos mercados económicos.

Con el fin de tener control y evaluar en la mayor medida posible los procesos que se desarrollan en cada una de las áreas o dependencia de las empresas, estas optan por la implementación de un Sistema de Control Interno (SCI) donde todos los integrantes de la organización son responsables de la efectividad y el buen funcionamiento de este, aunque es evidente que hay un mayor involucramiento y responsabilidad en los niveles superiores. Es importante reconocer que el funcionamiento de esta herramienta va a depender de las políticas y parámetros establecidos por la organización, a pesar de que existen ciertos modelos de control interno, no existe una regulación para la implementación de los mismos, lo cual le da la libertad a las organizaciones de escoger el que crea conveniente y realizar los respectivos ajustes, adaptándolo a las necesidades y proyectos institucionales, teniendo en cuenta igualmente que "Ahora es mayor la exposición a los riesgos de fraude que lo que ocurría hace dos o tres décadas atrás; por ello es necesario invertir mucho más ahora en controles para prevenir y detectar fraude" (Aguiar,1996, p.204). Lo anterior, indica que los controles deben ser una medida de prevención más que de corrección y aunque en ciertos momentos es difícil la detección de riesgos y fraudes, con la implementación de estos se minimizan las fallas en los procesos y procedimientos.

Por otro lado, en el caso de las entidades sin ánimo de lucro (ESAL) la adopción e implementación de un SCI tiene la misma finalidad que pudiese tener para cualquier otra organización. En este sentido, se plantea:

> Las empresas con ánimo o sin ánimo de lucro deben propender a crear valor a sus protectores, dueños o accionistas, así como la de enfrentar y superar las incertidumbres, (...), poder proveer una estructura conceptual, (...), y así enriquecer su capacidad para generar valor (Estupiñán, 2015, p. 25).

> Esto indica, que es necesario entender que su buen funcionamiento ayudará a alcanzar los objetivos empresariales; debido a esto, es de vital importancia desarrollar un monitoreo y seguimiento constante para obtener así una mayor efectividad y eficacia en la ejecución de los procesos administrativos, financieros y contables, lo cual genera una mayor credibilidad y competitividad.

Se realizará un diagnóstico del Sistema de Control Interno en la Fundación Vida Nueva y Digna de la ciudad de Montería, de tal forma que se pueda determinar el nivel de conocimiento que poseen los funcionarios de las áreas que conforman la fundación, en lo que refiere a la importancia, objetivos y buen funcionamiento del SCI; además, se evaluará el SIC, en lo que concierne a la estructuración, documentación y funcionamiento, bajo los componentes del marco de control interno del COSO; y finalmente se propondrán una serie de recomendaciones para fortalecer el SIC y la toma de decisiones en los procesos administrativos, contables y financieros de la Fundación Vida Nueva y Digna.

II. MÉTODO

En la investigación se desarrolló un tipo de metodología o investigación descriptiva, teniendo

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en cuenta que "los estudios descriptivos son útiles para mostrar con precisión los ángulos o dimensiones de un fenómeno, suceso comunidad, contexto o situación" (Hernández, Fernández, y Baptista, 2010, p.80). Entonces, a través de esta metodología es posible conocer e identificar todos aquellos factores que se encuentran relacionados con la situación actual que presenta el control interno dentro de la organización objeto de estudio. Del mismo modo, entendiendo que el fenómeno se estudia y la recolección de la información se realiza partiendo de la observación sobre un grupo en particular, el método a través del cual se desarrolló el trabajo de investigación fue inductivo, con un enfoque mixto, el cual resulta de la unión y contempla los elementos característicos del método cualitativo y cuantitativo.

La población objeto de estudio en la cual se realizó el estudio corresponde a una sola entidad, la Fundación Vida Nueva y Digna. El tipo de muestreo seleccionado en la investigación corresponde a aquel denominado muestreo por conveniencia, toda vez que las personas seleccionadas que participan como informantes o "las unidades de la muestra se auto seleccionan o se eligen de acuerdo a su fácil disponibilidad" (Mejía, 2000, p. 169). En este sentido, la unidad muestral no fue elegida dentro de la población de acuerdo a una serie de criterios y/o características comunes, sino más bien de acuerdo a la facilidad y comodidad del investigador y a la disponibilidad de la unidad o unidades muestrales o de observación. Por tanto, el estudio investigativo abarcó a la Fundación como unidad muestral, escogiendo para ello 12 sujetos participantes.

Para llevar a cabo la investigación y teniendo en cuenta los procedimientos para la recolección de información sobre el fenómeno o suceso estudiado, se hizo uso de la encuesta y la lista de chequeo (Check List) o verificación como los instrumentos de recolección de datos válidos dentro del proceso investigativo. Además, se desarrolló un tipo de paradigma de análisis de investigación hermenéutico, el cual presenta como una de sus características principales "la identificación de las reglas que subyacen, siguen y gobiernan los fenómenos sociales" (Pérez, 1994, p.27). De esta manera, los datos e información obtenida estuvieron influidos por las características y el contexto en el cual se llevó a cabo el estudio. Así mismo, esta investigación se desarrolló teniendo en cuenta principios éticos tales como: imparcialidad, equidad, justicia y confidencialidad; y conforme a los diferentes criterios establecidos por la organización y la institución académica; y con la declaratoria de consentimiento informado de los sujetos participantes.

III. RESULTADOS

3.1 El Sistema de Control Interno en las organizaciones

Hablar de control interno, es hablar de gestión, planificación, y mecanismos de evaluación, que conllevan a la verificación de lo procedimental, garantizando la transparencia y el actuar del ente económico, vigilado por organismos Estatales; para los cuales establecer un buen sistema de control interno en los entes económicos, como es el caso de las ESAL, es una garantía del resguardo de los recursos, y evitar los posibles fraudes por negligencias administrativas. Los riesgos pertenecen a la naturaleza de cualquier negocio y nacen con el surgimiento del mismo, pero es allí donde cada organización marca la diferencia al implementar y establecer estrategias enfocadas a la minimización de estos.

El Sistema de control interno es una herramienta fundamental para la consecución de los objetivos trazados, donde todos los actores de la empresa tienen cierto grado de participación, el control interno busca en cierta manera ayudar a la gerencia a desarrollar una mejor gestión, análisis y evaluación de los procesos y procedimientos, con el fin de realizar una toma de decisiones en tiempo real y/u oportuno, permitiendo mejorar el alcance de los objetivos empresariales establecidos y la evaluación y administración de los riesgos; lo anterior lo apoya Mantilla (2008), quien define el control interno como "un proceso diseñado e implementado por la administración para tratar los riesgos del negocio y de fraude identificados que amenazan el logro de los objetivos establecidos, tales como la confiabilidad

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de la información financiera" (p.43). Se puede observar según lo descrito anteriormente por el autor que la implementación de un sistema de control interno dentro de una organización es fundamental porque nos ayuda a detectar las fallas que existan en los procesos internos que se llevan dentro de estas, facilitando de esta forma la toma de decisiones en el momento oportuno. Sin embargo, el tener un sistema de control interno establecido no necesariamente significa que esté siendo útil, ya que se deben realizar revisiones, evaluaciones y actualizaciones del mismo, de lo contrario van a salir a relucir deficiencias en esta herramienta que de cierta forma impactarán en el ejercicio y la toma de decisiones gerencial; para lo cual se debe procurar establecer un ambiente de control propicio para la eficacia y eficiencia del mismo. Arens, Elder y Beasley (2007) definen "La esencia de la organización controlada de forma eficaz está en la actitud de su administración" (p.275). Por consiguiente, tal como sea percibido el control desde los niveles superiores así se verá reflejado y se responderá en los niveles inferiores, esto implica la implementación y adopción de estrategias enfocadas al mejoramiento de esta herramienta, lo cual va a requerir de más esfuerzo y compromiso de las diferentes áreas y de la misma dirección administrativa.

3.2 Nivel de conocimiento de los funcionarios con respecto a la importancia, objetivos y buen funcionamiento del Sistema de Control Interno

En el marco de la evaluación e implementación del Sistema de Control Interno en cualquier organización, es necesario que todos sus actores o personas que se encuentran en las diversas áreas o departamentos tengan pleno conocimiento de cómo funciona y la importancia del mismo, ya que a partir de ello se puede analizar su eficacia y eficiencia para ayudar en la toma de decisiones, sin embargo, la investigación pudo arrojar que existen una serie de factores tales como la inexistencia de un área o persona independiente que maneje el SCI, manuales no diseñados, desconocimiento de roles y responsabilidades de algunos órganos frente al control y la divulgación de las políticas, misión, visión y valores corporativos que impiden su funcionalidad y el verdadero objetivo de su implementación.

En este mismo sentido, para Arboleda, Sánchez y Sanabria (2016), quienes llevaron a cabo el estudio titulado "Factores de éxito competitivo: caso ESAL Barranquilla", encontrando situaciones similares a las destacadas en la presente investigación aseguran que "es importante resaltar los canales de comunicación existentes en las organizaciones que permitan un flujo efectivo de la información y generar un escenario de confianza" (p.174). Esto conllevaría al fortalecimiento de la relación del personal vinculado a la organización con el SCI y de esta manera contemplar la utilidad y dinámica del mismo dentro de las organizaciones.

3.3 Estructuración, documentación y funcionamiento del SCI bajo los componentes del modelo de control interno COSO

Este modelo es muy completo y examina cada una de las áreas de la empresa con el fin de analizar y relacionar cada uno de los factores que puedan afectar o representen un riesgo para el negocio o desarrollo del objeto social, el cual tiene como función principal:

> Reconocer la existencia de procesos, de un personal que los lleva a cabo (...), de una seguridad razonable para la administración y el Consejo de directores con miras a la consecución de los objetivos (operacionales, información financiera y de cumplimiento) y también la existencia de unos componentes interrelacionados (López y Guevara, 2016, p. 5).

Por lo tanto, a través de esta herramienta se busca la eficacia y eficiencia de las operaciones, fiabilidad de la información financiera, y cumplimiento de las leyes y normas que sean aplicables. Para lograr estos fines y realizar un mejor control y análisis de la compañía, los componentes básicos que contempla este modelo y que permiten desarrollar el control interno se basan en: el ambiente de control, Evaluación del

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riesgo, información y comunicación, actividades de control y Monitoreo y seguimiento.

3.3.1 Ambiente de Control

A través del ambiente de control se busca proporcionar una buena relación del recurso humano con la herramienta, produciendo un entorno en el cual se estimule y se permita la correcta implementación de los controles, así como la existencia de las condiciones para llevar a cabo la aplicación de los mismos; todo esto puede verse afectado cuando no existe una estructura organizacional adecuada, tal como se pudo observar en la presente investigación, toda vez que existen cargos y roles documentados pero que no se encuentran visibles dentro del organigrama. Bajo el mismo componente, se puede observar que, las promociones laborales son muy escasas, debido al nivel de exigencia y responsabilidad para pasar a otra área, pero cuando sucede se deja constancia de ello en los respectivos libros de actas; en cuanto a las medidas correctivas, no se lleva un libro o manual diario donde estas sean anotadas sino que se realizan de forma verbal por cada jefe de área y cuando la ocasión lo amerite se lleva ante instancias superiores, que son quienes determinan el proceso a seguir, dejando constancia de ello en las respectivas actas; por último, se puede decir que existe poca rotación de personal en las áreas, lo cual indica que la Fundación garantiza la estabilidad y las buenas condiciones laborales de su personal.

Los autores Duarte y Beltrán (2016) obtuvieron resultados similares en su estudio "Implementación de mejoras en los procedimientos contables y administrativos para la Fundación Recogiendo Semillitas", donde identificaron además, que existen factores tales como: la carencia de un organigrama, falta de segregación de funciones, ineficiencia de los procesos y la falta de elaboración de manuales, que son cruciales determinar en la aplicación del ejercicio del control y mejora.

3.3.2 Evaluación del Riesgo

La evaluación del riesgo es un tanto compleja y necesaria, ya que ello implica tener la capacidad y disponibilidad para tomar acciones preventivas, de detección o correctivas en el momento preciso, logrando un mejoramiento del control. Uno de los puntos cruciales en este apartado es la dirección de las prácticas administrativas, contables y financieras bajo las políticas establecidas. Se pudo evidenciar a través del Check List realizado que no existe como tal un manual de procesos y procedimientos sino que se encuentran estos incluidos en un archivo denominado Manual de Campo o PFM 2.5, al igual que las políticas y procedimientos organizacionales. Además, se encontró que, en la mayoría de casos las prácticas administrativas y financieras se llevan acorde a lo establecido en las políticas, sin embargo, existe un riesgo alto en cuanto a la información contable, ya que al no llevarse esta de forma continua y bajo un sistema contable se dificulta la obtención de información de forma oportuna y eficaz que permita tomar decisiones en un momento dado, ya sea con el fin de verificar el alcance de los objetivos y metas establecidas o tomar medidas preventivas y/o correctivas en cuanto al funcionamiento de la entidad, representando también esto un riesgo a nivel legal, toda vez que incurre en el incumplimiento a lo dispuesto en el artículo 45 de la ley 190 de 1995 en el cual se estipula la obligatoriedad de las ESAL de llevar contabilidad y las diversas sanciones a que se encuentra expuesta.

De acuerdo a los resultados revelados, en estudios similares se pudo establecer que existen factores claves para lograr el éxito de las organizaciones, dentro de los cuales se puede destacar la evaluación y mitigación de los riesgos, teniendo en cuenta todos aquellos estándares normativos y operativos, lo cual conlleva a una mejor calidad y confiabilidad por parte de los usuarios (Rodríguez y Suárez, 2014). Es decir, que es necesario llevar a cabo dentro de las entidades acciones de evaluación y mitigación del riesgo, dentro de los cuales se encuentra aquel de tipo legal.

3.3.3 Actividades de Control

Dentro del componente de actividades de control se buscan desarrollar acciones que garanticen la minimización de los riesgos y la consecución de los objetivos, trayendo consigo la implementación de ciertas estrategias por parte de la

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administración, lo cual sucede de acuerdo con Cárdenas, Rincón y Guio (2017) porque "la empresa alcanza un nivel de complejidad tal, que la obliga a generar estrategias y a buscar un modelo de control de las mismas" (p. 2). Esto refleja que una de una de las más usadas es la formulación de los manuales de procesos, procedimientos y políticas, los cuales deben pasar por un constante sistema de actualización para que puedan dar respuesta a todas las actividades. Es decir, para que se puedan llevar a cabo las actividades de control es indispensable que las organizaciones, implementen y fortalezcan dentro de sus estrategias la actualización e innovación constante, asegurando con ello el éxito y perdurabilidad en el tiempo. Se pudo identificar que dentro del archivo que lleva la Fundación denominado Controles Internos y en el Manual de Campo o PFM 2.5 donde se lleva la documentación de procesos y procedimientos hace falta la descripción de algunos; otros por su parte, no han sido actualizados y alineados a los nuevos marcos normativos, legales y organizacionales.

3.3.4 Información y Comunicación

La información y comunicación es esencial, ya que ayuda al mejoramiento de los procesos y permite brindar una mayor seguridad, conocimiento y confiabilidad en el negocio u objeto social, tanto a los colaboradores como a los clientes de la información externos. De acuerdo a las observaciones consignadas se pudo evidenciar que SI se realiza una recopilación de información de terceros bajo las políticas y procedimientos establecidos, sin embargo, no se lleva una base de datos en cuanto a esta información de agentes externos. De igual manera, se pudo verificar que no existen unos plazos establecidos para la recopilación, divulgación y respuesta a las comunicaciones internas y externas, lo cual puede derivar en una dirección y gestión inadecuada e ineficaz de la organización y puede generar traumatismo y sobrecarga laboral, así como demora en la presentación de información a terceros; asimismo, se pudo conocer que la fundación cuenta con una página web registrada, sin embargo no existe claridad sobre la persona responsable de su manejo, lo cual ocasiona que esta no se encuentre actualizada, conociendo que a través de ella puede extenderse y darse a conocer ante un mayor público.

Por otro lado, la información que maneja la Fundación del personal y de terceros (de acuerdo a los criterios de medición) se encuentra en un nivel MEDIO ya que se garantiza la seguridad y acceso solo al personal autorizado, sin embargo, existen documentos que presentan una seguridad BAJA ya que se encuentran a la vista del público y en algunos casos no funciona el sistema de seguridad en el cual se encuentran ubicados, lo cual puede ocasionar robo y pérdida de documentos e información de agentes internos y externos. De igual manera, existen algunos servidores y equipos que contienen información legal y acceso a cuentas de la entidad, pero no tienen restricciones de acceso al iniciar sesión en los mismos.

Como apoyo a lo anterior, en el estudio "Fortalecimiento Empresarial a Entidades sin ánimo de lucro. Fusagasugá – región" realizado por Escobar, Ruiz y Escobar (2015) obteniendo resultados similares en cuanto al componente de información y comunicación, argumentan que "existe la necesidad de fortalecer la capacidad endógena institucional para la comunicación y el desarrollo competitivo de la economía, la tecnología y el emprendimiento" (p.101). Esto permite deducir, que uno de los puntos quizás más débiles dentro de este tipo de organización como las ESAL (aunque se puede dar también en otras organizaciones), son sus sistemas de información, toda vez que son vulnerables y poseen muy poca seguridad en su manejo.

3.3.5 Supervisión y Monitoreo

El resultado de la implementación y ejecución de este componente se traduce en un mayor nivel de calidad que conecta varios procesos. La realización de actividades de supervisión y monitoreo no corresponde a una sola área o departamento, sino que hace parte de la responsabilidad de cada persona para la consecución de los objetivos. Desde este enfoque "La supervisión identifica si las acciones de cada nivel del proceso conducen a los otros niveles

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previstos o si es necesario hacer cambios. El monitoreo permanente incluye actividades de supervisión, directamente por las distintas estructuras de dirección" (Vega y Nieves, 2016, p. 4). Por consiguiente, se puede inferir que para el caso del componente de supervisión y monitoreo, existe una interrelación y transversalidad entre cada proceso, área y actividad de la empresa, tal que si ocurre algún suceso negativo en uno de ellos, eso crea una cadena o línea de daño general si no se corrige a tiempo.

A través de los diferentes instrumentos de recolección de datos se pudo obtener que, aunque existen controles internos en la entidad estudiada, es necesario realizarle algunas mejoras y ajustes al mismo que permitan que este sea eficiente, ajustes tales como mayor documentación de las actividades, identificación y responsabilidades de la persona responsable del control interno, así como el diseño, actualización y/o implementación de los diferentes manuales que ayudarán a crear un mayor nivel de productividad, eficiencia y eficacia en las actividades.

Principales recomendaciones para fortalecer el Sistema de Control Interno y mejorar la toma de decisiones en los procesos administrativos, contables y financieros

Luego de realizar el proceso de verificación o Check List del control interno se identificó que no existe un manual de funciones y responsabilidades sino que estas se encuentran descritas en los respectivos contratos. Del mismo modo, se obtuvo que el 100% de los encuestados, tienen una percepción ALTA sobre la filosofía de dirección y el estilo de gestión desarrollado, demostrando, que el trabajo realizado por la gerencia, directivos y jefes de área tiene una buena aceptación dentro del resto de personal. Sin embargo, se hace necesario en este sentido, expresar que es recomendable se implemente y documente una ruta y sus respectivos responsables para realizar las quejas, sugerencias, recomendaciones y/o denuncias por parte del personal interno y externo, logrando una mayor transparencia y evaluación de la gestión desarrollada.

Luego de realizar las observaciones respectivas se pudo establecer que la entidad cuenta con adecuado número de personal para el nivel de actividades y operaciones desarrolladas; en cuanto a la ubicación geográfica se podría decir que esta es pertinente para la labor y zona de impacto; mientras tanto, el impacto social se puede decir que en el último año no ha tenido un crecimiento significativo, sino que contrario a esto ha disminuido la cobertura y nivel de patrocinio. Por último, los datos obtenidos revelan que el 83% de los encuestados considera el nivel de su actual condición laboral de acuerdo a sus conocimientos, habilidades y competencias, como ALTO, entretanto, que el 17% restante considera que este nivel es MEDIO. Esto deja entrever que si existiera una mejor condición laboral en otra organización las personas optarían por tomar la decisión de tomar las respectivas ofertas, lo cual va muy ligado al tema de calidad laboral, donde se pudo constatar que el 82% de las contrataciones corresponden a la modalidad de Prestación de servicios mientras que el otro 18% corresponden a la modalidad de Contrato Indefinido, coexistiendo con ello una mayor incertidumbre con respecto al futuro y condiciones laborales.

IV. CONCLUSIONES

Frente a lo expuesto anteriormente, se puede argumentar que, el tema de fortalecimiento del SCI que cada entidad, empresa u organización tiene implementado, independientemente del modelo seguido, es una responsabilidad que implica e involucra esencialmente a las partes superiores de la estructura organizacional, ya que son ellos quienes desarrollan la misión y visión de la entidad, para que luego se trabaje en las diferentes estrategias y la trazabilidad de los objetivos y metas.

Es necesario que exista un área o persona encargada del control interno, y que en lo posible este no sea manejado por la gerencia y la administración. Así mismo, el diseño de un código de ética es esencial dentro de las organizaciones, esencialmente cuando nos referimos a las ESAL, ya que su inexistencia puede afectar la conducta y toma de decisiones de una persona frente a determinadas situaciones, ya que no existe

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claridad bajo qué parámetros actuar. Igualmente, es pertinente que pueda existir un Comité de auditoría u órgano que cumpla las funciones de este, velando por el cumplimiento de las diferentes políticas y prácticas establecidas, de tal forma que se minimice en cada acción los riesgos; brindando también apoyo cuando este sea necesario para superar alguna situación, para lo cual se requiere que estén debidamente familiarizados y actualizados con las operaciones y actividades que lleva a cabo la entidad.

La divulgación de la misión, visión y valores corporativos, hace parte de las actividades empresariales, buscando a través de esto, un mayor reconocimiento y posicionamiento en la comunidad, que es sin duda, uno de los principales ejes que busca alcanzar cualquier organización, especialmente las ESAL, ya que esto trae consigo el beneficio de una mayor concentración local y la fijación de la mirada de muchas organizaciones nacionales, internacionales, públicas y privadas. Por tal motivo, también es necesario que la descripción de algunas políticas, procesos y procedimientos sean actualizadas y alineadas a los nuevos marcos normativos, legales y organizacionales.

Cuando se realiza recopilación de información, ya sea interna o de terceros, estos se deben hacer bajo las políticas y procedimientos establecidos, llevando conjuntamente una base de datos, garantizando la seguridad y acceso a esta solo al personal autorizado.

En cualquier organización, siempre deberán existir plazos establecidos para la recopilación, divulgación y respuesta a las comunicaciones internas y externas, con el fin de no derivar en una dirección y gestión inadecuada e ineficaz de la organización y se pueda evitar generar traumatismo y sobrecarga laboral, así como demora en la presentación de información a terceros.

La contabilidad es esencial dentro de cualquier organización, y aunque no represente en la misma uno de los procesos más relevantes e importantes, es necesario dar cumplimiento a lo dispuesto en los respectivos marcos normativos que rigen su actividad. Teniendo en cuenta de igual manera que representa un factor importante al momento de tomar decisiones e implementar mejoras dentro de la organización, sirve igualmente como medio de control de las operaciones.

A raíz de todo esto, se puede decir que, el nivel de estructuración del SCI es débil, lo cual se obtuvo a través de diferentes ítems de la lista de verificación empleada; también se pudo evidenciar que este sistema se encuentra documentado, pero no posee las actualizaciones y revisiones adecuadas de acuerdo a los lineamientos y normas vigentes; de esta manera, se puede argumentar que el funcionamiento se puede clasificar en el nivel de NO APTO o INADECUADO, atendiendo a las descripciones y formulaciones anteriores.

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Impact of Information and Communication Technology on the Management of Public Universities in Benue State, Nigeria

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ABSTRACT

The study investigates the impact of information and communication technology (ICT) on the management of public Universities in Benue State. Four research questions and two hypotheses guided the study. The study adopted the quantitative research design using the descriptive survey method. The population of the study is 1,748 comprising all the staff of the public Universities in Benue State, of which 446 staff were sampled through the cluster, random sampling and Yamane Taro's sampling technique. A validated instrument titled "Impact of ICT on Management of Universities Questionnaire (IICMUQ)" was used with a reliability coefficient of 0.81 via Cronbach Alpha analysis was used for data collection. The research questions were analysed using percentages, mean and standard deviation and t-test statistic was used to test the hypotheses. The results of the study evidence that the level of ICT facilities available in Universities in Benue State is low as well as the level of computer knowledge by University staff in Benue State, ICT has a low impact on the management of admissions and finance in Universities in Benue State, and the perception of staff in the Federal and State University in Benue State on the impact of ICT on the management of admissions and finance is not significantly different. Consequently, the study recommended that among others that the University management should boost the availability of ICT facilities in Universities in Benue State.

Keywords: management, information and communications technology, admissions, finance.

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Impact of Information and Communication Technology on the Management of Public Universities in Benue State, Nigeria

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ABSTRACT

The study investigates the impact of information and communication technology (ICT) on the management of public Universities in Benue State. Four research questions and two hypotheses guided the study. The study adopted the quantitative research design using the descriptive survey method. The population of the study is 1,748 comprising all the staff of the public Universities in Benue State, of which 446 staff were sampled through the cluster, random sampling and Yamane Taro's sampling technique. A validated instrument titled "Impact of ICT on Management of Universities Questionnaire (IICMUQ)" was used with a reliability coefficient of 0.81 via Cronbach Alpha analysis was used for data collection. The research questions were analysed using percentages, mean and standard deviation and t-test statistic was used to test the hypotheses. The results of the study evidence that the level of ICT facilities available in Universities in Benue State is low as well as the level of computer knowledge by University staff in Benue State, ICT has a low impact on the management of admissions and finance in Universities in Benue State, and the perception of staff in the Federal and State University in Benue State on the impact of ICT on the management of admissions and finance is not significantly different. Consequently, the study recommended that among others that the University management should boost the availability of ICT facilities in Universities in Benue State. In addition, Universities in Benue State need to enhance the computer skills level of their staff. Management of admissions and finance should be enhanced by the seamless integration of its processes with ICT by using a web portal from the point of application, screening shortlisting, issuance of admission letters, registration and matriculation and automation of accounting and financial processes.

Keywords: management, information and communications technology, admissions, finance.

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I. INTRODUCTION

The success of University education especially in the 21st Century would not only be determined based on the provision of adequate educational resources such as academic and non-academic staff, funds, school facilities, equipment and instructional materials as the paramount issue among the above factors that would facilitate the successful operation of the University system is the nature of management (Usman, 2016). The complex nature of the University system, as a result of regular expansion in terms of the introduction of additional academic programmes, has brought about the increment in the high level of enrolment and staff employment. As such, the operations of the University system become complex and require proper management through the enhancement of effective financial management, planning, decision-making, control and monitoring of students and staff activities. Effective decision-making is an essential element as well as the major responsibility of all the

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administrators of Universities (Ekundayo & Ajayi, 2017).

Management signifies the pursuit of organizational goals efficiently and effectively by integrating the work of people through planning, organising, leading and controlling the organization's resources (Williams & Kinicki, 2018). It is the arrangement of tasks required to control the operations and activities of a Stated plan to achieve the objectives of an institution.

The inefficiencies associated with the creation, storage, preservation, and presentation of large information in paper form make managerial processes in the University system very cumbersome (Makewa, Meremo, & Role, 2013). Consequently, alternative means provided by Information Communication Technology (ICT) becomes very vital which prompted the Federal Ministry of Education in Nigeria to revive the existing ICT policy on the management of Universities in Nigeria. The major aspect of the policy is to ensure that ICT systems for education administration are in place and all necessary common infrastructure for the storage and management of the ensuing data are provided for all educational institutions and establishments (FME, 2019).

Information and Communications Technology (ICT) is the technology that supports activities involving the creation, storage, manipulation and communication of information. The application and use of ICT have led to the emergence of different forms of microelectronic and telecommunications tools such as laptops and computers, computer networks, the Internet, digital printers and mobile technology, which enable managers or administrators to record, store, process, retrieve, and transmit information (Adebayo, 2012). Due to these rapid changes, there is a growing demand for educational institutions to integrate ICT in all their management endeavours. ICT integration plays a vital role in supporting powerful and efficient school management in the education sector. Information communication technology can improve or enhance the management tasks of Universities (Harerimana & Mtshali, 2019).

Management of admissions in Universities involves activities starting from the advertisement of applications, and sale of application forms to prospective students, which are filled and submitted concerning the various programmes offered in the University.Some pre-admission screening is carried out in some programmes and the successful candidates are offered admission letters. The automation of these processes makes them more effective and efficient as it reduces the time spent on these activities mentioned above (Adetunji, 2015). The type of ICT used here includes but is not limited to desktop computers, University websites, printers, examination scoring machines, telephones and so on. Admission in the University system could be managed using different software such as the admissions and enrolment management software which helps school administrators to run the entire student admissions and enrolment process, from processing applications to handling application-related fee payments. The software can be designed to contain student application processing functionality, email marketing, scheduling and real-time application progress tracking tools.

Management of finance in Universities involves acceptance of payments, auditing, wages and salaries, budgeting and financial appraisals. Other activities involve keeping fees registers, cash books, petty cash books, accounts records registers and receipt books, ledgers, and other financial management books. The use of computer and accounting software has improved the workflow in financial management in Universities (Mbithi, 2017). ICT that can be applied here is accounting software, printers, computers, scanner, internet access, currency counting machine, photocopier and so on.

It is quite unfortunate that Universities in Benue State are yet to fully integrate ICT into the management of the University system as staff members still go through the laborious exercise of manual registration of students to keep accurate students records, and the bursary staff still perform the task of financial management through the manual keeping of documents,

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manual payment of bills, manual screening and registration of students in the 21st Century that is tagged as the "Computer Age". The above situations could reduce the level of effectiveness and efficiency in the management of the University system (Agboeze, Ugwoke, & Onu (2012). Hence, this study investigated the impact of Information and Communication Technology on the Management of Public Universities in Benue State, Nigeria.

II. STATEMENT OF THE PROBLEM

The government, researchers and the public have raised concerns about the need for the integration of ICT in the administration of the University system. It is a fact that when ICT facilities are utilized, it minimizes occupational stress, which results in efficiency and effectiveness. However, there are concerns about how information is managed in Universities in Benue State. There are cases of vital documents getting lost through human activities, fire incidence, flooding or natural disasters. Financial records are tempered with resulting in loss of revenue to the Universities and loss of wages by staff and falsification of school fee receipt by students. Management decisions are delayed when tasks are done manually as opposed to the use of ICT, which is considered a standard in managerial activities. The concern of this study is to investigate the extent to which ICT facilities are available in Universities in Benue State, and the ICT skills the University managers possessed to utilize these facilities in the areas of management of admissions and finance in public Universities in Benue State.

Research Questions

i. What is the level of availability of ICT facilities in Universities in Benue State?
ii. What is the level of computer knowledge by University managers in Benue State?
iii. What is the impact of ICT on the management of admissions in Universities in Benue State?
iv. To what extent does ICT influence financial management in Universities in Benue State?

Hypotheses

Ho_1: There is no significant difference in the perception of Federal and State University staff on the impact of ICT on the management of admissions in Universities in Benue State.

Ho_2: There is no significant difference in the perception of Federal and State University staff on the impact of ICT on financial management in Universities in Benue State.

III. RESEARCH METHODOLOGY

This study adopted the quantitative research design using the descriptive survey method. The population of the study is 1,748 staff in all the public Universities in Benue State namely: Federal University of Agriculture, Makurdi and Benue State University, Makurdi (1,087 Federal-owned and 661 State-owned). A sample size of 446 was drawn using the cluster, random and Yamane Taro's formula (1973) sampling. A structured questionnaire titled "Impact of ICT on Management of Universities Questionnaire" (IICMUQ) and a checklist were used to collect data, which were clustered according to the four research questions: Respondent's Checklist on availability of ICT facilities, the level of computer knowledge by University managers, the relationship between ICT and management of admissions in Universities and ICT and management of Finance. A validation index of 84.61 was obtained using the split-half method and Cronbach's alpha, a reliability coefficient of 0.81 was obtained as an internal reliability index of the instrument. Percentages, Mean and Standard Deviation were used to analyse the research questions while t-test statistic was employed for the two null hypotheses at a 0.05 level of significance. A mean score of 2.50 and above was considered acceptable whereas any item with a mean score below 2.50 was considered rejected.

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Research Question 1: What is the level of availability of ICT facilities in Universities in Benue State?

Table 1: Response to ICT resources available in Universities in Benue State

S/N	ICT Resource	University of Agriculture, Makurdi (UAM)			Benue State University, Makurdi (BSU)		
		No.	%	Decision	No.	%	Decision
1.	Desktop computer	191	70.22	A	109	67.70	A
2.	Printing machine	50	18.38	NA	137	50.37	A
3	Scanning machine	45	16.54	NA	55	20.22	NA
4	Photocopy machine	37	13.60	NA	61	22.43	NA
5	Facsimile machine	74	27.21	NA	82	30.15	NA
6	CD-ROMs	64	23.53	NA	71	26.10	NA
7	USB flash drive	38	13.97	NA	141	51.84	A
8	External Hard Disk	60	22.06	NA	71	26.10	NA
9	Projector	49	18.01	NA	101	37.13	NA
10	Intercom	45	16.54	NA	19	6.99	NA
11	Internet Access	160	58.82	A	138	50.74	A
12	University Website	228	83.82	A	144	52.94	A
13	Digital Camera	70	25.74	NA	63	23.16	NA
14	Television	32	11.76	NA	48	17.65	NA
15	Telephone	159	58.46	A	142	52.21	A
16	CCTV	66	24.26	NA	51	18.75	NA
17	Biometric Scanner	83	30.51	NA	73	26.84	NA
18	DVD Player	94	34.56	NA	92	33.82	NA
19	Typewriter	113	41.54	NA	28	10.29	NA
20	Radio	87	31.99	NA	79	29.04	NA
21	Currency Counter	79	29.04	NA	48	17.65	NA
	Average %		31.93	NA		32.01	NA

Scale % = 50% Key: A=Available, NA=Not Available

Table 1 shows computed responses in percentages for the University of Agriculture, Makurdi, and Benue State University. A total "available" percentage greater than 50% is adjudged to be available whereas those not totalling up to 50% are taken as "not available." The available ICT facilities at the University of Agriculture, Makurdi include University website (83.84%), Desktop computer (70.22%), Internet Access (58.82%) and Telephone (58.46%). The ICT facilities having a percentage less than "50%" are considered not available. Such facilities in UAM are a Printing machine, Scanning machine, Photocopy machine, Facsimile machine, CD-ROMs, USB flash drive, External Hard Disk, Projector, Intercom, Internet Access, Digital Camera, Television, CCTV, Biometric Scanner, DVD Player, Typewriter, Radio and Currency Counter. An average of 31.93% reveals that the availability of ICT facilities at BSU is very low. For Benue State University, Makurdi, the ICT facilities in Table 1 adjudged to be available include Desktop Computer (67.70%), the University Website (52.94%), Telephone (52.21%), USB flash drive (51.84%), Internet access (50.74%) and Printing machine (50.37%). An average of 32.01% shows that the availability of ICT facilities at the University of Agriculture, Makurdi is very low.

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Research Question 2: What is the level of computer knowledge by University managers in Benue State?

Table 2: Responses on Level of computer knowledge by University managers in Benue State

S/N	Items	Federal University			State University		
		X	*SD*	Dec.	*X*	*SD*	Dec.
1.	Creating presentations using packages like MS-PowerPoint.	2.08	1.09	L	1.17	0.88	L
2.	Transferring of files from a device to a computer e.g., "desktop" or "my document"	2.06	0.97	L	2.21	0.97	L
3.	Printing of documents from my computer to a printer	2.27	0.87	L	2.43	0.83	L
4.	Computations using spreadsheet packages like MS-Excel.	2.05	0.98	L	2.06	0.99	L
5.	Creation of a new e-mail address	2.14	0.92	L	2.23	0.82	L
6.	Searching the internet for information.	2.43	0.70	L	2.08	0.92	L
7.	Sending of ordinary emails and with attachment	2.12	0.98	L	3.05	1.13	H
8.	Accessing databases stored on CD-ROMs and DVDs	2.00	0.80	L	2.29	1.04	L
9.	Save files into a USB flash drive and retrieve them.	2.23	0.84	L	2.19	1.11	L
10.	Connecting to the internet through a Wifi hotspot.	2.15	0.98	L	2.11	1.03	L
	Average Mean	2.15		L	2.18		L

Key: H = High, L = Low, Dec.= Decision

Table 26 shows the responses on the level of computer knowledge by University managers in Benue State. An examination of the table reveals that in the Federal University of Agriculture, Makurdi, items 1-10 is measured at 2.08, 2.06, 2.27, 2.05, 2.14, 2.43, 2.12, 2.00, 2.23 and 2.15 with an average mean of 2.15, which is below the mean scale of 2.50. This means that the level of computer knowledge by the staff of the Federal University of Agriculture, Makurdi is low.

In Benue State University, respondents have the rates of the same items with a mean score of 1.17, 2.21, 2.43, 2.06, 2.23, 2.08, 3.05, 2.29, 2.19 and 2.11 in the same order. A mean average of 2.18 shows that the level of computer knowledge among the staff of the State University is also low.

From Table 2, the average mean values of 2.45 for the Federal University and 2.46 for the State University respectively showed that the staff of both Universities possess a low level of computer knowledge.

Research Question 3: What is the impact of ICT on the management of admissions in Universities in Benue State?

Table 3: Responses on the impact of ICT on the management of admissions in Universities in Benue State

S/N	Items	Federal University			State University		
		X	SD	Dec.	X	SD	Dec.
11.	The University receives admission applications through the admissions portal or website.	2.86	1.06	A	2.62	0.82	A
12.	Shortlisted candidates are posted on the University's website.	2.60	1.00	A	2.39	0.94	A

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13.	Prospective students can process their admission in the comfort of their homes without travelling.	2.40	1.11	D	2.48	0.94	D
14.	Issuance of the Admission Letter is done electronically.	2.32	0.79	D	2.45	0.84	D
15.	Advertisements for admission are done using the internet.	2.44	0.91	D	2.33	0.90	D
16.	Registration of admitted students is carried out through the University's portal.	2.19	1.08	D	3.11	0.90	A
17.	Processing admissions is only done electronically.	2.35	1.08	D	1.86	0.98	D
	Grand Mean	2.45		D	2.46		D

Key: A = Agree, D = Disagree, Dec. = Decision

Table 3 depicts the responses of University managers on the impact of ICT on the management of admissions in Universities in Benue State. Table 3 indicates that the questionnaire items 11to 17 carry a mean score of 2.86, 2.60, 2.40, 2.32, 2.44, 2.19 and 2.35 for the Federal University of Agriculture, Makurdi. A grand mean score of 2.45 indicates that there is a low impact of Information and Communication Technology on the management of admission in the University. Responses in the State University for items 11 to 17 with 2.62, 2.39, 2.48, 2.45, 2.33, 3.11 and 1.86 respectively with a grand mean of 2.46 shows that there is a low impact of ICT on the management of admissions in Benue State University, Makurdi. A grand mean less than 2.50 for both the Federal and State University of 2.45 and 2.46 respectively shows that ICT has a low impact on the management of admissions in Universities in Benue State.

Research Question 4: To what level does ICT influence financial management in Universities in Benue State?

Table 4: Responses to ICT influence on financial management in Universities in Benue State

S/N	Items	Federal University			State University		
		X	*SD*	Dec.	*X*	*SD*	Dec.
18.	The University carries out most of its financial transactions using the software.	2.91	1.05	A	2.58	0.90	A
19.	An electronic currency counting machine is used to count money.	2.35	1.14	D	1.85	0.95	D
20.	The University does its financial audit through the use of computers.	2.08	0.99	D	2.51	1.04	A
21.	Annual budgets for units/departments are prepared using MS-Excel.	2.54	1.16	A	2.29	0.90	D
22.	Payment of salaries is automated through an electronic system.	2.50	0.96	A	2.65	0.01	A
23.	Using an automated payment system has minimized the loss of income by staff	2.10	1.02	D	2.04	1.92	D
24.	Payment of school fees is efficient and time-saving	2.28	0.92	D	2.56	1.07	A
25.	There is more financial accountability with the use of electronic accounting.	2.21	0.91	D	2.24	1.05	D
26.	The University only accepts online payments.	2.05	1.06	D	2.13	1.11	D
	Grand Mean	2.34		D	2.32		D

Key: A = Agree, D = Disagree, Dec. = Decision

Table 4 shows the respondents' views on how ICT influences the management finance in Universities in Benue State. A closer look at Table 4 with items 18-26, under the Federal University, reveals that only items 18, 21 and 22 have a mean score of 2.91, 2.54 and 2.50 respectively above the criterion scale of 2.50. The rest of the items have mean ratings below 2.50. A grand mean of 2.34 was adjudged 'Disagreed.'

At Benue State University, Makurdi, items 18, 20, 22 and 24 have a mean score of 2.58, 2.51, 2.61

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and 2.56 respectively. The rest of the items 19, 21, 23, 25 and 26 have ratings of 1.85, 2.29, 2.04, 2.24 and 2.13 respectively falling below the criterion mean of 2.50. A grand mean of 2.32 was considered as 'Disagreed.'

With the two means of 2.34 and 2.32 below the scale mean, it means that ICT has a low influence on financial management in Universities in Benue State.

Hypothesis 1: There is no significant difference in the perception of Federal and State University staff on the impact of ICT on the management of admissions in Universities in Benue State.

Table 5: Summary of t-test Analysis on the perception of Federal and State University staff on the impact of ICT on the management of admissions in Universities in Benue State.

S/N	Source	*N*	*X*	*SD*	*df*	Sig.	*t*-cal	*t*-value	Decision
1	Federal University	272	2.45	0.90					
					431	0.05	0.41	1.96	Not Significant
2	State University	161	2.46	0.96					

Not Significant at df=431; P>0.05; $t\text{-}_{calculated} < t\text{-}_{tabulated}$

Table 5 shows the calculated *t*-value is 0.41 at a degree of freedom of 431 and a 0.05 significance level. Since the calculated *t*-value of 0.41 is less than the *t*-value of 1.96, the null hypothesis for the study is retained. Therefore, there is no significant difference in the perception of Federal and State University staff on the impact of ICT on the management of admissions in Universities in Benue State.

Hypothesis 2: There is no significant difference in the perception of Federal and State University staff on the impact of ICT on financial management in Universities in Benue State.

Table 6: Summary of T-test Analysis on the perception of Federal and State University staff on the impact of ICT on financial management in Universities in Benue State.

S/N	Source	N	X	SD	df	Sig.	t-cal	t-value	Decision
1	Federal University	272	2.34	1.02					
					431	0.05	0.54	1.96	Not Significant
2	State University	161	2.32	0.88					

Not Significant at df=431; P>0.05; $t\text{-}_{calculated} < t\text{-}_{tabulated}$

The test of the hypothesis in Table 6 reveals that the calculated *t*-value of 0.54 given a 431 degree of freedom and 0.05 significance level is less than the *t*-value of 1.96. Since the calculated *t*-value of 0.54 is less than the *t*-value of 1.96, the second null hypothesis of the study is also retained. Thus, there is no significant difference in the mean ratings of staff in Federal and State Universities on the impact of ICT on financial management in Universities in Benue State.

IV. CONCLUSION

The task of managing the University system is enormous because of large data and information needs arising from students, staff and other management areas. The success of managing these institutions is dependent on the effectiveness of its management activities. ICT integration plays a vital role in supporting powerful and efficient management decisions,

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which can improve or enhance the management tasks of Universities.

From the data collected, the level of ICT facilities available is low and with the low level of skills required to carry out their tasks using them, much needs to be done in terms of adequacy and quality, which will impact on the management of Universities in Benue State. Thus, Universities must be equipped with the latest technology to enhance their administrative tasks to bring about the desired output of the Universities in line with the mandate of their establishment. The study reveals that the management of Universities in Benue State can only be effective and efficient when its tasks and activities are automated by ICT facilities, which should be adequate in number and utilized properly.

V RECOMMENDATIONS

1. The level of availability of ICT facilities in Universities in Benue State should be improved by procuring tools, providing good maintenance to the available ones, and replacing obsolete equipment.
2. Universities in Benue State need to boost the computer skills level of their staff to enhance productivity, effectiveness and efficiency.
3. The management of admissions in Universities in Benue State should be enhanced by the Universities' management through seamless integration of its processes with ICT by using web-based platforms and portals from the point of application, screening shortlisting, and issuance of admission letters, registration and matriculation.
4. For ICT to have a positive impact on the management of finance in Universities in Benue State, there is a need for the Universities' management to automate the accounting and financial management processes in the Universities.

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