

Technological Innovativeness and Competitive Advantage of Deposit Money Banks in Port Harcourt, Nigeria

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ABSTRACT: This study examined the relationship between technological innovativeness and competitive advantage of Deposit Money Banks in Port Harcourt. The study adopted a cross-sectional survey in its investigation of the variables. Primary data was generated through self-administered questionnaire. The population of the study was 223 employees of twenty one (21) Deposit Money Banks in Port Harcourt. The sample size of 143 was determined using the Taro Yamane's formula for sample size determination. The reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70. The hypotheses were tested using the Spearman Rank Order Correlation Coefficient. The tests were carried out at a 95% confidence interval and a 0.05 level of significance. The study findings revealed that there is a significant technological innovativeness and competitive advantage of Deposit Money Banks in Port Harcourt, Nigeria. The study recommends that Deposit money bank should encourage their Information Technology department by way of developing programs that will gear the IT personnel to innovate way on how to use technology such as apps and program (software) which will make banking much easier for customers.

KEYWORDS: *Technological Innovativeness, Competitive Advantage, Cost Leadership, Market Focus, Differentiation*

I. INTRODUCTION

In a highly competitive environment, innovation is the essential key to a firm obtaining a dominant position and gaining higher profits (Cerulli, 2014). Therefore, the understanding of which strategic innovation management practices lead to an improved organizational performance is important. When looking at innovation strategy, Pinoy (2015) posit that an effective strategy must correctly inform which job executor, job, and segment to target to achieve the most growth, and which unmet needs to target to help customers get the job done better. Siep (2010) stated that when it comes to creating the solution, an innovation strategy is expected to impact positively on the organizational performance. It is worthy of note that some innovation strategies fail in these regards, which is why innovation success rates are perceived to be wishy-washy. Innovation in service-based industries has not been considered in details at the organizational level (Thomke, 2007). However, the organizations are an attractive environment for innovation studies on organizations, due to its complex and important nature (Pennings & Harianto, 1992).

In the present era of economic instability, banking industry has emerged as one of the major and vital service industries, which has affected millions of lives of people all over the world. It is unique in its service, socially and economically. In 2008, many countries witnessed reformations in the state of affairs of the banking industry. These reformations are fallouts of change in technology, financial environment, and financial globalization and deregulation (Francisco & Emili, 2002). According to Frances, Frei, Harker and Larry (2010), the organizations have been continuously reforming with respect to market share, technology, competition and consumer demands. Frances (2010), in addition added that the vital force of this industry is the fast paced evolution of consumer requirements, wants and desires because there is a high demand by the consumers for the delivery of financial services in addition to an increased variety in investment and deposit products. Therefore, there has been a need for deposit money banks to amend their competitive strategies for products and marketing, in a wider context. According to Erkko and Ari-Pekka Hameri (1995) survival for a firm that wants to thrive and fly high in these intrinsically unfriendly, dynamic surroundings, the need for strategic capabilities is paramount. Innovation and technology are some of the examples that a firm should embrace in order to survive and score high in this turbulent environment.

According to Fernando, Chang and Tripathy (2015), unless a company has a genuine scientific or technological advantage, preferably one that can be protected by patent, competitors can more often than not match any incremental change in an ever-shortening timescale. Cost reduction in an operation, may be by use of new tools and techniques in operational management, relocating production to areas of lower labour cost. A combination of both likewise creates advantage that can be sustained only over a relatively short time. As changes in technology occur, the firm's technology and production levels must be adapted to respond to new requirements. Should this not happen, the company could lose its cost advantage if a rival incorporates these changes instead (Coelli, Rao, O'Donnell & Battese, 2005). Neither should the firm's leaders disregard their products' possible obsolescence nor clients' new expectations as clients' needs are always diverse and evolving (Ahmed, Mehmet & Pagell, 2014). In addition, the strategy's drawbacks also include the limited validity of the experience curve when a big change occurs in technology or when new entrants are able to learn more swiftly. The purpose of this study therefore was to examine the relationship between technological innovativeness and competitive advantage of Deposit Money Banks in Port Harcourt.

This following research question guided the study:

- i. What is the relationship between technological innovativeness and cost leadership of Deposit Money Banks in Port Harcourt?
- ii. What is the relationship between technological innovativeness and market focus of Deposit Money Banks in Port Harcourt?
- iii.
- iv. What is the relationship between technological innovativeness and differentiation of Deposit Money Banks in Port Harcourt?

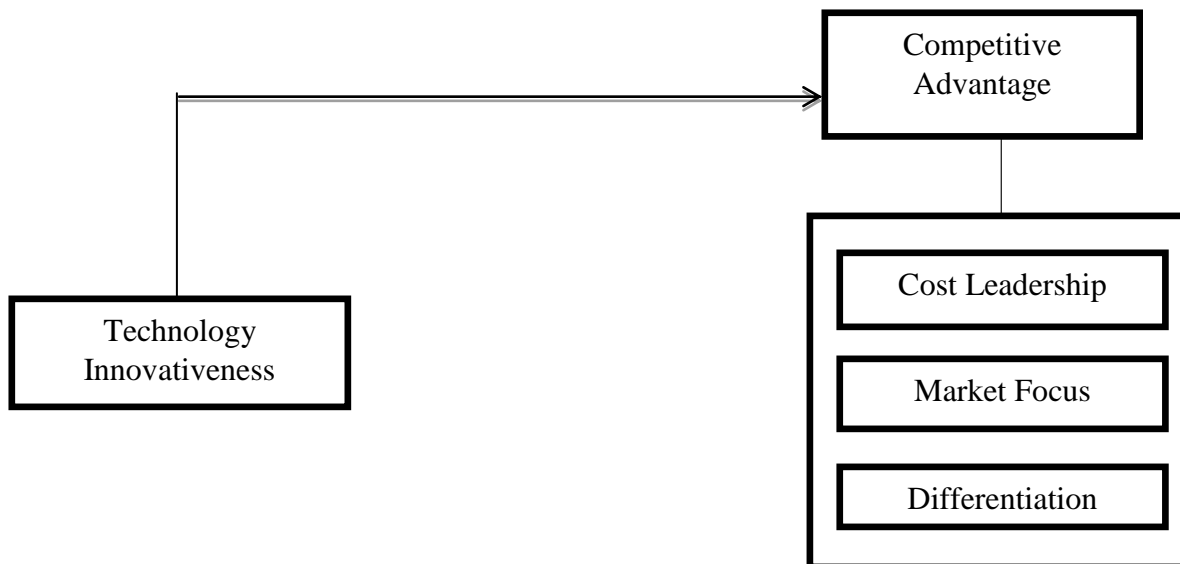


Fig.1 Conceptual framework for the relationship between technological innovativeness and competitive advantage

Source: Author's Desk Research, 2019

II. LITERATURE REVIEW

Theoretical Framework

Resource -Based View Theory

This theory tries to explain the internal sources of a firm's sustained competitive advantage (Kraaijenbrink, Spender and Groen, 2010). The resource-based strategy paradigm emphasizes distinctive, firm-specific, valuable, imperfectly imitable and rare resources and capabilities confer competitive advantage on the firm that possesses them (Wernerfelt, 1984). Its innermost proposition is that if a firm is to attain a state of sustainable competitive advantage it must obtain and control valuable, rare, inimitable, and non-substitutable (VRIN) resource and capabilities, plus have the firms in the place that can absorb and apply them. Resources

relate to a firm's intangible and tangible assets whereas capabilities are the way of accomplishing firm activities, depending on the availability of resources (Wernerfelt, 1984; Barney, 1991).

Simply stated, in order to produce a competitive advantage that is sustainable, firms should base their success in their distinctive competencies which are grounded in their resources and routines. For Menguc and Auh (2006), innovativeness is a rare, valuable and hard-to-copy firm level competence. It is the key driver of innovation in a firm (Damanpour, 1991; Dobni, 2006), and represents a firm's ability to continually develop innovations (Damanpour, 1991; Dobni, 2006; Paleo and Wijnberg, 2008). Fundamentally, innovativeness increases a firm's capacity to innovate (Damanpour, 1991) by encouraging innovative behaviours through strategic practices (Siguaw, Simpson & Enz, 2006). The essence of the argument is that innovativeness is constructed by the purposeful orchestration and strategic application of practices that accumulate bundle and leverage resources (Ireland, Hitt & Sirmon, 2003). In order to create innovativeness a firm must implement strategic practices that enhance their innovativeness competence (that is, strategic practices are the "how to" for creating innovativeness).

According to Resource Based Theory (RBT), human capital is considered to be a source of competitive advantage for entrepreneurial firms. Ownership of firm-specific assets enables a company to develop a competitive advantage. Sustainable competitive advantage results from resources that are inimitable, not substitutable, tacit in nature, and synergistic (Barney, 1991). Therefore, managers need to be able to identify the key resources and drivers of performance and value in their organizations. The RBT also states that a company's competitive advantage is derived from the company's ability to assemble and exploit an appropriate combination of resources. Such resources can be tangible or intangible, and represent the inputs into a firm's production process; such as capital, equipment, the skills of individual employees, patents, financing, and talented managers. As a company's effectiveness and capabilities increase, the set of available resources tends to become larger. Through continued use, these "capabilities", defined as the capacity for a set of resources to interactively perform a stretch task or an activity, become stronger and more difficult for competitors to understand and imitate.

Technological Innovativeness

Many researchers of innovation focused on technological innovation (Freeman & Soete 2000). Technological innovation became one of the most important factors of all the different sizes of the organizations are concerned. So, in order for the organization stay in the market place they have to adopt the rapid change of the technologies. Technological innovation by definition means, the adoption of new ideas which appropriate to the new product or service, and introduction of new element to organization's production process or service operation (Subramanian & Nilakanta, 1996). Technological innovation is an important factor which defines how the organization has competitive advantage, its effectiveness and its overall success. On the other hand, technological innovation seems to have an impact on work productivity, competitive environment, competitive advantage and overall performance of the organization. Technological innovation is something which is unavoidable if the organization wants to stay at the market or enter new market and if they want to gain competitive advantage (Becheikh, Landry & Amara, 2006).

According to Daneels and Kleinschmidt (2001), in the context of product development argued that, new product development consists of the combination of technology and market. They further argued that, when a firm undertaking new product development they should have technology which is enabling to them to develop new product and serve their customers. Technological innovation for product or process contributes to cost reduction, quality improvement, and suitable change in product size which fits customer demand, raw material substitution and new product (Krishnaswamy, Mathirajan & Bala Subrahmanya, 2014).

Competitive Advantage

Competitive advantage is an advantage over competitors gained by offering consumers greater value, either by means of lower prices or by providing products that gives the consumer greater benefits and services that justifies a higher price (Porter, 1985). The notion of creating value provides insight into the sources of competitive advantage. Value creation has three aspects: the benefits received by customers, the costs incurred by the company and its suppliers, and the particular combination of customers and suppliers. Since the total value created by the firm also equals customer willingness to pay minus the costs of using the firm's assets and the costs incurred by suppliers, achieving a competitive advantage means that the firm must either increase customer benefits, lower supplier costs, or discover innovative transactions. Competitive advantage equals the difference between the value created by the company and the potential value created by its competitors. When market demand outruns industry capacity, competitive advantage increases the value added by the company and

also increases its potential profits. When industry capacity outruns market demand, competitive advantage also ensures that the firm will survive (Porter, 1985).

Besanko, Dranove and Shanley (2000) argues that when a firm earns a higher rate of economic profit than the average rate of economic profit of other firms competing within the same market, the firm has a competitive advantage in that market. Saloner, Shepard and Podolny (2001) say that “most forms of competitive advantage mean either that a firm can produce some service or product that its customers value than those produced by competitors or that it can produce its service or product at a lower cost than its competitors. Dierickx and Cool (1989) have echoed Barney (1986) in arguing that competitive advantage is not obtainable from freely tradeable assets. In view of the above, it is apparent that a firm achieves a competitive edge over its competitors by providing a product/service perceived by the customer to yield greater benefits and value than that of the competitors. In addition, competitive advantage will always result in superior performance by the organization which translates to higher profits. Hence, understanding competitive advantage is an ongoing challenge for decision makers. Historically, competitive advantage was thought of as a matter of position, where firms occupied a competitive space and built and defended market share (Stalk, Evans & Shulman, 1992). Competitive advantage depended on where the business was located and where it chose to provide services. Stable environments allowed this strategy to be successful, particularly for large and dominant organizations in mature industries. The ability to develop a sustained competitive advantage today is increasingly rare.

The rapid change in the economic and business environment in recent times has lead organizations to strive harder in other to increase the revenue they generate, their market share, and also the quantum of their customers with quality goods and services that satisfy customers needs. Competition on a global scale has led to changes in technology whereby customers demand for superior products/services at low prices. The escalation in worldwide competition has brought the decline in product life cycle. Emphasis is now being place on the competency of the organization and competitive advantage which is believed to give an edge over other competitors in the industry. Raduan *et al* (2009) relates that “though there are many objectives an organization would want to achieve these days, the two major ones are: (i). to achieve a competitive advantage position and (ii). Enhance their organization’s performance in relation to that of their competitors.

Hence it is necessary that organizations recognize the relationship between its strengths and weaknesses and the potential effects it has on the organizations competitive advantage and performance. Organizations should make a choice of the type of competitive advantage to adopt and the scope to attain it. Porter (1985) developed the generic strategies which when implemented effectively helps an organization to achieve competitive advantage. The strategies are: product differentiation and cost leadership. Porter (1980), explains that a differentiation strategy involves the firm creating a product/service, which is considered unique in some aspect that the customer values because the customer’s needs are satisfied. On the other hand, cost leadership emphasizes low cost relative to that of the competitors. Porter (1985) argued that cost leadership and differentiation strategies are mutually exclusive. According to Chenhall & Langfield-smith (1998) recent literatures and research studies have notwithstanding, questioned this idea recognizing the fact that organizations may pursue elements of both types of strategy. Nevertheless, Kotha & Orne (1989) explains that past researches have shown that a number of the manufacturing organizations view the differentiation strategy as a more important and distinct means to achieve competitive advantage in constrict to a low cost strategy.

According to Barney (1991), when a firm is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors, such a firm has competitive advantage. In addition, competitive advantage is an added advantage one organization has over other organizations in the industry. Competitive advantage exist when organizations provide the same value as other competitors to customers at a lower cost(cost advantage) or provide value that exceed those of competing products (differentiation). According to Prahalad & Hamel (1990) the source of the advantage can be something the business does that is distinctive and difficult to replicate, also known as a core competency.

Measures of Competitive Advantage

Cost Leadership

This is Porter's generic strategies known as cost leadership (Malburg, 2000). This strategy focuses on gaining competitive advantage by having the lowest cost in the industry (Cross, 1999). In order to achieve a low-cost advantage, an organization must have a low-cost leadership strategy, low-cost manufacturing, and a workforce committed to the low-cost strategy (Malburg, 2000). The organization must be willing to discontinue any activities in which they do not have a cost advantage and should consider outsourcing activities to other organizations with a cost advantage (Malburg, 2000). For an effective cost leadership strategy, a firm must have a large market share (Hyatt, 2001). There are many areas to achieve cost leadership such as mass production,

mass distribution, economies of scale, technology, product design, input cost, capacity utilization of resources, and access to raw materials (Malburg, 2000).

Lower costs and cost advantages result from process innovations, learning curve benefits, and economics of scale, product designs reducing manufacturing time and costs, and reengineering activities. A low-cost or cost leadership strategy is effectively implemented when the business designs, produces, and markets a comparable product more efficiently than its competitors. The firm may have access to raw materials or superior proprietary technology which helps to lower costs. Cost leadership strategy seeks to achieve above-average returns over competitors through low prices by driving all components of activities towards reducing costs. To attain such a relative cost advantage, firms will put considerable effort in controlling and production costs, increasing their capacity utilization, controlling materials supply or product distribution, and minimizing other costs, including R&D and advertising. Firms do not have to sacrifice revenue to be the cost leader since high revenue is achieved through obtaining a large market share (Porter, 1987). Lower prices lead to higher demand and, therefore, to a larger market share (Helms et al., 1997). As a low cost leader, an organization can present barriers against new market entrants who would need large amounts of capital to enter the market (Hyatt, 2001). The leader then is somewhat insulated from industry wide price reductions (Malburg, 2000). The cost leadership strategy does have disadvantages. It creates little customer loyalty and if a firm lowers prices too much, it may lose revenues (Cross, 1999).

This generic strategy calls for being the low cost producer in an industry for a given level of quality. The firm sells its products either at average industry prices to earn a profit higher than that of rivals, or below the average industry prices to gain market share. In the event of a price war, the firm can maintain some profitability while the competition suffers losses. Even without a price war, as the industry matures and prices decline, the firms that can produce more cheaply will remain profitable for a longer period of time. The cost leadership strategy usually targets a broad market, (Davidson, 2001). Cost leadership is based on lower overall costs than competitors. Firms that achieve low cost leadership generally make low cost relative to competitors the theme of their business strategy. The firm opens up a sustainable cost advantage over competitors and uses that lower cost as a basis for either under -pricing the competitors and gaining a larger market share at their expense or earning a higher profit margin by selling at the going price. A low cost leader's basis for competitive advantage is lower overall costs than competitors. This requires the firm to: be better than rivals on efficiency and cost control and continuously seek creative and innovative ways of cutting costs. Successful low cost producers achieve cost advantages by exhaustively pursuing cost savings throughout the activity cost chain. A cost leadership strategy is designed to produce goods or services more cheaply than competitors by stressing efficient scale of operation. When a firm designs, produces, and sells a comparable product more efficiently than its competitors as well as its market scope is industry-wide, it means that the firm is carrying out the cost leadership strategy successfully (Brooks, 1993).

Market Focus

The focuser's basis for competitive advantage is either lower costs than competitors serving that market segment or an ability to offer niche members something different from competitors. Focusing is based on selecting a market niche where buyers have distinctive preferences. The niche is defined by geographical uniqueness, specialized requirements in using the product or by special attributes that appeal to members, (Stone, 1995). A focus strategy based on low cost depends on there being a buyer segment whose needs are less costly to satisfy than the rest of the market. On the other hand, a focus strategy based on differentiation depends on there being a buyer segment that demands unique product attributes. In the focus strategy, a firm targets a specific segment of the market (Porter, 1996). The firm can choose to focus on a select customer group, product range, geographical area, or service line (Martin, 1999). For example, some service firms focus solely on the service customers (Stone, 1995). Focus also is based on adopting a narrow competitive scope within an industry.

Focus aims at growing market share through operating in a niche market or in markets either not attractive to, or overlooked by, larger competitors. These niches arise from a number of factors including geography, buyer characteristics, and product specifications or requirements. A successful focus strategy (Porter, 1980) depends upon an industry segment large enough to have good growth potential but not of key importance to other major competitors. Market penetration or market development can be an important focus strategy. Midsize and large firms use focus-based strategies but only in conjunction with differentiation or cost leadership generic strategies. But, focus strategies are most effective when consumers have distinct preferences and when the niche has not been pursued by rival firms (David, 2000).

Differentiation

Differentiation strategies are marketing techniques used by a firm to establish strong identity in a specific market; also called segmentation strategy. Using this strategy, a firm will introduce different varieties of the

same basic product under the same name into a particular product category and thus cover the range of products available in that category. Differentiation strategy can also be defined as positioning a brand in such a way as to differentiate it from the competition and establish an image that is unique, (Davidow & Uttal, 1989). Differentiation strategy aims to build up competitive advantage by offering unique products which are characterized by valuable features, such as quality, innovation, and customer service. Differentiation can be based on the product itself, the delivery system, and a broad range of other factors. With these differentiation features, firms provide additional values to customers which will reward them with a premium price.

Differentiation strategy is an approach under which a firm aims to develop and market unique products for different customer segments. Usually employed where a firm has clear competitive advantages, and can sustain an expensive advertising campaign. It is one of three generic marketing strategies that can be adopted by any firm. To maintain this strategy the firm should have: strong research and development skills, strong product engineering skills, strong creativity skills, good cooperation with distribution channels, strong marketing skills, and incentives based largely on subjective measures, be able to communicate the importance of the differentiating product characteristics, stress continuous improvement and innovation and attract highly skilled, creative people, (Baum & Oliver, 1992). Research within service sector (Phillips & Peterson, 2001) concludes that product differentiation is a common way of differentiating the firm's offerings from those of its competitors. A differentiation strategy calls for the development of a product or service that offers unique attributes that are valued by customers and that customers perceive to be better than or different from the products of the competition. The value added by the uniqueness of the product may allow the firm to charge a premium price for it. The firm hopes that the higher price will more than cover the extra costs incurred in offering the unique product. Because of the product's unique attributes, if suppliers increase their prices the firm may be able to pass along the costs to its customers who cannot find substitute products easily, (Porter, 1985). Firms that succeed in a differentiation strategy often have access to leading scientific research, highly skilled and creative product development team, strong sales team with the ability to successfully communicate the perceived strengths of the product and corporate reputation for quality and innovation, (Baum & Oliver, 1992).

Technological Innovativeness and Competitive Advantage

Companies experiencing a product based margin on their rivals have been revealed to attain relatively better performance. Morgan, Kaleka and Katsikeas (2004) measured product competency in terms of higher product quality, packaging, design and style. Similarly research illustrated that there is a significant association of services based advantage on the organizational consequences. Companies gained benefits from services as competitive edge contrast to their rivals. For example more product elasticity, convenience, delivery speed, consistency and technological support have verified to achieve relatively better performance. BurgeSmani *et al* (2012), further points out that introduction of service and process technological innovations involves a series of scientific, technological, organizational, financial and commercial activities. Technological innovation process consists of four broad stages of problem recognition or idea generation, technology Selection, solution development and implementation (Narayanan, 2007). Technological innovation not only serves as an important competitive tool but also plays an important role in improving the firm's performance (Tidd, 2009) and may involve the use of radically new technologies, a combination of pre-existing technologies or new knowledge. Kungu (2014) carried out a study on an assessment of the effectiveness of the competitive strategies by commercial banks: A case of Equity Bank". Based on the findings of his study, commercial banks in Kenya apply different strategies to be competitive. These include providing products and services at lowest cost, differentiation of products and focusing on certain market segment. Secondly, the study determined that there are two sources of competitive forces which were mainly external and included fights for market share and quality customer services.

From the foregoing discussion, the study thus hypothesized that:

- H₀₇:** There is no significant relationship between technological innovativeness and cost leadership of Deposit Money Banks in Port Harcourt.
- H₀₈:** There is no significant relationship between technological innovativeness and market focus of Deposit Money Banks in Port Harcourt.
- H₀₉:** There is no significant relationship between technological innovativeness and differentiation of Deposit Money Banks in Port Harcourt.

III. METHODOLOGY

The study adopted a cross-sectional survey. Primary data was generated through self-administered questionnaire. The population of the study was 223 employees of eighteen (18) selected banks in Port Harcourt. The sample size of 143 was determined using the Taro Yamane's formula for sample size determination. After data cleaning, only data of 120 respondents were finally used for data analysis. The reliability of the instrument was achieved using the Cronbach's Alpha Coefficient. The hypotheses were tested using the Spearman Rank order Correlation with the aid of the Statistical Package for the Social Sciences version 23.0.

IV. DATA ANALYSIS AND RESULTS

Test of Hypotheses

Table 1 Correlations Matrix between Technological Innovativeness and Competitive Advantage

			Technological Innovativeness	Cost Leadership	Market Leadership	Differentiation
Spearman's rho	Technological Innovativeness	Correlation Coefficient	1.000	.670**	.888**	.388
		Sig. (2-tailed)	.	.000	.000	.280
		N	120	120	120	120
	Cost Leadership	Correlation Coefficient	.670**	1.000	.785**	.380**
		Sig. (2-tailed)	.000	.	.000	.000
		N	120	120	120	120
	Market Leadership	Correlation Coefficient	.888**	.785**	1.000	.187*
		Sig. (2-tailed)	.000	.000	.	.021
		N	120	120	120	120
	Differentiation	Correlation Coefficient	.388	.380**	.187*	1.000
		Sig. (2-tailed)	.280	.000	.021	.
		N	120	120	120	120

** . Correlation is significant at the 0.01 level (2-tailed).

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

Source: Research Data 2019 and SPSS output version 23.0

Table 1 illustrates the test for the two previously postulated bivariate hypothetical statements. The results show that for:

H₀₁: There is no significant relationship between technological innovativeness and cost leadership of Deposit Money Banks in Port Harcourt.

The correlation coefficient (r) shows that there is a significant and positive relationship between technological innovativeness and cost leadership. The *rho* value 0.670 indicates this relationship and it is significant at $p < 0.000 < 0.05$. The correlation coefficient represents a strong correlation between the variables. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between technological innovativeness and cost leadership of Deposit Money Banks in Port Harcourt.

H₀₂: There is no significant relationship between technological innovativeness and market focus of Deposit Money Banks in Port Harcourt.

The correlation coefficient (r) shows that there is a significant and positive relationship between technological innovativeness and market focus. The *rho* value 0.888 indicates this relationship and it is significant at $p < 0.000 < 0.05$. The correlation coefficient represents a very strong correlation between the variables. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between technological innovativeness and market focus of Deposit Money Banks in Port Harcourt.

H₀₃: There is no significant relationship between technological innovativeness and differentiation of Deposit Money Banks in Port Harcourt.

The correlation coefficient (r) shows that there is a significant and positive relationship between technological innovativeness and differentiation. The *rho* value 0.388 indicates this relationship and it is significant at $p < 0.000 < 0.05$. The correlation coefficient represents a low correlation between the variables. Therefore, based on

empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between technological innovativeness and differentiation of Deposit Money Banks in Port Harcourt.

IV. DISCUSSION OF FINDINGS

The study examined the relationship between technological innovativeness and competitive advantage of Deposit Money Banks in Port Harcourt. The study findings revealed a significant relationship between technology innovations and competitive advantage in the sample of Deposit Money Banks in Port Harcourt. This finding is in line with the views of Subramanian & Nilakanta (1996) who posited that technological innovation became one of the most important factors of all the different sizes of the organizations are concerned. So, in order for the organization stay in the market place they have to adopt the rapid change of the technologies. Technological innovation by definition means, the adoption of new ideas which appropriate to the new product or service, and introduction of new element to organization's production process or service operation. The study findings also agrees with BurgeSmani, Christensen and Wheelwright (2012) who pointed out that introduction of service and process technological innovations involves a series of scientific, technological, organizational, financial and commercial activities. Technological innovation process consists of four broad stages of problem recognition or idea generation, technology Selection, solution development and implementation (Narayanan, 2007). Technological innovation not only serves as an important competitive tool but also plays an important role in improving the firm's performance (Tidd, 2009) and may involve the use of radically new technologies, a combination of pre-existing technologies or new knowledge.

In order to avoid obsolesce and promote innovation, a firm must be aware of technological changes that might influence its industry. Creative technological innovations can suggest possibilities for new products, for improvements in manufacturing or marketing techniques. (Pearce, 2005), argue that a company can use innovation create a competitive advantage by creating barriers that deter entry of rivals, introducing novel products or technology processes that attract new customers, or changing the rules of competition in the industry and that high performing firms match investments in technology with strong managerial and technical skills (Meeta, 2009). Salge (2012) explains that innovation in an organization context may be linked to positive changes in efficiency, productivity, quality, competitiveness, and market share. However, recent research findings highlight the complementary role of organizational culture in enabling organizations to translate innovative activity into tangible performance improvements.

V. CONCLUSION AND RECOMMENDATION

This study examined the relationship between technological innovativeness and competitive advantage of Deposit Money Banks in Port Harcourt. From the data generated and analyzed, it was empirically discovered that a significant relationship between technological innovativeness and competitive advantage of Deposit Money Banks in Port Harcourt. Based on results and the findings of the present study, the study concludes that technology innovativeness significantly influences cost leadership, market focus and differentiation of Deposit Money Banks in Port Harcourt.

Therefore, the study recommends that Deposit Money Banks should encourage their Information technology department and also in the way develop a program that will gear the IT personnel to innovate way on how to use technology such as apps and program (software) which will make banking much easier for customers.

REFERENCES

- [1]. Ahmed, M. U. Mehmet, M. K. &Pagell, M. (2014). Impact of operational and marketing capabilities on firm performance: evidence from economic growth and downturns. *International Journal of Production Economics*, 154, 59–71
- [2]. Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17 (1), 99-120.
- [3]. Baum, J. A. C., & Oliver, C. 1992. Institutional embeddedness and the dynamics of organizational populations. *American Sociological Review*, 57: 540-549.
- [4]. Becheikh, N., R. Landry, & Amara, N. (2006). Lessons from Innovation Empirical Studies in the Manufacturing Sector: A Systematic Review of the Literature from 1993–2003'. *Technovation*, 26 (5/6), 644–64.
- [5]. Besanko, D., Dranove, D., and Shanley, M. (2000). *Economics of Strategy 2nd Ed.* John Wiley & Sons, New York
- [6]. Brooks, M. R. (1993). International competitiveness: assessing and exploring competitive advantage by ocean container carriers. *Logistics and Transportation Review*, 3(23), 275-293.

- [7]. BurgeSmani, R., Christensen, C. & Wheelwright. (2012). *Strategic Management of Technology and Innovation, 5th edition*, McGraw Hill International.
- [8]. Cerulli, G. (2014). The impact of technological capabilities on invention: an investigation based on country responsiveness scores. *World Development Journal*, 5(9), 147–165.
- [9]. 165.
- [10].
- [11]. Chenhall, R. H. & Langfield-Smith, K. M. (1998b). The relationship between strategic priorities, management techniques and management accounting: An empirical investigation using a systems approach. *Accounting, Organizations and Society*, 23 (3)
- [12]. Coelli, T. J. Rao, S. P. O'Donnell, C. J. & Battese, G. E. (2005). *An Introduction to Efficiency and Productivity Analysis*. New York: Springer.
- [13]. Damanpour, F. & Gopalakrishnan, S. (2001). The dynamics of the adoption of product and process innovations in organizations. *Journal of Management Studies*, 38(1), 45-65.
- [14]. Danneels, E., & Kleinschmidt, E. J. (2001). Product innovativeness from the firm's perspective: Its dimensions and their relation with project selection and performance'. *The Journal of Product Innovation Management*, 18, 357–73.
- [15]. David, F. R. (2000). *Strategic Management: Concepts*. New Jersey: Upper Saddle River, Prentice Hall Inc
- [16]. Davidson, S. (2001). Seizing the competitive advantage. *Community Banker*, 10(8), 32-44.
- [17]. Davidow, W. H. & Uttal, B. (1989) Service Companies: Focus or Falter. *Harvard Business Review*, July-August: 77-85.
- [18]. Dierickx, I. & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Journal of Management Science*, 35, 1504-11.
- [19]. Dobni, C. (2006). The Innovation Blueprint. *Business Horizons*, 49 (3), 329-39.
- [20]. Erkkö, A. H. (1995). Technology in society. Imperial College Business Schools
- [21]. Fernando, G. D. Chang, H. & Tripathy, A. (2015). An empirical study of strategic positioning and production efficiency. *Advances in Operations Research*, 15, 1-11
- [22]. Frances, X., Frei, P., Harker, T. & Larry, W. (2010). Innovation in retail banking. The working paper series is made possible by a generous grant from the Alfred P. Sloan
- [23]. Foundation
- [24].
- [25]. Francisco, P., & Emilitorsa-Ausina, H. (2002). Product mix clubs, divergence and inequality of Spanish banking firms. *Applied Financial Economics Journal*, 12 (1), 56-59.
- [26]. Freeman, C., Soete, L., 2000. *The Economics of Industrial Innovation*. London: Continuum,
- [27]. Hyatt, L. (2001). A simple guide to strategy. *Nursing Homes*, 50(1), 12-13.
- [28]. Ireland, R., Hitt, M., and Sirmon, D. (2003). A model of strategic entrepreneurship: The Construct and its Dimensions. *Journal of Management*, 29 (6), 963-989.
- [29]. Kotha, S. & Orne, D. (1989). Generic manufacturing strategies: A conceptual synthesis *Strategic Management Journal* (1986-1989), 10(3), 211.
- [30]. Kraaijenbrink, J., Spender, J.-C. & Groen, A.J. (2010) The Resource-Based View: A Review and Assessment of Its Critiques. *Journal of Management*, 36, 349-372.
- [31]. Krishnaswamy, K.N., Mathirajan, M. and Bala Subrahmanya, M.H. (2014) Technological innovations and its influence on the growth of auto component SMEs of Bangalore: a case study approach, *Technology in Society*, 38, 18-31.
- [32]. Malburg, C. (2000). Competing on costs. *Industry Week*, 249 (17), 31.
- [33]. Meeta, D. (2009). Technological Innovations and Role of Technology Strategy Towards Development of a Model. Global Conference on Business and Economics.
- [34]. Menguc, B. & Auh, S. (2006). Creating a firm-level dynamic capability through capitalizing on market orientation and innovativeness. *Journal of the Academy of Marketing Science*, 34(3), 63-73.
- [35]. Morgan, Neil A., [Kaleka, Anna](#) and Katsikeas, Constantine S. 2004. Antecedents of export venture performance: A theoretical model and empirical assessment. *Journal of Marketing* 68 (1), pp. 90-108.
- [36]. Narayanan, V.K. (2007). Technology strategy; overview in managing technology and innovation for competitive advantage. *Strategic Management Journal*, 25, 473-485.
- [37]. Pearce, J.A & Robinson, B. (2005). *Strategic Management, Formulation, Implementation and Control, 9th edition*. Chicago, Irwin Inc.
- [38]. Paleo, I. & Wijnberg, N. (2008). Organizational output innovativeness: a theoretical exploration, illustrated by case of a popular music festival. *Creativity and Innovation Management*, 17 (1), 3-13.
- [39]. Pennings, J., & Harianto, F. (1992). The diffusion of technological innovation in the commercial banking industry. *Strategic Management Journal*, 13(1), 29-46.
- [40]. Phillips, J. C. & Peterson, H. C. (2001). Segmenting and differentiation of agri-food niche markets: Examples from the literature. Michigan State University, East Lansing, MI.
- [41].

- [42]. Pinoy, B. (2015). Strategies and Innovations: Jojo Vito Designs Gallery Experience.
- [43]. Porter, M. E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. Free Press, New York.
- [44]. Porter, M. E. (1980). *Competitive strategy*. The Free Press,
- [45]. Prahalad, C.K. & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68(3), 82
- [46]. Raduan, C .R., Jegak, U., Haslinda, A. and Alimin, I. I. (2009). A conceptual framework of the relationship between organizational resources, capabilities, systems, competitive advantage and performance. *Journal of International Studies - Issue 12*
- [47]. Saloner, G., Shepard, A. & Podolny, J. (2001). *Strategic Management*. John Wiley & Sons, New York
- Salge, T. (2012). Benefiting from public sector innovation: The moderating role of customer and learning orientation. *Public Administration Review*, 72(4), 550-560.
- [48]. Siep, S.M (2010). Organizational strategies and expected employee work behavior.
- [49]. Unpublished MA Thesis. University of Twente.
- [50]. Sigauw, J., Simpson, P., & Enz, C. (2006). Conceptualizing innovation orientation: A Framework for Study and Integration of Innovation Research. *Product Development and Management Association*, 23, 556-74.
- [51]. Stalk, G., Evans, P. & Shulman, L. (1992). Competing on capabilities: The new rules of corporate strategy. *Harvard Business Review*, 70(2), 57-69
- [52]. Stone, M. (1995). Strategic development related to Europeanization of UK logistics and distribution service suppliers. *European Business Review*, 95(5), 9-14. <https://doi.org/10.1108/09555349510147444>
- [53]. Subramanian, A. & Nilakanta. S. (1996). Organizational innovativeness: Exploring the relationship between organizational determinants of innovation, types of innovations, and measures of organizational performance. *International Journal of Management Science*, 24(6), 631-647.
- [54]. Tidd, J. (2009). *Managing Innovation, Integrating Technological Market and Organizational Change, 4th edition*. England: John Miley & Sons Ltd.
- [55]. Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5 (2), 171-80.