INNOVATION AND ORGANIZATIONAL RESILIENCE: A STUDY OF SELECTED FOOD AND BEVERAGE FIRMS IN PORT HARCOURT

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Abstract

This study investigated the influence of Innovation on organizational resilience in the food and beverage industry. The cross sectional survey design was adopted. Data were obtained from 108 managers from a population of 385 management staff of the 7 selected beverage firms in Port Harcourt. The instrument adopted for data collection was the questionnaire. A total of 78 questionnaires were retrieved and also analysed. The Spearman's Rank correlation coefficient tool was used to test the hypotheses. Findings revealed that product innovation is significantly related to adaptability and vulnerability. Based on these findings we concluded that organizational innovation has significant influence on resilience. Product innovation promotes adaptability and makes an organization less vulnerable. We therefore recommend that organizations should create an enabling environment which encourages employee creativity and innovative capacities which will play a key role in building organizational resilience. Organizations should implement policies and processes which would allow for informed changes to structure, work processes and operations which in turn would be beneficial to the organization.

Introduction

In modern times where uncertainty is the order of the day, organizations that are proactive and innovative and takes the right decision could be the organization that survives in this dynamic and ever changing business environment (Awa and Kalu, 2012). Resilience is now a much-needed element in the repertoire of any business about changing environmental factors.

In the past two decades, attention of business managers and scholars have continued to shift towards the importance of innovation in building organizational resilience. Innovation is one of the instruments that leverages a firm upon entering new and existing market, and provide the company with a competitive edge. Innovation opens new ground and opportunities in both local and international market by offering new products and ideas to both local and foreign markets. As businesses operate over a period of time, it faces different kinds of challenges in the environment; some of these challenges could lead to business failure, especially when the firm is not resilient.

Plessis, (2007) opines that innovation is a formation of new knowledge that helps the new business gain returns, with the main aim of making the organizations internal business process and structure more sophisticated so as to produce market acceptable products and services. Innovation creates value for businesses (Akram et al, 2011) considering the degree of change in customer tastes and desires, and the degree of dynamism in the business environment. The survival of an organization could to a great deal depend on how well they can bounce back from business setbacks and challenges.

In some cases people use innovation and creativity inter-changeably without highlighting the difference between the two, innovation however involves creativity (Amabile et al, 1996) but at the same time it takes a lot more than creativity to bring about organizational innovation. Scholars (Plessis, 2007; Nielson 2006; Allen, 1977, Bressman & Dirkinshaw, 1999; Awa & Kalu, 2012; Eze et al, 2013) approach innovation differently. Innovation is viewed by some profession as the introduction of a new good, to others it is the introduction of new methods of production while some consider it as creation or opening of new markets.

In today's highly competitive and sensitive business environment, with the consistent and persistent change in customer taste and desires, and with firms struggling to remain relevant in the industry, ideas are no longer centered on cost reduction and mass production with companies paying more attention to customer needs. Innovation has become a vital instrument for top firms to build competitive advantage above those that are less innovative. Current research (Awa & Kalu, 2012; Eze et al, 2013) has shown that companies that are usually market leaders are companies who have innovative competencies and uses such competencies to satisfy variety of customer with different needs, thereby making it difficult for customers to switch brands of customers switching brands, while attracting competitor's brands. Firms cannot survive through cost reduction and re-engineering alone. Innovation is a key factor in organizational resilience (Davila et al, 2006). Organizations have identified the numerous advantages presented by innovation and have sought to explore it in every possible way, either to improve quality or create new market or sometimes in attempt to reduce labour cost.

The term innovation in many cases refer to both radical and incremental changes in thinking, in things, in process or in service (Mckeown, 2008).

Radical innovation - is a product, service and process with entirely new and unique improvement in its existing features which in turn improves the value and cost of

performance (Leifer et al, 2007; Akram et al, 2011). Radical innovation presents greater risks to firms that go into them as it is associated with lots of uncertainty, and are more difficult to commercialize (Akram et al, 2011). Radical innovation involves a complete system overhaul, plants and machineries used in previous business may be less relevant to current business.

Incremental innovation – basically refers to a modification on existing product or service usually to attract a slightly different target market in the industry (Akar, 2001; Akar & Keller, 1990). Incremental innovation most times is likened to as line extension; it does not need to significantly diversify from current business (Akram et al, 2011). This type of innovation builds the skills and competencies of the employees in an organization and helps the organization increase its market share and remain relevant in the industry (Banbury & Mitchell, 1995).

Statement of the problem

Resilience is a crucial characteristic in this unpredictable business environment. Trees can only survive storms if they can bend in the wind Feather, (2011). We have seen time and again that the most successful businesses are resilient enough to bounce back from any crisis. Many organizations have failed to recognize the importance of building and putting in place resilient plans and machineries that will help companies and organizations recover from unforeseen changes.

In the early 2000, Nigeria witnessed the emergence of many food and beverage firms especially in the fast food and restaurants. This led to high level of market competition and organizations struggled to retain market share by these organizations. Health challenges became another problem the people had to deal as many people were being discouraged from patronizing some of these foods and beverage outlets. The outcome of this is that many of these firms could not see the light of the day 10 years down the line. It was on the backdrop of this that study seeks to find out how organizations can survive these challenges and remain strong in business.

Aims and Objectives

The main aim of this study is to establish the relationship between innovation and organizational resilience.

The specific objectives include:

1. To establish the relationship between product innovation and adaptability.
2. To establish the relationship between product innovation and vulnerability.

Research Questions

In our bid to elucidate more on the importance of innovation in building organizational resilience we ask the following research questions.

1. To what extent does innovation help an organization to be more resilient?
2. To what extent does product innovation bring about adaptability?
3. To what extent does product innovation make a firm less vulnerable?

Research Hypotheses

$H0_1$. There is no significant relationship between product innovation and adaptability.

$H0_2$. There is no significant relationship between product innovation and vulnerability.

Literature Review

Innovation

Baumol, (2004) emphasizes that despite the importance of innovation for the development of organizations and sectors, the scientific literature has found it difficult to trace the development of a theoretical point of view, especially when dealing with organizational innovations.

"Innovation is generally understood as the successful introduction of a new thing or method… innovation is the embodiment, combination, or synthesis of knowledge in original, relevant, valued new products, processes, or service" (Luecke and Katz, 2003:4).

In some cases people inter-use innovation and creativity without knowing the big difference between the two; innovation however involves creativity (Amabile et al, 1996) but at the same time it takes a lot more than creativity to bring about organizational innovation. Scholars In every field of study today, approach innovation differently. Innovation is viewed by some profession as the introduction of new goods, to others it is the introduction of a new method of production while some consider it as creation or opening of new markets.

In today's highly competitive and sensitive business environment, with the consistent and persistent change in customer taste and desires, and with firms struggling to remain in relevant positions in the industry, ideas are no longer centred on cost reduction and mass production with companies paying more attention to customer needs. Innovation has come in handy for top firms to build competitive advantage than those that are less innovative. Current research has shown that companies that are usually market leaders are companies who have innovative competencies and uses such competencies to satisfy variety of customer with different needs, thereby eliminating the opportunity of customers switching brands but still attracting competitor's brands. Companies cannot grow through cost reduction and reengineering alone… innovation is the key element in providing aggressive top-line growth, and for increasing bottom – line results (Davila et al, 2006). Organizations have identified the numerous advantages presented by innovation and have sought to explore it in every possible way, either to improve quality or create new market or sometimes in attempt to reduce labour cost.

Product Innovation

Innovation is considered as a very important factor for the survival and development of the competitive strength of any organization. Firms need to come to terms with the threats of constantly increasing global competition. This brings about a high volume of innovative products developed by organizations flooding the market. The development of new product for industrial firms is pillar upon which growth is built. The competitive advantage or position a firm build is to a great extent determined by the ability to innovate its product and the time required to bring new products to the public domain. Firms are constantly introducing new and more sophisticated products in rapid and fast cycles but their ability to pull off full scale production volume is crucial for success (Pisano, 1997). Product life cycles are getting shorter and this is pressuring many firms into expansion of production capacity in a quicker sequence to generate sales revenue.

For industrial companies, innovations of the product systems and mainly innovations of the related processes are critical. Based on technological factors, there is a tight relationship between technical products and the processes built to generate these products. In developing innovative strategies, consideration must be given to underlying product-process interactions (Utterback, Abernathy 1975; Hayes, Wheelwright 1979 a, 1979 b; Kim et al. 1992). Prior to the introduction of new products, changes in the process requirements must also be considered. "The tightness of the relationship between product and process features varies with the industrial sector. In the process industries like chemicals, pharmaceuticals, and biotechnology, a close relationship between products and production process can be noticed" (Pisano, 1997:13).

Organizational Resilience

Resilience is the organization's capability to predict major future events from gradually unfolding trends, constantly adapting to change, and rapidly bouncing back from disaster. The business environment is quickly becoming more connected, unpredictable and very volatile and the impacts of external events are more substantial. Late or inappropriate response will put the organization at a risk of being left behind.

The concept of resilience gained considerable attention in the last three decades as organizations strive to face constant changes in the environment, where the focus was upon the ability of systems to cope with changes in the environment (Petak, 2002). In the mid-1980s, resilience was mainly used to refer to human environmental interactions, exhibited in discussions of organizational sustainability (Lélé, 1998) and in the late 1970s/early 1980s it manifested in behavioural studies where it depicted an individual's capacity to withstand and rebound from crisis (Walsh, 1996). Resilience was first used to refer to organizations by (Wildavsky, 1988). However, it took till the late 1990s before scholars started the application of resilience to organizations and the study started gaining popularity (Umoh, Amah and Nwokocha, 2014). Since then, there has been scholarly works with respect to other phenomenon; for example, resilience in the face of earthquakes (Petak, 2002). There have also been specific case studies, for instance, relating to Hurricane Katrina and the capacity of New Orleans to recover (Campanella, 2006). We have also had a broader discussion of resilience in relation to other field of studies such as healthcare systems (Mallak,1998), business supply chains (Christopher and Peck,2004), information systems (Comfort *et al*. 2001) and resilience engineering (Hollnagel *et al*. 2006; Woods and Wreathall, 2003). In his classic work "Searching for Safety" (Wildavsky,1988) called for caution in the use of anticipatory strategies and use of rule of thum in building resilience strategies. He is of the opinion that anticipation could bring about a great deal of wasted effort and resources orchestrated by hypothesized risks, which are mainly exaggerated or are false predictions.

Adaptability

In trying to build 'bounce-back' capabilities, managers should build and develop the organization's absorptive capacity, by facilitating environmental scanning in search of valuable external information which would be easily assimilated and exploited. Walker et al.,(2002:3) define adaptive capacity as "an aspect of resilience that reflects learning, flexibility to experiment and adopt novel solutions, and the development of generalized responses to broad classes of challenges". Folke et al., (2003) as quoted in Umoh et al, (2014) identified four dimensions of adaptive capacity:

1. Learning to live with uncertainty

2. Nurturing diversity for reorganization and renewal
3. Combining different types of knowledge for learning
4. Creating opportunities for self-organization

Armitage, (2005) adapts Folke et al.'s (2003) four dimensions for socio-institutions. In a socio-institution context, adaptive capacity will depend mainly on the attributes of individuals, and organizations that could encourage learning when challenged with change and uncertainty, such as willingness to learn from mistakes and make better future decision.

Adaptive capacity may be defined as the ability or inclination of individual or group to maintain an experimental attitude towards new situations as they occur and to act in terms of changing circumstances (McManus 2007:9). The ability of an organization to adapt characterizes their ability to display resilient characteristics. Amah and Baridam (2012) discussed the relevance of adaptation and concluded that the goal is to gain advantage over less adaptive competitors. This suggests that adaptive capacity is also linked to competitiveness.

Vulnerability

Organizations in this study do have ongoing risk identification processes and have engaged in some emergency and recovery planning. "These are typically the larger organizations in terms of employee numbers and often have the backing or driving force of a parent company, or even other organizations within the industry (Lengnick-Hall & Beck, 2003:12). Most times when the process of planning is directed by (but not performed by) the parent company it is considered to only has partial relevance to the organization at a local level. Vulnerabilities depict the identification coupled with proactive management, and treatment of vulnerabilities that if realized, could threaten the ability of the organization to survive. "This includes emergency and disaster management, and business continuity, and covers many of the traditional crisis planning activities. It focuses on organization participation in planning activities including risk management, business continuity and emergency management planning. It is also the way an organization has been involved in external emergency exercises or created exercises internally for staff and stakeholders" (McManus, 2007:11).

Relationship between Innovation and Organizational Resilience

Reasonable effort has been made in an attempt to explain firm's resilience and industry change (see Agarwal and Gort 2002; Klepper and Simons 1997; Klepper and Thompson 2006). Innovation however features prominently in the case studies of industry change and growth from one stage to another, the analysis of the issue has mainly failed to account for the complex nature of the innovation process. Many studies particularly did not account for the fact that while some innovations succeed, a good number of them failed. Innovation in essence increases the likelihood of exceptional performance as well as death. In this work, we attempt to disentangle these two effects.

The major line of argument or approach adopted in most work of firm's resilience is the argument that innovation is the essence or the main reason for firm's survival because in most cases only those firms that can successfully innovate are able to build and sustain a competitive advantage in the market (Wagner 1999). There is however an element of truth in this argument, but it is faulted because it only tells one side of the story since it doesn't

present the argument or fact that innovation, especially those that are new-to-the-world, are subject to uncertainty.

Methodology

The cross sectional survey which is a form of the quasi experimental research design was adopted for this study. The population consists of 385 management staff in the selected beverage companies in Port Harcourt. The procedure involved a determination of relevant beverage companies (food and soft drink) obtained from the National Agency for Food and Drug Administration and control (NAFDAC). The search revealed a total of 18 companies and 7 of them were sampled. We arrived at a sample size of 108 using the Taro Yameni formula which is given as:

$$n = \frac{N}{I + N(e)^2}$$

Where n is given as sample size; N= population; level of precision.

The simple random sampling method was used in selecting the respondents mainly because of the homogeneous nature of the industry under investigation (food and beverage).

The questionnaire instrument adopted in this study is structured into two sections, A and B. section A captures the demographic details of the respondent while section B seeks to gathers data about the criterion variable and the predictor variable. Innovation being the predictor variable is measured on a 7 point item while organizational Resilience being the criterion variable measured with adaptability and vulnerability has 4 items measuring each giving us 8 items on the instrument. The instruments where scaled on a 5 – item Likert scale ranked from (1) strongly agree (2) disagree (3) undecided (4) agree (5) strongly agree (Okpu and Kpakol, 2015).

Validity and Reliability Test

Questionnaire used in this work was subjected to face and content validity to ensure that the instrument could do what it is expected to do in this study. The questionnaire was validated by the researcher's superior. Two experts in the field were also consulted. The researcher carried out a pilot testing using 10 workers of Pabod breweries in testing the reliability of the instrument. The responses they gave masterminded some modification in the questionnaire contents before it was administered to respondents. The reliability was tested through the "Test Retest Reliability" method. The test showed a good relationship with a coefficient reliability of 0.8.

Table 4.1 showing the outcome of distributed questionnaires

Number of Questionnaire Distributed	108	100%
Number of Questionnaire Retrieved	83	77%
Number of Usable Questionnaire	78	72%

Source: SPSS Output

Table 4.1 below is used to illustrate the questionnaire distribution and retrieval process. It also illustrates the number of questionnaires which were considered useful and included in the study as a result of the cleaning process which entailed; the identification of blank questionnaires, bad entries, high incidence of missing values and omissions and error in item checks. Hence, Out of a total of 108 distributed questionnaires, 78 were considered useful and included in the study as shown in table 4.1

Demographic Analysis

Here, the outputs of our demographic data analysis are presented. The presentations would help us in understanding the nature of the demographic distribution of our sample population.

Table 4.2 showing the gender distribution of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	47	60.3	60.3	60.3
	Female	31	39.7	39.7	100.0
	Total	78	100.0	100.0	

Source: Research data, 2014



Fig 4.2 showing the pie chart for marital status

Table 4.3 and fig 4.2 clearly show the marital status of respondents with a greater percentage of respondents falling into the married category (50%) followed by those who are still single (41%). The least comprises of respondents in the separated category (9%).

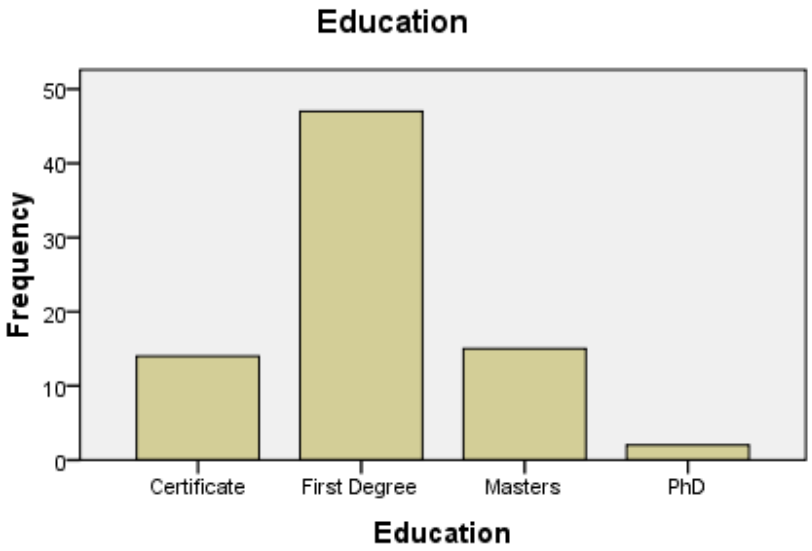


Fig 4.4 showing the pie chart for Qualification attained

Table 4.5 and fig.4.4 shows the educational qualification of our respondents. The chart shows that a good number of our respondents possess First degrees (60%), this is followed by those with other master degrees (19%), then those with professional Certificate qualifications (18%) and finally those who have obtained a PhD (3%).

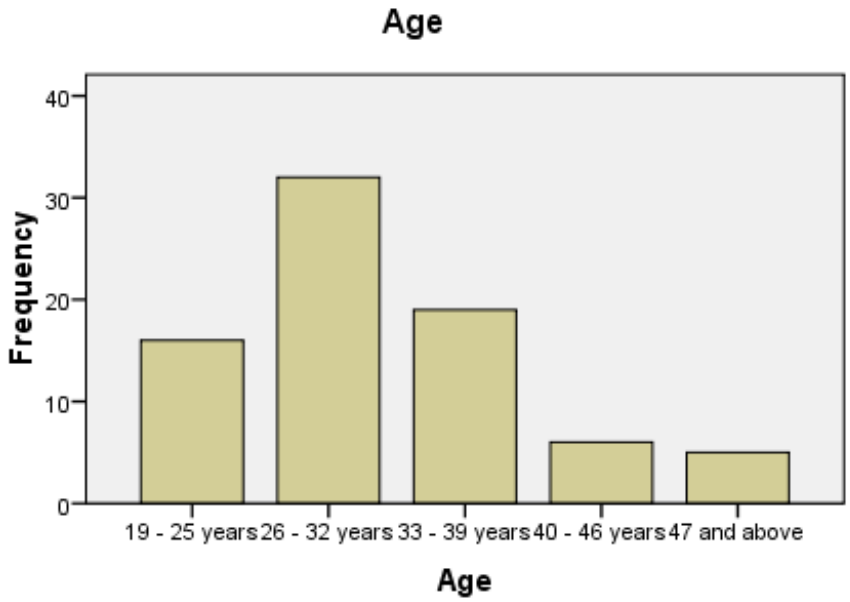


Table 4.4 and fig 4.3 illustrate that more of the respondents fall between the (26 - 32) years age bracket, followed by the (33 – 39) years bracket, then the (19 – 25) years age bracket, and the (40 – 46) years bracket, and finally the (47 and above) age bracket.

Univariate Analysis

This section covers the univariate analysis on each variable, their indicators and measures and finally the latent concepts. Analysis here includes the use of frequency tables, mean scores, standard deviation coefficients which are used to assess the normality of data distributions. The study variables include the independent variable (innovation) and its measures; process innovation, product innovation and administrative innovation; the dependent (Organizational resilience) variable and its measures; vulnerability and adaptive capacity, and finally the contextual variable which is organizational culture. Table 4.6 indicates our analysis for output of the criterion variable Innovation. The variable in this study is measured on a 5 point Likert scale where (5) represents strongly agree and (1) representing strongly disagree. The mean scores show a tendency or probability of agreement with very low standard deviation scores.

Table 4.6 showing Statistics for Innovation

	N	Minimum	Maximum	Mean	Std. Deviation
Innovation	78	1.00	5.00	3.9541	.99518
Product	78	1.00	5.00	3.9359	1.11762

Source: Research Data, 2014

Table 4.7 also summarizes the responses to the dependent variable using the average mean scores of its measures. The mean scores indicate agreement levels of responses with the lowest at 3.7249 and with the highest standard deviation score at 1.07613.

Table 4.7 showing the Statistics for organizational Resilience

	N	Minimum	Maximum	Mean	Std. Deviation
Organizational Resilience	78	1.00	5.00	3.9679	1.07613
Vulnerability	78	1.00	5.00	3.9881	.900312
Adaptive				3.7249	.837910
Valid N (listwise)	78				

Source: Research data, 2014

Shown above is the output for the dependent variable which is Organizational growth with mean scores indicating degrees of agreement.

Secondary Data Analysis (hypotheses testing)

For the secondary data analysis, all hypotheses are tested and bivariate relationships examined and a benchmark of 95% confidence interval was adopted at a 0.05 level of significance.

Table 4.10 showing test for hypothesis three

			Vulnerability
Spearman's rho	**Product**	Correlation Coefficient	.701**
		Sig. (2-tailed)	.000
		N	78

Source: Research data, 2014

The tables above shows a positive relationship between product innovation and vulnerability (HO_3) is significant at a probability value of 0.000 and a rho value of 0.701 where ($p<0.05$).

Table 4.11 showing test for hypothesis four

			Adaptive
Spearman's rho	**Product**	Correlation Coefficient	.691**
		Sig. (2-tailed)	.000
		N	78

Source: Research data, 2014

From the table it can be observed that the relationship between product innovation and adaptive capacity (HO_4) is significant at a probability value of 0.000 and a rho value of 0.691 where ($p<0.05$).

Discussion of findings

The findings of our study, shows a relationship between our independent variable which is innovation and the dependent variable which is organizational resilience. The study illustrates the need for management to effectively manage their operations through innovative processes, products and administration in order to achieve a sustainable resilient organization. Thus, to achieve resilience it is important to draw adequately upon the capabilities of the employees and other organizational resources, as well as the innovative use of knowledge, skill, technology and other innovative mechanisms.

Therefore, all previously stated null hypotheses are, based on our findings and analysis, rejected. The output of our data analysis thus finds that:

i. There is a relationship between product innovation and vulnerability. This finding agrees with the work of Weick *et al*, (1999) that product innovation has negative relationship with vulnerability. He discovered that innovative firms in most cases are less vulnerable to changes as they have high adaptive capacity. Damanpour and Gopalakrishnan (2001) discovered a negative relationship between product innovation and vulnerability. He is of the opinion that innovative firms are less

vulnerable and has the ability to withstand the unthinkable by having innovative product the firm can fall back to for survival.

ii. There is a positive relationship between product innovation and adaptive capacity. Our findings also agree with the work of Weick et al, (1999) that product innovation has a significant and positive relationship with adaptive capacity. Damanpour and Gopalakrishnan (2001) also went further to state that product innovation has the ability to build an internal shock absorber for a firm by making sure the firm can adapt to changes without major damage. Cordier et al (2008) also support the findings of Damanpour and Gopalakrishnan (2001) by discovering a significant relationship between product innovation and adaptive capacity of a firm.

Conclusions

The intent of the empirical endeavour was to investigate the relationship between innovation and organizational resilience. The findings from our analysis support a correlation between both variables as the dimension of innovation (product innovation) strongly and significantly associate with resilient an organization can be, and it is on the backdrop of these findings that we therefore conclude that innovative activities should be encouraged in order to enhance the resilient stance and capacities of the organization.

Recommendations

In view of the research and the importance of innovation in achieving organizational resilience, the following recommendations are important:

- Organizations through institutionalized policies can effectively manage their innovative tendencies and activities.
- Organizations should create an enabling environment which encourages employee creativity and innovative capacities.
- The organizational atmosphere should be structured by management in such a way that appreciates and recognizes employee efforts and contributions to the organization.
- Organizations should ensure modification and improvement on their products from time to time.

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