FRUGAL INNOVATION AND BUSINESS SUCCESS OF FOOD AND BEVERAGE FIRMS IN SOUTH-SOUTH NIGERIA

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ABSTRACT: *This study examined frugal innovation and business success of food and beverage firms in South-South Nigeria. The study employed the correlational research design. The population of this study consisted of all the 82 registered food and beverage firms in South-South Nigeria. The unit of analysis was made up of managers of the selected food and beverage firms in South-South Nigeria. The sample size was determined using the Taro Yamene's formula. A structured questionnaire was used to elicit data from the respondents. The data collected were analyzed statistically while the Pearson Product Moment Correlation Coefficient (PPMCC) was used to test the formulated hypotheses. The SPSS software program version 24 was used to correlate the data collected on the study variables. The findings revealed that value innovation has a significant relationship with business success (sales growth and profitability growth) of food and beverage firms in South-South Nigeria. This study also reported that cost cutting advancement has significant positive with business success (sales growth and profitability growth) of food and beverage firms in South-South Nigeria. The study equally revealed that technological innovation has a significant relationship with business success (sales growth and profitability growth) of food and beverage firms in South-South Nigeria. Based on these findings, it was concluded that frugal innovation is a significant predictor of business success of food and beverage firms in South-South Nigeria. Based on the findings and conclusion, it was recommended that food and beverage firms in South-South Nigeria should practice frugal innovation as it would enhance business success of food and beverage firms in South-South Nigeria.*

KEYWORDS: Frugal innovation, value innovation, cutting edge advancement, technological innovation, business success, sales growth and profitability growth.

INTRODUCTION

In any sector where there is intense competition, there is always a strong determination among the competing firms to achieve business success. The food and beverage sector is one of the sectors in Nigeria that is very competitive due to the large number of food and beverage firms across the country. The competition in this sector is very intensive to the extent that every firm is strategizing to achieve business success. Achieving business success involves accomplishing the business goals and objectives (Foley & Green, 2009). Some business and marketing strategists have come up with different strategies to achieve business success in emerging markets. Considering the fact that Nigeria is an emerging market with high population of middle and low-income earners, food and beverage firms need to provide these segments of market with a certain kind of innovation and business model that create high value at low cost. There is better way of doing this than to develop the capabilities of implementing frugal innovation. Many business and marketing strategists like Clayton Christensen, Micheal Porter, Gary Hamel, Henry Mintzberg etc believe that business success can be achieved in emerging markets if firms develop the capabilities to successfully implement frugal innovation.

Frugal innovation is the process of reducing complexity and costs during the design and development of smart solutions (products/services) to meet the needs of low-income customers and generate institutional change in the societies (Zeschky et al, 2014 in Fischer et al, 2021). The German Center for Frugal Innovation in Imhof and Mahr (2017) defines frugal innovation as an innovation that seeks to minimize the use of material and financial resources in the complete value chain with the objective of substantially reducing the cost of usage and/or ownership of a product while fulfilling or even exceeding pre-defined criteria of acceptable quality standards. This approach to innovation enables firms to sell their products at a relatively lower retail prices while at the same time serving the needs of the impoverished market segment.

Frugal innovation is embarked upon by firms as a way of responding to severe resource constraints with products having extreme cost advantages compared to existing solutions (Zeschky et al 2011 in Grover et al, 2014). Frugal products are developed under conditions of resource constraints and that these products are technologically less advanced compared to their sophisticated counterparts but are good enough to provide their core functionality (Agnihotri, 2015). This does not mean that frugal products are low quality products rather they provide the best possible solution for a given situation and constraint (Harris et al, 2020). Radjou and Prabhu (2015) noted that frugal products are of high value, affordable and developed with minimal amounts of raw materials to meet the needs of customers with low purchasing power.

Frugal innovation brings about all-inclusive markets where the vulnerable populations are served, low earning workforce and local entrepreneurs are empowered, new supply chains are developed, resources are efficiently utilized and social inequalities are reduced (Kahle et al, 2013). It seeks to create valuable offerings for targeted customers by focusing on core functionalities, thus minimizing the use of material and financial resources while fulfilling or even exceeding prescribed quality standards (Tiwari & Herstatt, 2014 in Shivdas et al, 2021). Pisoni et al (2018) stated that frugal approaches to innovation are gained towards overcoming the difficulties and

challenges associated with resource constraints and other adversities related to poverty, environmental threats and institutional voids.

A firm's capability to implement frugal innovation in emerging markets is critical to business success. Shivdas et al (2011) stated that a firm that is planning to embark on frugal innovation must develop capability to successfully implement the concept. By developing capabilities, firms must be able to explore new concept and generate marketable and scalable low-cost acceptable quality products/services solution in a resource-constrained environment by applying combinations of available resources to respond to market opportunities (Shivdas et al, 2011). To get frugal innovation right, firms must revisit their drawing board, establish an organizational culture and management system that reduce costs and create affordable value. When firms demonstrate capabilities to deliver frugal innovation, they are likely to achieve business success in emerging market like Nigeria. It is against this backdrop that this study examines the relationship between frugal innovation capabilities and business success of food and beverage firms in South-South Nigeria.

Statement of Problem

Achieving business success has been a challenging task for many firms in the food and beverage industry in Nigeria. Many food and beverage firms in Nigeria are struggling to achieve business success. These firms have made several efforts including the adoption of innovation strategies aimed at achieving business success in such areas as sales and profitability. Despite the innovation strategies adopted by these firms, their sales volume and profit margin are still low when compared to their counterparts in other emerging markets. The reason for this is that most of these firms innovate in an expensive way which brings about high costs for the firms. The high cost involved and high demand in terms of management efforts and time have resulted in the sale of their products at high retail prices which are unaffordable by the middle- and low-income earners.." With their capabilities to implement frugal innovation, the middle and low-income segments of the Nigerian market will be served satisfactorily and business success will be achieved. However, empirical studies that relate frugal innovation capabilities to business success within the Nigerian food and beverage sector are absent or limited. Hence, this study attempts to fill the gap in literature by investigating the relationship between frugal innovation and business success in the food and beverage sector in South-South Nigeria.

CONCEPTUAL FRAMEWORK

The conceptual framework of frugal innovation and business success is presented in figure 1 below:
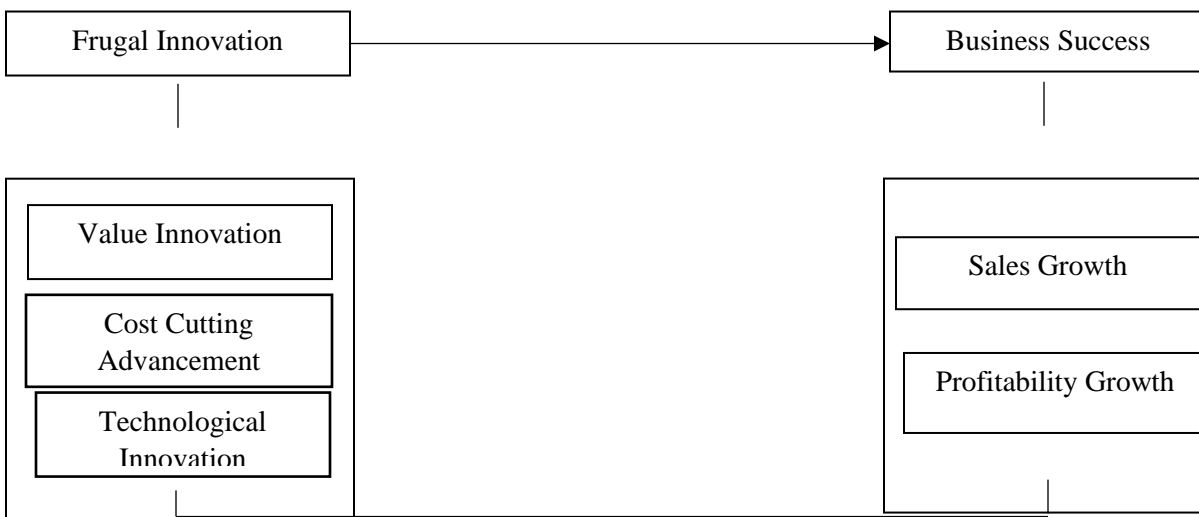

Fig 1: Conceptual framework of frugal innovation and business success of food and beverage firms

Aim and Objectives of the Study

The aim of this study is to examine the relationship between frugal innovation and business success of food and beverage firms in South-South Nigeria. The specific objectives of the study are to:

1.   determine the relationship between value innovation and sales growth of food and beverage firms in South-South Nigeria;

2.   ascertain the relationship between value innovation and profitability growth of food and beverage firms in South-South Nigeria;

3.   find out the relationship between cost cutting advancement and sales growth of food and beverage firms in South-South Nigeria;

4.   determine the relationship between cost cutting advancement and profitability growth of food and beverage firms in South-South Nigeria;

5.   ascertain the relationship between technological innovation and sales growth of food and beverage firms in South-South Nigeria;

6.   explore the relationship between technological innovation and profitability growth of food and beverage firms in South-South Nigeria.

Research Questions

The following research questions were raised in this study:

1.   What relationship exists between value innovation and sales growth of food and beverage firms in South-South Nigeria?

2.   To what extent does value innovation relate to profitability growth of food and beverage firms in South-South Nigeria?

3.   How does cost cutting advancement relate to sales growth of food and beverage firms in South-South Nigeria?

4.   What is the relationship between cost cutting advancement and profitability growth of food and beverage firms in South-South Nigeria?

5.   To what extent does technological innovation relate to sales growth of food and beverage firms in South-South Nigeria?

6.   How does technological innovation relate to profitability growth of food and beverage firms in South-South Nigeria?

Research Hypotheses

The following hypotheses were formulated in this study:

Ho_1: There is no significant relationship between value innovation and sales growth of food and beverage firms in South-South Nigeria.

Ho_2: There is no significant relationship between value innovation and profitability growth of food and beverage firms in South-South Nigeria.

Ho_3: There is no significant relationship between cost cutting advancement and sales growth of food and beverage firms in South-South Nigeria.

Ho_4: There is no significant relationship between cost cutting advancement and profitability growth of food and beverage firms in South-South Nigeria.

Ho_5: There is no significant relationship between technological innovation and sales growth of food and beverage firms in South-South Nigeria.

Ho_6: There is no significant relationship between technological innovation and profitability growth of food and beverage firms in South-South Nigeria.

REVIEW OF RELATED LITERATURE

Concept of Frugal Innovation

Frugal innovation is a resource-scare solution that is designed and implemented in a resource constrained environment where the final solution is less expensive but still good enough to meet the needs of consumers (Hossain et al, 2016). Agarwal et al (2017) defined frugal innovation as a good enough quality products that are designed to meet the needs of resource-constrained customers. Dima et al (2022) described frugal innovation as a process that is characterized by efficiency, redesigning systems or products to become a more affordable and accessible. Generally, frugal innovation is associated with innovative products and services that are offered at affordable prices in an environment that is characterized by resource scarcity. This type of innovation tends to address the needs of the weak in a society by offering products and services that create high value at a low cost (Pisoni et al, 2018). Shivdas et al (2021) further defined frugal innovation capability as the capability of an organization to explore new concepts and generate marketable and scalable low-cost acceptable quality product/service solution in a resource-constrained environment by applying combinations of available resources to respond to market opportunities.

A firm can be said to have a frugal innovation capability if it is able to build, integrate and reconfigure its internal and external resources to develop products and services to meet the needs of the resource constrained customers (Greeven, 2009). Sher and Yang (2005) stated that firms that possessed frugal innovation capabilities successfully integrate their resources strategically to drive frugal innovation and maintain competitive advantage. Frugal products are not only lower in cost price but also perform as good as their high cost alternative (Krishnan & Jha, 2011). These products of high value and affordable to low income consumers. Frugal innovation aims at disrupting existing innovation paradigms by reducing costs on one hand and maintaining high customer value at the other hand (Knorringa et al, 2016). Radjou and Prabhu (2015) posited that frugal products are developed using limited amount of raw materials and local labour to meet the needs of consumers with low purchasing power. When discussing the issue of scare resources, frugal innovation is often cited as an alternative solution to satisfy the needs of low income customers in developing countries. Basu et al (2013) noted that firms that deploy frugal innovation economize the use of scare resources with a view to cut down costs and sell products at affordable prices. This kind of innovation tends to put the needs of the low income customers at the forefront of business strategy by developing appropriate, adaptable, affordable and accessible products and services for this market segment (Basu et al, 2013). Even though such innovations are primarily designed to serve the needs of low income consumers in developing countries, some of these innovations trickle up to developed countries (Zedtwitz et al, 2015 in Palma et al, 2016).

Dimensions of Frugal Innovation

There are several dimensions used to describe frugal innovation practices. However, the dimensions of frugal innovation considered in this study are value innovation, cost cutting advancement and technological innovation.

Value Innovation

Value innovation is the process whereby a company simultaneously pursuit radical innovation and provide superior value for customers at a lower operating cost (Abrahams, 2006). Dikmen et al (2005) defined value innovation as a business strategy focuses on creating relatively new market rather than competing with similar companies for a fair share of the existing market. Value innovation enables a company to escape from the trap of red ocean and adapt to a new and uncontested blue ocean where it can breathe in fresh air and creates a new lease which the industry has never seen before. The strategic logic of value innovation offers a company the opportunity to be free from competition and focus on the new market created. Here, the company liberates itself from the struggles associated with developing competitive strategy (Ehlers & Lazenby, 2010). Value innovation stems from the idea that conventional logic which advocates competitive advantage will not provide organic growth and sustainable profits for businesses in the long run (Pitta, 2005 in Jacobs & Zulu, 2012). The conventional logic implies that if a competitor starts to manoeuvre more belligerently and swiftly, the rest of the competitors in the industry will follow and this strategy is referred to as "red ocean strategy" (Kim & Mauborgne, 2004,(240 &287)). Value innovation turns away from jostling for position in shrinking or declining markets and looks at creating new and uncontested markets known as "blue oceans" (Jacobs & Zulu, 2012 (38)). Companies need to innovate their commercial offers and create a new and uncontested market that will render their competitors irrelevant.

Cost Cutting Advancement

Cost cutting refers to the measures taken by a company to reduce its expenses and increase profitability (Oyerogba et al, 2014). It is a deliberate effort made by a firm to minimize its innovation costs with a view to make its product or service affordable and maximize profit (Wing, 2000). Companies planning to implement frugal innovation strategy must have the capability to cut down costs. Akeem (2017) stated that cost cutting is necessary when implementing frugal innovation because it enables the company to come up with affordable products that will meet the needs of the underserved population. The aim of cost cutting is to see whether there is any possibility in bringing about a saving in cost incurred in implementing innovation (Akeem, 2017). Higher costs result to unaffordable products by the middle and lower income market segments and this leads to low sales and profit (Egbide et al, 2019). When a firm is determined to increase profits, it can either lower its costs of operations or increase sales (Egbide et al, 2019). Lockey (2002) opined that cutting down costs requires a firm to negotiate for lower material costs, reduce the number of labour and other innovative costs and indirect expenses. Since these cost cutting does not reduce sales revenue, profits will continue to increase. Frugal innovation requires the use of less expensive resources so that the firm can be able to cut down costs and create product or service that is affordable to low-income earners (Matei & Savulescu, 2009). However, there are several ways in which a frugal firm can reduce costs. For instance, removing additional features from the products and focusing on its core functions can help firms to reduce costs, ensure affordability and address customers' needs in a functional, simpler and user-friendly way (Palma et al, 2016).

Technological Innovation

Technological innovation is the development of new thoughts, items, administrations and procedures that will improve technology solutions (Fayomi et al, 2019). Schumpeter 1934 in Ndesaulwa and Kikula (2016) defined technological innovation as an economic function through which new technologies are introduced into production and consumption. Technological innovation plays a key role in facilitating radically improved standard of living. It is responsible for the changes in demand and supply. Fayomi et al (2019) stated that technological innovation has provided a better lifestyle by improving the standard of living in the area of production. Ndesaulwa and Kikula (2016) believed that technological innovations facilitates the growth of leading industrial economies. Adepoju et al (2017) noted that companies with frugal innovation orientation have embraced technological innovation as way of improving their performance. Goi (2017) stated that technological innovation is a process that brings about observable and exponential growth in value. The divergence of technological innovative capability in different organization can be understood in terms of financial, human and technical abilities (Shivdas et al, 2021). Li and Zhang (2007) opined that technological innovation creates market opportunities for companies and gain a competitive edge over their rivals. Fayomi et al (2019) posited that new technology can enhance the competence of firms, improve their existing technical know-how and reinforce their incumbents' positions and making them to be technologically superior to their competitors. Ndesaulwa and Kikula (2016) opined that companies that engage in technological innovation do so because they want to gain an edge in industries where multiple competitors produce similar products.

Concept of Business Success

Business success is a concept that has been defined in different ways. This is because business success means different thing to different people. Whether a business is successful or not depends on how the business owner or management team defines success. For small and medium sized entrepreneurs, business success is defined based on whether the business owner has satisfied their reasons for setting up the business (Aqeel et al, 2011). For a public listed company, success is defined as the ability to maximize shareholders' wealth because investors (shareholders) buy shares and stock of the company with the expectation of maximizing their wealth from their investment (Sceulovs et al, 2018). Therefore, maximizing shareholders' wealth is a satisfactory benchmark for defining and measuring business success for many public listed companies. Generally, business success is defined by accomplishing a milestone and goals of a firm. It is a term used by firms to describe how well they have been able to reach their goals. When a firm sets out its business goals and achieve these goals in the midst of challenges and competition, the firm can be said to have achieved business success. In this regards, Riyanti (2010) defined business success as the achievement of business goals and objectives. A successful firm utilizes its assets such as capital, human, material and equipment efficiently to deliver superior products and services that meet customer requirements and needs (Nadai & Garai, 2017). Reeves and Bednar (2006) noted that a successful firm is one that is vibrant, offers products and services that are superior to what its competitors' offers and increase the wealth of its owners and shareholders.

Measures of Business Success

Business success can be measured using various indicators. In this study, business success is measured using sales growth and profitability growth.

Sales Growth

According to Parida et al (2016), sales growth is the increase in the sales made by a company for a given period of time. Sales growth can be measured periodically such as daily, monthly, quarterly or yearly depending on the type and size of the organization. Micro, small and medium sized firms usually evaluate their sales on a daily, weekly, monthly or quarterly basis while large firms evaluate their sales annually (Gaur & Kesavan, 2015). When a company's sales are increasing from year to year, one can say that the company is experiencing consistent sales growth. Lechner et al (2016) stated that sales growth is achieved when a company's sales for the year under review is higher than the sales made in the previous year. Every company irrespective of the industry it belongs wants to achieve sales growth. This is because when the sales of a company grows from year to year, the profit margin of the company will grow in the same direction. Gaur and Kesavan (2015) stated that sales growth does not only increase the net profit of a company but also help to position the company in the minds of prospective investors. Iskandar (2021) noted that investors often consider the sales of a company when making their investment decision. Investors place high priority on company's sales revenue because it shows whether the company is doing well or not.

Profitability Growth

Profit is the difference between revenue generated and the costs of business to generate that revenue (Coban, 2014). Laverty (2001) defined profit is the amount of money earned by a company from its business activities. Kouser et al (2012) defined profitability as the earnings of a company for a given period of time. Profitability growth is the increase in the amount of money earned by a company for a specific period of time (Yadav et al, 2022). Companies generally work towards growing their profit annually. Profitability growth reflects the degree of financial fitness of a company. It shows the financial strength of a company and attract investors to the company. Davidson et al (2009) opined that profitable firms grow from year to year as they often reinvest their earnings to sustain their growth rate. Profitability growth tells how well a company is dong financially against its competitors. Shareholders are always happy when they hear that their company has recorded massive increase in their profit margin. When a company's profit grows from year to year, the management team of the company usually takes the credit as they are described as being competent on the job (Cowling, 2004).

Theoretical Review

This study is anchored on the dynamic capability theory which was developed by Teece and Pisano in 1994. The theory is considered as an extension of the resource-based view of the firm. Dynamic capabilities are the abilities of firms to combine, develop and reconfigure their internal and external expertise to respond quickly to the changing environment (Teece et al, 1997). The dynamic capability theory explains the capability of a firm to respond to environmental complexity and international experience in the field of business (Hsu et al, 2013 in Samsundin & Ismail, 2019).

The theory concerns itself with the development of strategies by senior managers in business organizations to adapt to radical discontinuous change while at the same time maintaining minimum capability standards to ensure the firm's survival (Monteiro et al, 2017). Dynamic capability theory is used to understand the way in which firms solve the problem of inflexibility in capabilities and how they utilize knowledge to respond to a dynamic and fast changing environment (Easterby-Smith & Prieto, 2008).

The dynamic capability theory is relevant in explaining frugal innovation capabilities of business firms and how such capabilities relate to business success. This theory argues that for a firm to be successful in any innovation effort, it must not only possessed the needed resources but also has the capability to implement that innovation activity. Frugal innovation represents a business model that requires dynamic capabilities of a firm to create high value at a low cost. The dynamic capability theory argues that frugal innovation requires a certain set of capabilities on the part of the firm that intends to implement the concept. It believes that a firm must have the dynamic capabilities in order to respond to change in an uncertain environment and deliver quality product or service to the price-sensitive consumers. By capabilities, it mean that the firm must possessed the needed resources, demonstrate competence and expertise in implement the concept (Bound & Thornton, 2012). Thus, dynamic capability theory makes us to understand how firms' capabilities to deploy frugal innovation in an uncertain and resource constrained environment affect their business success.

Empirical Review

Some related empirical studies have been conducted on frugal innovation and business success. For instance, Grover et al (2014) examined frugal innovation in healthcare and its applicability to developing and developed markets. The researchers adopted the case study research approach with a particular focus on Aravind Eye Care and Life Spring Hospitals. Their data were collected from hospitals and other healthcare service providers who adopted frugal innovation in both developing and developed countries. A semi-structured interview was used to elicit data from eight (8) senior personnel from Aravind Eye Care and Life Spring Hospitals in India and Malaysia (developing countries). Interview was also conducted among healthcare practitioners in GE healthcare in USA, UK and Canada (developed countries). The data collected from primary source were analyzed using thematic coding. The findings showed that healthcare service providers in developing markets have been deploying frugal innovation and surviving because of the large number of patients with low income status, resource constraint environment with unstructured regulatory framework and lack of a formal and systematic healthcare system. However, in developed markets, the study reported that inflexible processes, top-down managerial approach and rig regulatory framework limit the potential and capabilities of healthcare organizations to deploy frugal innovation.

Imhof and Mahr (2017) carried out a study to determine the extent of applying frugal innovation to serve the bottom of the pyramid in Germany. The researchers adopted the survey research design and used a semi-structured interview to collect data from senior managers of eight (8) companies that offer frugal products and services in Germany. The data collected were analyzed using grounded theory and coding technique. The findings revealed that frugal products exist in the

German market but the concept has been previously unknown. The study also revealed that the frugal products in German market are not labelled as frugal products to connect them with the concept. Despite the original connection of frugal innovation to emerging market population, this study confirmed that bottom of a pyramid exists in Germany.

Shivdas et al (2021) empirically examined frugal innovation capabilities with a particular focus on their conceptualization and measurement. The study conceptualized frugal innovation capabilities and used value for money, acceptable quality, scalability and marketability as their dimensions of frugal innovation capabilities. The researchers adopted the qualitative and quantitative research methods where data were collected from medical device and automobile sectors in India. The data collected were analyzed using confirmatory analysis. The result of the confirmatory analysis showed that value for money, acceptable quality, scalability and marketability present a gateway to explore frugal innovation capabilities and their applications in business firms.

Ahuja and Chan (2014) explored frugal IT capabilities in achieving sustainable competitive advantage. The researchers adopted the resource based view to analyze the integration of frugal innovation into the traditional IT innovation. Their data were collected from top managers of IT firms that practice frugal IT innovation in China. The researchers used a semi-structured interview as their instrument for data collection. After analyzing the data collected from the respondents, the researchers discovered that frugal innovation gives a firm a competitive advantage over its competitors in the same industry.

Dima et al (2022) explored the relationship between frugal innovation and business sustainability. The researchers conducted a bibliometric analysis to determine how frugal innovation relate to business sustainability. The researchers used the Clarivate's Web of Science (WoS) database for gathering documents for their bibliometric analysis. The data generated covered the period of 1976-2021. The data generated were analyzed using descriptive and performance software tool such as the VOS viewer software. The findings revealed that frugal innovation has a positive relationship with economic sustainability of firms. The study revealed that frugal innovation cuts costs, ensure the accessibility and affordability of products by low-income earners, empower the local people, improve their life quality and develop the economies of emerging markets.

Amadi and Dagogo (2021) carried out a study to determine the relationship between frugal innovation and firm competitiveness in Nigerian automobile industry. Their study adopted the cross-sectional survey research design and used a structured questionnaire to collect data from 288 managers drawn from the automobile industry in Nigeria. The data collected were analyzed statistically while their hypotheses were tested using Pearson Product Moment Correlation Coefficient. The analysis was performed with the aid of the SPSS version 23.0. The findings of the study showed that cost innovation has significant relationship with sales growth, market share growth and profitability growth of automobile companies in Nigeria. The study also revealed that value innovation has a significant relationship with sales growth, market share growth and profitability growth of automobile companies in Nigeria.

Gap in Literature

From the studies reviewed, three (3) major gaps were noted. First, it was observed that scholars and researchers have researched extensively on frugal innovation in both developing and developed countries but not much of these studies were conducted in Nigeria. Secondly, it was observed that none of the previous studies conducted on frugal innovation capabilities relate the concept to business success of food and beverage firms in South-South Nigeria. Thirdly, it was observed that the methods used by previous studies to evaluate the relationship between frugal innovation and business success of firms are very much insignificant to reckon with. Following the vacuum created in literature, this study is motivated to fill the gaps in literature by providing statistical and empirical evidence on the nature of relationship that exists between frugal innovation and business success of food and beverage firms in South-South Nigeria.

METHODOLOGY

The positivist research philosophy and correlational research design were adopted in this study. The population of this study consisted of all the 82 registered food and beverage firms in South-South, Nigeria (www.directory.org.ng). The 82 registered food and beverage firms are spread across the six (6) states in the South-South Geopolitical Zone namely; Akwa Ibom State, Bayelsa State, Cross River State, Delta State Edo State and Rivers State. A sample size of 68 firms were studied. The sample size was determined using the Taro Yamene's formula. The unit of analysis comprised managers of the selected food and beverage firms in South-South Nigeria. The managers include marketing managers, finance managers, information technology managers, procurement managers and R & D managers. A sample of 340 managers of the above categories was drawn from the 68 selected food and beverage firms on the ratio of 5 managers per firm. The instrument used in collecting data from the respondents was a questionnaire which was structured on a four (4) rating scale such as Strongly Agree, Agree, Disagree and Strongly Disagree. The validity of the instrument was determined through face and content analysis while its reliability was confirmed using Cronbach Alpha method. A total of 340 copies of questionnaire was administered to the respondents across the food and beverage firms in South-South Nigeria, and 263 copies were collected. The data collected were analyzed statistically while the hypotheses were tested using Pearson Product Moment Correlation Coefficient (PPMCC). The SPSS 24.0 version was used to perform the correlation analysis.

RESULTS AND DISCUSSION

The data collected on frugal innovation dimensions such as value innovation, cost cutting advancement and technological innovation were correlated with those obtained on business success (sales growth and profitability growth). The SPSS software program version 24 was used to perform the bivariate analysis and the results are presented in the tables below:

Table 1: Result of bivariate analysis between value innovation and sales growth of food and beverage firms

			Value Innovation	Sales Growth
Pearson (r)	Value Innovation	Correlation Coefficient	1.000	.823**
		Sig. (2 tailed)	.	.001
		N	263	263
	Sales Growth	Correlation Coefficient	.823**	1.000
		Sig. (2 tailed)	.001	.
		N	263	263

**Correlation is significant at 0.01 levels (2 tailed)

*Correlation is significant at 0.05 levels (2 tailed)

Source: SPSS-Generated Output, 2024

Table 1 presents the result of the bivariate analysis carried out between value innovation and sales growth of food and beverage firms in South-South Nigeria. The result indicates that value innovation has a very strong positive correlation with sales growth of food and beverage firms in South-South Nigeria (r = .823**) and the symbol ** signifies that this correlation is significant at 0.01 level. Based on this result, the null hypothesis (Ho$_1$) is rejected and the alternate hypothesis is accepted. This means that we then accept that there is significant relationship between value innovation and sales growth of food and beverage firms in South-South Nigeria.

Table 2: Result of bivariate analysis between value innovation and profitability growth of food and beverage firms

			Value Innovation	Profitability Growth
Pearson (r)	Value Innovation	Correlation Coefficient	1.000	.614**
		Sig. (2 tailed)	.	.001
		N	263	263
	Profitability Growth	Correlation Coefficient	.614**	1.000
		Sig. (2 tailed)	.001	.
		N	263	263

**Correlation is significant at 0.01 levels (2 tailed)

*Correlation is significant at 0.05 levels (2 tailed)

Source: *SPSS-Generated Output, 2024*

Table 2 shows the result of the bivariate analysis carried out between value innovation and profitability growth of food and beverage firms in South-South, Nigeria. The result indicates that value innovation has a strong positive correlation with profitability growth of food and beverage firms (r = .614**) and this correlation is significant at 0.01 level as signified by the symbol **. As a result of this, the null hypothesis (H_{o2}) is rejected and the alternate hypothesis is accepted. This implies that we then accept that there is a strong positive and significant relationship between value innovation and profitability growth of food and beverage firms in South-South, Nigeria.

Table 3: Result of bivariate analysis between cost cutting advancement and sales growth of food and beverage firms

			Cost Cutting Advancement	Sales Growth
Pearson (r)	Cost Cutting Advancement	Correlation Coefficient	1.000	.631**
		Sig. (2 tailed)	.	.001
		N	263	263
	Sales Growth	Correlation Coefficient	.631**	1.000
		Sig. (2 tailed)	.001	.
		N	263	263

**Correlation is significant at 0.01 levels (2 tailed)

*Correlation is significant at 0.05 levels (2 tailed)

Source: SPSS-Generated Output, 2024

Table 3 contains the result of the bivariate analysis carried out between cost cutting advancement and sales growth of food and beverage firms in South-South, Nigeria. The result indicates that cost cutting advancement has a strong positive correlation with sales growth of food and beverage firms in South-South Nigeria (r = .631**) and the symbol ** signifies that this correlation is significant at 0.01 level. Based on this result, the null hypothesis (Ho$_3$) is rejected and the alternate hypothesis is accepted. This means that we then accept that there is significant relationship between cost cutting advancement and sales growth of food and beverage firms in South-South, Nigeria.

Table 4: Result of bivariate analysis between cost cutting advancement and profitability growth of food and beverage firms

			Cost Cutting Advancement	Profitability Growth
Pearson (r)	Cost Cutting Advancement	Correlation Coefficient	1.000	.866**
		Sig. (2 tailed)	.	.001
		N	263	263
	Profitability Growth	Correlation Coefficient	.866**	1.000
		Sig. (2 tailed)	.001	.
		N	263	263

**Correlation is significant at 0.01 levels (2 tailed)

*Correlation is significant at 0.05 levels (2 tailed)

Source: *SPSS-Generated Output, 2024*

Table 4 shows the result of the bivariate analysis carried out between cost cutting advancement and profitability growth of food and beverage firms in South-South, Nigeria. The result indicates that cost cutting advancement has a very strong positive correlation with profitability growth of food and beverage firms (r = .866**) and this correlation is significant at 0.01 level as signified by the symbol **. As a result of this, the null hypothesis (Ho$_4$) is rejected and the alternate hypothesis is accepted. This implies that we then accept that there is significant relationship between cost cutting advancement and profitability growth of food and beverage firms in South-South Nigeria.

Table 5: Result of bivariate analysis between technological innovation and sales growth of food and beverage firms

			Technological Innovation	Sales Growth
Pearson (r)	Technological Innovation	Correlation Coefficient Sig. (2 tailed) N	1.000 . 263	.527** .001 263
	Sales Growth	Correlation Coefficient Sig. (2 tailed) N	.527** .001 263	1.000 . 263

**Correlation is significant at 0.01 levels (2 tailed)

*Correlation is significant at 0.05 levels (2 tailed)

Source: *SPSS-Generated Output, 2024*

Table 5 presents the result of the bivariate analysis carried out between technological innovation and sales growth of food and beverage firms in South-South, Nigeria. The result shows that technological innovation has a moderate positive correlation with sales growth of food and beverage firms in South-South Nigeria (r = .527**) and the symbol ** indicates that this correlation is significant at 0.01 level. Based on this result, the null hypothesis (Ho$_5$) is rejected and the alternate hypothesis is accepted. This means that we then accept that there is significant relationship between technological innovation and sales growth of food and beverage firms in South-South, Nigeria.

Table 6: Result of bivariate analysis between technological innovation and profitability growth of food and beverage firms

			Technological Innovation	Profitability Growth
Pearson (r)	Technological Innovation	Correlation Coefficient Sig. (2 tailed) N	1.000 . 263	.702** .001 263
	Profitability Growth	Correlation Coefficient Sig. (2 tailed) N	.702** .001 263	1.000 . 263

**Correlation is significant at 0.01 levels (2 tailed)

*Correlation is significant at 0.05 levels (2 tailed)

Source: *SPSS-Generated Output, 2024*

Table 6 shows the result of the bivariate analysis carried out between technological innovation and profitability growth of food and beverage firms in South-South Nigeria. The result indicates that technological innovation has a strong positive correlation with profitability growth of food and beverage firms (r = .702**) and this correlation is significant at 0.01 level as signified by the symbol **. As a result of this, the null hypothesis (Ho_6) is rejected and the alternate hypothesis is accepted. This implies that we then accept that there is significant relationship between technological innovation and profitability growth of food and beverage firms in South-South, Nigeria.

DISCUSSION OF FINDINGS

This study discovered a very strong positive and significant relationship between value innovation and sales growth of food and beverage firms in South-South Nigeria. This finding was obtained from the result of the bivariate analysis carried out on two variables in the first hypothesis. The result revealed that value innovation has a very strong positive correlation with sales growth of food and beverage firms in South-South Nigeria (r = .823**) and this correlation is significant at 0.01 level. Based on this result, the null hypothesis (Ho_1) was rejected and the alternate hypothesis was accepted. This means that we then accepted that there is significant relationship between value innovation and sales growth of food and beverage firms in South-South Nigeria. This finding is supported by Carter and Diro (2008) who noted that companies that implement value innovation are likely to increase their sales and profit margin. Jacobs and Zulu (2012) also agreed with this finding when they stated that value innovation has the capability of increasing the sales of business firms.

This study also found a strong positive and significant relationship between value innovation and profitability growth of food and beverage firms in South-South Nigeria. This finding was derived from the result of the bivariate analysis carried out on the two variables in the second hypothesis. The result showed that value innovation has a strong positive correlation with profitability growth of food and beverage firms (r = .614**) and this correlation is significant at 0.01 level as signified by the symbol **. As a result of this, the null hypothesis (Ho_2) was rejected and the alternate hypothesis was accepted. This implies that we then accepted that there is strong positive and significant relationship between value innovation and profitability growth of food and beverage firms in South-South Nigeria. This finding is supported by Dikmen et al (2005) and Baregheh et al (2009) as both studies reported that value innovation strategy significantly increase the profitability of business firms.

A strong positive and significant relationship was found between cost cutting advancement and sales growth of food and beverage firms in South-South Nigeria. This finding emerged from the result of the bivariate analysis carried out on the two variables in the third hypothesis. The result revealed that cost cutting advancement has a strong positive correlation with sales growth of food and beverage firms in South-South Nigeria (r = .631**) and this correlation is significant at 0.01 level. Based on this result, the null hypothesis (Ho_3) was rejected and the alternate hypothesis was accepted. This means that we then accept that there is significant relationship between cost cutting

advancement and sales growth of food and beverage firms in South-South Nigeria. This finding is supported by Figar and Ivanovic (2015) who noted that cost reduction enables a company to sell its products at a cheaper prices and this would boost sales of the firm. Hossain (2017) also supported this finding when he stated that companies that are able to reduce their operating costs will experience massive sales growth.

A very strong positive and significant relationship was reported between cost cutting advancement and profitability growth of food and beverage firms in South-South Nigeria. This finding emerged from the result of the bivariate analysis carried out on the two variables in the fourth hypothesis. The result showed that cost cutting advancement has a very strong positive correlation with profitability growth of food and beverage firms (r = .866**) and this correlation is significant at 0.01 level. As a result of this, the null hypothesis (Ho$_4$) was rejected and the alternate hypothesis was accepted. This implies that we then accepted that there is significant relationship between cost cutting advancement and profitability growth of food and beverage firms in South-South Nigeria. This finding is supported by Egbide et al (2019) who noted that a company that reduces its cost would increase its profit margin. Akeem (2017) also agreed with this finding when they stated that companies stands a better chance of maximizing profit if it reduces its operating costs.

This study found a moderate positive and significant relationship between technological innovation and sales growth of food and beverage firms in South-South Nigeria. This finding emerged from the result of the bivariate analysis carried out on the two variables in the fifth hypothesis. The result revealed that technological innovation has a moderate positive correlation with sales growth of food and beverage firms in South-South Nigeria (r = .527**) and this correlation is significant at 0.01 level. Based on this result, the null hypothesis (Ho$_5$) was rejected and the alternate hypothesis was accepted. This means that we then accepted that there is significant relationship between technological innovation and sales growth of food and beverage firms in South-South Nigeria. This finding is supported by Ndesaulwa and Kikula (2016) who noted that technological innovation enables companies to develop products that will attract more customers and boost the sales of a firm. Fayomi et al (2019) also agreed with this finding when they reported that companies are likely to increase their sales if they embrace technology innovation.

Finally, it was reported that a strong positive and significant relationship exists between technological innovation and profitability growth of food and beverage firms in South-South Nigeria. This finding emerged from the result of the bivariate analysis carried out on the two variables in the sixth hypothesis. The result showed that technological innovation has a strong positive correlation with profitability growth of food and beverage firms (r = .702**) and this correlation is significant at 0.01 level. As a result of this, the null hypothesis (Ho$_6$) was rejected and the alternate hypothesis was accepted. This implies that we then accepted that there is significant relationship between technological innovation and profitability growth of food and beverage firms in South-South Nigeria. This finding is supported by Li and Zhang (2007) who noted that a company that adequately embrace technology innovation would sustain its customer base and increase profitability. Ndesaulwa and Kikula (2016) also supported this finding when they reported that modern technology helps to position a company for growth.

CONCLUSIONS

From the analysis, it is evident that frugal innovation has the capability of achieving business success of food and beverage firms. The empirical results of this study confirmed this as value innovation was found to be a significant predictor of sales growth and profitability growth of food and beverage firms. Cost cutting advancement was also found be a significant predictor of sales growth and profitability growth of food and beverage firms. Technological innovation was equally reported to be a significant predictor of sales growth and profitability growth of food and beverage firms. Based on these findings, it is concluded that frugal innovation capabilities such as value innovation, cost cutting advancement and technological innovation are significant predictors of business success of food and beverage firms in South-South, Nigeria.

RECOMMENDATIONS

Based on the findings and conclusion, the following recommendations are made:

1.   That, food and beverage firms in South-South Nigeria should adopt frugal innovation as it would help to achieve business success.

2.   That, food and beverage firms in South-South Nigeria especially those that are currently experiencing low sales should adopt value innovation by providing superior value for customers at a lower cost as it would increase their sales volume and market share.

3.   That, food and beverage firms in South-South Nigeria should move away from the red ocean market and exploit the opportunities in a new and uncontested blue ocean where it can breathe in fresh air and creates a new lease which the industry has never seen before as this would enhance effective practice of value innovation and achieve greater profitability.

4.   That, food and beverage firms in South-South Nigeria should innovate their commercial offers and create a new and uncontested market that will render their competitors irrelevant.

5.   That, food and beverage firms in South-South Nigeria should reduce their innovative and operational costs as it would enable them sell their products at a cheaper price which will attract more customers and increase their sales volume.

6.   Finally, it is recommended that food and beverage firms in South-South Nigeria especially those whose technologies are outdated should embrace technological innovation as it would not only increase their sales and market share but would also increase the profitability of the firms.

REFERENCES

Adepoju, A., O., Olomu, M.O. & Akinwale, Y.O. (2017). The impact of technological innovation on SMEs profitability. *Journal of Marketing Management*, *23* (4), 188-197.

Agarwal, N., Grottke, M., Mishra, S. & Brem, A. (2017). A systematic literature review of constraint-based innovations: State of the art and future perspectives. *IEEE Transactions on Engineering Management*, *64* (1), 3-15.

Ahuja, S. & Chan, Y.E. (2014). Beyond traditional IT-enabled innovation: Exploring frugal IT capabilities. A paper presented at the 20th American Conference on Information Systems, Savannah.

Akeem, L.B. (2017). Effect of cost control and cost reduction techniques in organizational performance. *International Business and Management*, *14* (3), 19-26.

Amadi, L. & Dagogo, D.T. (2021). Frugal innovation and firm competitiveness in Nigerian automobile industry. *International Journal of Innovation in Management and Development Studies, 8* (2), 1-17.

Ang, L. & Buttle, F. (2006). Managing for successful customer acquisition: An exploration. *Journal of Marketing Management*, *22* (1), 295-317.

Aqeel, A.M.B., Awan, A.N. & Riaz, A. (2011). Determinants of business success (An exploratory study). *International Journal of Human Resource Studies*, *1* (1), 98-110.

Basu, R.R., Banerjee, P.M., & Sweeny, E.G. (2013). Frugal innovation: Core competencies to address global sustainability. *Journal of Global Sustainability*, *1*, 63-82.

Bound, K. & Thornton, I.W. (2012). *Our frugal future lessons from India's innovation system*. NESTA Publishers.

Coban, S. (2020). The interaction between firm growth and profitability: Evidence from Turkish (listed) manufacturing firms. *Journal of Knowledge Economy & Knowledge Management*, *9* (2), 40-50.

Cowling, M. (2004). The growth-profit nexus. *Small Business Economics*, 22 (1), 1-9.

Davidson, P., Dteffens, P., Fitzsimmons, J. (2009). Growing profitable or growing from profits: Putting the horse in front of the cart? *Journal of Business Venturing*, 24 (4), 388-406.

Dima, A., Bughenu, A.M., Dinulescu, R., Potcovaru, A.M., Stefanescu, C.A., & Marin, I. (2022). Exploring the research regarding frugal innovation and business sustainability through bibliometric analysis. Sustainability Article, *14*, 1326-1334.

Easterby-Smith, M.E. & Prieto, I. (2008). Dynamic capabilities and knowledge management: An integrative role for learning. *British Journal of Management*, *19* (3), 235-249.

Egbide, B., Otekunrin, A., Bamidele, R., Adewara, S., Oladipo, O. & Eshua, R. (2019). Cost reduction and the growth of selected manufacturing companies in Nigeria. *International Journal of Mechanical Engineering and Technology*, *10* (3), 196-203.

Fayomi, O.S.I., Adelakun, J.O. & Babaremu, K. O. (2019). The impact of technological innovation on production. International Conference on Engineering for Sustainable World. *Journal of Physics*. Conference Series.

Fischer, B., Guerrero, M., Guimon, J. & Schaeffer, P.R. (2021). Knowledge transfer for frugal innovation: Where do entrepreneurial universities stand? *Journal of Knowledge Management, 25* (2), 360-379.

Foley, P. & Green, H. (2009). *Small business success*. *International Small Business Journal*, *17*(1), 36-56.

Gaur, V. & Kesavan, S. (2015). The effect of firm size and sales growth rate on inventory turnover performance in the US retail sector. Springer.

Greeven, M. (2009). Innovation in an uncertain institutional environment: Private software entrepreneurs in Hangzhou, China. Unpublished Ph.D., Erasmus Research Institute of Management, Erasmus University.

Grover, A., Caulfield, P. & Roehrich, K.J. (2014). Frugal innovation in healthcare and its applicability to developed markets. *British Academy of Management*, *2* (1), 149-158.

Harris, M., Bhatti, Y., Buckley, J. & Sharma, D. (2020). Fast and frugal innovations in response to the COVID-19 pandemic. *Nature Medicine*, *26* (4), 814-817.

Harris, D. (2019). Four essential principles of emerging market success. Retrieved from: https://www.chinalawblog.com/2019/05/four-essential-principles-of-emerging-market-success.html

Hossain, M., Simula, H. & Halme, M. (2016). Can frugal go global? Diffusion patterns of frugal innovations? *Technology in Society*, *46,* 132-139.

Hossain, M. (2018). Frugal innovation: A review and research agenda. *Journal of Cleaner Production*, *182* (21), 926-936.

Imhof, M. & Mahr, J. (2017). Applying frugal innovation to serve the bottom of the pyramid in Germany. MBA Thesis, Umea School of Business and Economics, Umea University.

Iskandar, D. (2021). The effect of profitability and sales growth on company value moderated by leverage. *International Journal of Management Students and Social Science Research, 3* (5), 32-41.

Kim, C.W. & Mauborgne, R. (2005). Value innovation: A leap into the blue ocean. *Journal of Business Strategy*, *26* (4), 22-28.

Knorringa, P., Pesa, I., Leliveld, A. van Beers, C. (2016). Frugal innovation and development: Aides or advertisers? *The European Journal of Development Research, 28* (2), 143-153.

Kouser, R., Bano, T., Azeem, M. & Ul Hassan, M. (2012). Inter-relationship between profitability, growth, and size: A case of non-financial companies from Pakistan. *Pakistan Journal of Commerce and Social Sciences*, *6* (2), 405-419.

Krishnan, R. & Jha, S. (2011). Innovation strategies in emerging markets: What can we learn from Indian market leaders? *ASCI Journal of Management*, *41* (1), 21-45.

Lechner, C., Soppe, B. & Dowling, M. (2016). Vertical cooperation and sales growth of young and small firms. *Journal of Small Business Management*, *54* (1), 67-84.

Li, X.Z. & Zhang, X.D. (2007). Analysis of effect on FDI on technology innovation of Zhejiang and Jiangsu. *China Industrial Economy*, *12* (3), 102-109.

Lockey, K. (2002). *Factor and production* (4th eds.). Dp Publishers.

Matei, A. & Savulescu, C. (2009). The impact of reducing the administrative costs on the efficiency in the public sector. *Electronic Journal*, *4* (2), 155-164.

Monteiro, A., Soares, A.M. & Rua, O.L. (2017). Entrepreneurial orientation and export performance: The meditating effect of organizational resources and dynamic capabilities. *Journal of International Business and Entrepreneurship Development*, *10* (1), 3-19.

Nadai, J. & Garai, A. (2017). A question of time: relations between age and business success. *European Journal of Sustainable Development*, *6* (1), 325-334.

Ndesaulwa, A.P. & Kikula, J. (2016). The impact of technology and innovation (technovation) in developing countries. A review of empirical evidence. *Journal of Business and Management Sciences*, *4* (1), 1-6.

Oyerogba, E.O., Olaleye, M.O. & Solomon, A.Z. (2014). Cost management practices and firm performance of manufacturing organizations. *International Journal of Economics and Finance*, *6* (6), 234-236.

Palma, T.M.R. (2018). Frugal innovation and business models in emerging and developed markets. M.Sc. Thesis, Industrial Engineering and Management, Technico, Liscoa.

Parida, V., Patel, P.C., Wincent, J. & Kohtamaki, M. (2016). Network partner diversity, network capability, and sales growth in small firms. *Journal of Business Research*, *69* (6), 2113-2117.

Radjou, N. & Prabhu, J. (2015). *Frugal innovation: A disruptive growth strategy*. Profile Books Ltd.

Reeves, C.A. & Bednar, D.A. (2006). Keys to market success: A responses and another view. *Journal of Retail Banking Services*, *23* (2), 33-45.

Sceulovs, D., Gaile-Sarkane, E. & Rozenbergs, J. (2015). Success factors for a company long-term development: Case of Latvia. Engineering Economics and Management, Riga Technical University, Latvia.

Sher, P. & Yang, P. (2005). The effect of innovative capabilities and R & D clustering on firm performance: The evidence of Taiwan's semiconductor industry. *Technovation, 25* (1), 33-43.

Shivdas, A., Barpanda, S., Sivakumar, S. & Bishu, R. (2021). Frugal innovation capabilities: Conceptualization and measurement. Research Paper, 259-285.

Teece, D.J., Pisano, G. & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18* (4), 509-533.

Wing, K.T. (2000). Using enhanced cost models in variance analysis for better control and decision making. *Management Accounting Quarterly*, *8* (2), 27-35.

Yadav, I.S., Pahi, D. & Gangakhedkar, R. (2022). The nexus between firm size, growth and profitability: new panel data evidence from Asia-Pacific markets. *European Journal of Management and Business Economics*, *31* (1), 115-140.