INNOVATION TECHNIQUES AND COMPETITIVE ADVANTAGE IN PLASTICS MANUFACTURING FIRMS IN ANAMBRA STATE

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ABSTRACT
This study examined innovation techniques and competitive advantage of selected plastics manufacturing firms in Anambra state. Specifically, the study examined the extent to which product, marketing, process and technological innovations influence the competitive advantage of plastics manufacturing firms in Anambra state. Relevant conceptual, theoretical and empirical literatures were reviewed. This study was anchored on Prospect Innovation Theory and Dynamic Capability Innovation Theory. The study adopted the quantitative research design. The total population for the study comprises 780 staff of 8 selected plastics manufacturing firms in Anambra state. A sample size of 240 was selected using simple random techniques. In determining the sample size, Taro Yamane formula was applied at 0.05% level of significance. Structured questionnaire, with 5 Likert rating scale, was employed as the main instrument of data collection. Descriptive statistics and inferential statistics: Spearman Rank Correlation Coefficient and Z test were employed to test the hypotheses at 5% significance level. The evidence from the findings revealed that there is a significant relationship between product, marketing, process and technological innovations and the competitive advantage of plastics manufacturing firms. Changes in consumers' tastes, perceptions and preferences necessitate product innovations. The study recommends that management of the selected plastics manufacturing firms in Anambra state, need to continually modify existing products attributes and customer-focused marketing strategy, in terms of media techniques and pricing strategies. The management should consistently monitor, review and move in tandem with the global dynamic process and work-flow technological innovations for overall cost-efficiency and competitive advantage.

Introduction

It is presumed that firms, especially manufacturing firms, always sought ways to gain a competitive advantage over their competitors. Today, the advent of globalization – (the growing integration of economies and societies around the world), facilitated by growing sophisticated information, communication and transportation technology (ICTT) – (the internet, GSM, TV/Cable Network) has transformed the world into a global village and intensified the prevalence and desire for competitive advantage amongst firms .

Innovation has been viewed by many authors as very crucial driving force for any resourceful organization. Arguably, innovation is the process of translating an idea or invention into a good or service that creates value or for which customers will pay. An idea must be replicable at an economical cost and must satisfy a specific need, in order to be called an innovation. Zwingina and Opusunju (2017), stated that innovation is the acceptance of any idea or conduct related to a product, service, device, policy or programme that is new to the adopting organization. Innovation is often also, viewed as the application of better solutions that meet new requirements, unarticulated needs, or existing market needs. Such innovation takes place through the provision of more-effective products, processes, services, technologies or business models that are made available to markets, governments and society (Skillicorn, 2016). In business, innovation often results when ideas are applied by the company, in order to further satisfy the needs and expectations of the customers. Product innovation is broadly viewed, as an essential tool for competitive advantage and effective corporate performance, embedded in the organizational structure, processes, products, operations, and services within a firm (Gunday, Kandah & Ranch, 2011). Product innovation is one of the fundamental instruments of growth strategies to enter new markets, to increase the existing market share and to provide the company with a competitive edge, for the overall corporate performance and profitability. Invariably, the establishment of plastics manufacturing firms in Anambra state facilitates employment generation, encourage the use of local resources, meet the needs of service industries, potential for rapid industrialization, value added production, and contribute to gross domestic product. However, with the dynamism of the environment and changes in consumption pattern, the plastics manufacturing firms' innovation in products has been a challenge. Some firms do not invest much resources on the utilization of modern technologies, as this makes for the decline in the designing and development of new products. This might not be appropriate, for present and future circumstances, which could make the organizations to fade away with time. Arguably, when firms rely on their past success of established products, they may lose sight of market realities of changes in tastes and preferences of consumers, which are fundamental requirements for effective corporate performance, and may lead to failure.

Innovation is the act of developing a new process and introducing it to the market. It is essentially an entrepreneurial act. Innovation means change; sometimes radical change, such as development of product and some incremental change, such as modification of existing product features or component. In either case, management must develop process to encourage and guide the changes taking place, since innovation generally, stems from purposeful search for opportunities. Peter Drucker, the Management Guru, pointed out that opportunities for innovation exist, both within and outside a company or industry.
Opportunities internal to a company include unexpected events, incongruities in processes or between expectation and result process needs and changes in the market place or industry structure, while opportunities external to a company, including demographic changes in perception and new knowledge.

Product innovation in a firm, is associated with diverse problems that occur during or after innovation. Presumably, lack of marketing research amongst firms, leads to wrong production of needed products. Wrong application of product packaging, can impact negatively on the target market and overall corporate performance. Inability of the firm to analyze and ascertain the stages of product life cycle and inappropriate product presentation to the market, can culminate into negative competitive edge. Globalization is the growing integration of economies and

societies around the world, facilitated by information, communication and transportation technology, has virtually, turned the world into a global village (Mojekeh, 2014), with enormous pressure on firms to move in tandem with global practices, especially, plastics manufacturing firms. Invariably, plastics manufacturing firms are continuously seeking out ways and means to innovate, modify and sustain their competitive advantage in marketplace and market space. Several studies in the literature however, indicate that innovation has significant effect on the corporate competitive advantage (Tuan, Nhan, Giang Njogu and Ngoc, 2016; Ndesaulwa and Kikula, 2016; Verona & Ravasi, (2015).

The existing studies covered innovation variables and corporate performance, customer satisfaction, sales, ignoring the effect of innovation on plastics manufacturing firms' competitive advantage in the market place, especially in Anambra state, hence, the need for this study. This study therefore, examined innovation techniques and competitive advantage in plastic manufacturing firms in Anambra state. Specifically, the objectives are poised to examine the relationship between product, marketing, process and technological innovations and competitive advantage of plastics manufacturing firms in Anambra state.

Ho1: There is no relationship between product, marketing, process and technological innovations and competitive advantage of plastics manufacturing firms in Anambra state.

Conceptual Framework

Innovation

Rosli and Sidek (2013) hinted that the early concept of innovation in economic development and entrepreneurship was popularized by Joseph Schumpeter, a German economist. Joseph Schumpeter is of the view that innovation comprises the elements of creativity, research and development (R&D), new processes new products or services and advance in technologies. Invariably, innovation is the creation of new wealth or the alteration and enhancement of existing resources to create new wealth. Thornhill (2006) and Kuratko & Hodgetts (2016) pointed out that innovation is a process of idea creation, a development of an invention and ultimately the introduction of a new product, process or service to the market. Innovation constitute indispensable component of corporate innovation strategies for several reasons, such as to apply more productive manufacturing processes, to perform better in the market, to seek positive reputation in customers' perception and as a result, to gain sustainable competitive advantage (Onwumere & Eleodinmuo, 2015).

Product Innovation

By product innovation we refer to a product which is new, at least in some respects, for the market into which it is introduced. Product innovations vary in their degree of newness. From one extreme, New-to-the-world products, which create entirely new markets (e.g., the first Airplane, GSM Handset, Plasma TV, ATM, Vending machine etc), to new product lines; additions to existing product lines (e.g. new designs, colours, sizes) to modifications, improvements and revisions of existing products (internet compliant GSM phones/computers, with musicals, camera) and to cost-reduction packaging strategy and active ingredients. It can be argued that product innovation is a crucial tool for achieving corporate competitive advantage. Initially, the competitive advantage created by a product innovation manifests itself in the speed and magnitude of market acceptance. In the longer term, the sustainability of the competitive advantage is reflected by the market share, which the innovative product is able to maintain, against the products launched by competitors, such as market challengers and market followers, even market-nichers. Major product innovations often provide the basis for a new business or

new firm. Evaluating the sustainability of a competitive advantage due to innovation at the business level, typically, requires a longer term view, as compared to analyzing a specific product innovation.

Kuratko and Hodgetts, (2016) asserted that product innovation is considered as a development and a new application, with the purpose of launching newness into the economic area. Also, Rainey, (2016) submitted that product innovation involves the conceptualization, commercialization, development, design, and validation of new product, which provides higher value or utility to all the stakeholders of that product. However, Gronhaug and Kaufinann, (2015), and Rajee, (2016) described product innovation as a source of competitive advantage to the innovator and at the same time can lead to a sustainable increase in firm's profits at difficult times. Kotler, (2004) referred to innovation as a new way of thinking, which in turn can lead to controlling costs, by creating more efficient ways to develop products, fostering creative ways to collaborate with outside resources, or improving business processes in a way to reduce spending, while also improving performance and outcomes.

A product innovation includes significant improvements in active ingredients' specifications, incorporated products authentication software or other functional characteristics (e.g. increasing the percentage of active ingredients for enhanced product efficacy or even less).

Marketing innovation

Oslo Manual (OECD, 2005) defines a marketing innovation as the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing. A marketing innovation is the implementation of a new marketing method involving significant changes in integrated marketing communications, product design or packaging, product distribution channels, or appropriate pricing strategy reformations or price reduction on existing products and the development of new customer services. Marketing innovations are aimed at better addressing customer needs, opening up new markets, or market penetration strategy for existing markets (e.g. implementation of a significant change in the marketing growth strategies).

Process Innovation

A process innovation is a tool to improve organizational efficiency and effectiveness. A resourceful organization may adopt the trending technologies, buy new machineries, train their employees and reorganize their processes to make a process innovation. Process innovation is the application or introduction of a new technology or method for doing something that helps an organization remain competitive and meet customer demands. Process innovation happens when an organization solves an existing problem or performs an existing business process in a radically different way that generates something highly beneficial to those who perform the process, those who rely on the processor (Pratt, 2015). For example, the introduction of a completely new work-flow technology that increases productivity by 100% with remarkable resource cost-efficiency, could be considered a process innovation. Polder, Leeuwen, Mohnen & Raymond (2010),

Competitive Advantage

Competitive advantage is a multidimensional concept whose indicators can be departmental, such as pertaining to production, finance or marketing (Sohn et al., 2007), or consequential, such as, pertaining to growth and profit (Wolff and Pett, 2016). It can be measured with objective or subjective indicators (Dawes, 2015; Harris, 2001). In this study, subjective measures of competitive advantage adapted from Venkatraman (2011) were adopted because of the difficulty of gathering hard financial data from private companies, in the absence of any publicly available objective data which includes the

firms in the sample (Priem et al., 2013). The competitive advantage indicators suggested by Venkatraman (2011) measures perceived competitive edge relative to those of the relevant competitors.

Theoretical Framework

Prospect Innovation Theory

This study is anchored on the Prospect Innovation Theory, propounded by Daniel Kahneman and Amos Tversky (1979), which states that managers in profitable companies are likely to be risk averse and therefore, are psychologically likely to reject potentially innovative ideas, particularly new product, service, and ideas, that offer an opportunity to increase income. However, potentially innovative ideas, which reduce loss, are more likely to be implemented. Thus, in an established firm, process efficiency and ideas, which reduce costs, are more attractive to the typical human than a product idea. Likewise, loss-making companies, such as new start-ups or companies facing economic difficulties, are more likely to embrace new product and service ideas, as they offer the opportunity to reduce loss. However, plastics manufacturing start-ups in Anambra state, with a young, not-yet-defined corporate culture, would seem more likely to innovate effectively, in line with prospects innovation theory, than established plastics manufacturing firms that are suddenly losing money and need to innovate themselves out of trouble, bearing in mind their high entry cum exit barriers, especially within this Covid-19 pandemic

Dynamic Capability Innovation Theory

This theory which was propounded by Schoonhoven (2012) in China, states that the firm's resources are an essential basis for innovation. That is, how competitive advantage within firm is achieved and how that advantage might be sustained over time. Within this perspective, firms are conceptualized as bundle of resources, which are heterogeneously distributed across the firm and where resources differences persist over time. Indeed, when firms have resources that are valuable, rare, difficult to imitate and non-substitutable, they can implement value-strategies that resist duplicate on by other firms and hence create a competitive advantage of product innovation or development. The theory of dynamic capabilities is based on antecedent organizational and strategic routines, by which managers alter their resources base, to generate new value-creating strategies. Moreover, in the context of turbulent markets in hi-tech industries, the resource-based view has provided a dynamic concept that focuses on the capabilities a firm should possess, to approach uncertainty and maintain competitive advantage. Plastics manufacturing firms in Anambra state should therefore, have the dynamic capability of anticipating these continuous process improvement paradigm shifts by integrating, building and reconfiguring, internal and external competencies, to address their rapidly changing business environment and sophisticated plastics manufacturing technology.

Theoretical Exposition

Product Innovation and Plastics Manufacturing Firms' Competitive Advantage

The resource-based view (Barny, 2014) argues that organizational resources which are valuable, rare, inimitable, and non-substitutable are sources of competitive advantage. It has been argued by Barney, Wright and Ketchen (2001) that the major sources of competitive advantage are not the distinctive resources themselves, but the organizational capability, upon which the distinctive resources are made. Hence, when a firm's competitive advantage is eroded as a result of rivals' resource developments, the firm will have to develop organizational capabilities, in order to develop their resources and competitive advantage.

However, literature on organizational capability development has approached organizational capability development by emphasizing either its content or process. Such a separation, created two different views within the literature: a competence-based

view (Sanchez & Heen, 2013), which emphasizes the content of capability development, including the entrepreneurial aspect of organizational capability development, based on examining the impacts of external opportunities on capability development; and a capability-based view (Dosi, Nelson, & Winter, 2010), which addresses the process of capability development, focusing on the strategic aspects of organizational capability development by studying the impacts of past organizational capabilities (and path dependency) on capability development.

With the advent of micro perspective, a new approach in strategic management (Pettigrew, 2010), which goes actually beyond the discussed opposing views of competence based and capability based. Contrary to the traditional resource-based view, scholars of this field argue that instead of theorizing about the distinctiveness of resources, we should study the gradual emergence of this distinctiveness over time (Eisenhardt and Martin, 2010). Sminia (2009), has referred to such a movement in research, as replacing "how" questions with "how to" questions, in strategy process research. He explained that, in research involving a resource based view, instead of studying the characteristics of distinctive resources and capabilities and their relationships with performance, researcher should theorize about, how these characteristics are achieved over time. Judging from this perspective, competitive capability is built using an underlying mechanism, which is the engine of continuous change processes and is called a "generative mechanism" which Pettigrew (2010). Generative mechanisms are argued to include reciprocity between the firms' path dependencies and market changes (Sminia, 2009).

This view therefore, may link competence-based and capability-based views, in conceptualizing capability development as the evolution of organizational past capabilities towards market requirements. This definition of capability development is referred to as strategic capability development. Succinctly, Kashan and Mohannak (2014) defined strategic capability development, as a renewal of an organization's existing capability in line with the capability required by the market, in order to create or regain competitive advantage. Hence, it is expected that by enhancing the understanding of strategic capability development, knowledge can be gained about how competitive advantage (as distinctive from resources) is made. However, we have not yet a clear empirical understanding of such a strategic capability development process. Due to the aforementioned role of generative mechanism, shedding light on the nature of co-evolutionary relationship between micro processes and development of strategic capability, could contribute to clarification of this process. In this regard, one of the critical micro processes in the context of capability development is product innovation (Eisenhardt & Martin, 2010). Ever since Schumpeter's (1942) classic work, the interrelationships between product innovation firms' maintaining or regaining competitive advantage, have been a crucial area of theory development and academic debate. On one hand, some scholars have emphasized the role of product innovation in strategic renewal (Eisenhardt & Martin, 2010).

On the other hand, there is a large number of firms who could not benefit from product innovation for protecting their competitive advantage, and some authors suggest that such failure in linking innovation to performance is due to lack of capability development in the process of product innovation (Slater et al., 2014;Verona & Ravasi, 2015). Micro perspective view (taking product innovation as a micro process at project level), can integrate such findings on the impact of product innovation on capability development and vice versa, by suggesting a reciprocity between product innovation and development of competitive capability. Danneels (2002) argued that product innovation co-evolves with capability

development and so, is a means for capability transformation. One of the major micro processes underlying such co-evolutionary relationship between product innovation and capability development is referred to as knowledge processes.

Basically, there is a strong interrelationship between knowledge processes and capability development in firms, which has both conceptually (Kashan & Mohannak, 2014) and empirically (Cavusgil, Calantone, Zhao, Lupton & Beamish, 20l4) emphasized. Despite such an emphasis on the role of product innovation in making up the generative mechanism and capability development, researchers still argue for clarifications about how product innovation co-evolves with capability development.

Improving the Market Acceptance of Innovations

The Role of Product Characteristics Empirical studies on innovation success generally, conclude that the product itself is the major determinant of market acceptance. But what are the specific product characteristics that account for success or failure? Davidson (2016) emphasized superior product performance and distinctiveness in his study of new grocery products. Arguably, product uniqueness and superiority were the dimensions discriminating most strongly, between success and failure in a broad cross-section of new consumer products. Cooper and Kleinschmidt, (2014), most recent study, confirmed the role of the product advantage, as the most important success factor for new consumer goods. The six attributes can be easily memorized by the "ACCORD" acronym, which stands for: relative Advantage, Compatibility, Complexity, Observability/Communicability, perceived Risk, and Divisibility (trialability).

Rogers (2013) cum Tornatzky and Klein's (2012) comprehensive review of empirical studies concluded that compatibility (+), relative advantage (+), and complexity (-), had the most consistent significant relationships to innovation acceptance. Compatibility and relative advantage were also, the characteristics with the strongest relationship to purchase intentions in a recent study of 19 durable consumer goods innovations (Holak and Lehmann, 2014). The ACCORD characteristics can be used ex ante, as part of a diagnostics and screening system, in order to improve the market acceptance of the innovation.

Empirical Review

A distinct literature concerns the relationship between Global Engagement and innovation by firms. Keller (2015), focuses on the role of international technology diffusion. That is, firms might be able to innovate and improve their productivities if they have access to imports of foreign technology or capital goods used for production.

Another evidence provided by MacGarvie (2006) with French firm data, combined with data on patents, suggests that innovative firms (in terms of patent applications), that import inputs from abroad, tend to have significantly higher propensities to cite foreign technologies in their patent applications. The empirical findings regarding the relationship between the degree of innovativeness and market risk can be summarized: Some technological novelty enhances the chances of market success, but radical technological novelty reduces it; Uniqueness per se, is irrelevant for market success; and the greater the concept novelty, the higher the market risk.

Criscuolo, Haskel & Slaughter, (2016) explore the determinants of firm innovation indicators, including product and process innovation, with firm data from the United Kingdom. They found that exporters and multinational corporations do tend to have higher propensities for product and process innovation than other firms. We call this the Global Engagement hypothesis, and the firms' license payments for foreign technologies, foreign investment, and

international trade policies are relevant variables for assessing its validity. This type of effect needs to be examined jointly with the effects of foreign competition on the innovation decisions of incumbent firms, as per the Market Structure hypotheses discussed below.

The theoretical model proposed by Aghion et al. (2016) builds on the types of models pioneered by Reinganum (1985), in Indian, by allowing incumbent firms to innovate. Market competition through new entrants therefore, can have different effects on incumbents' decisions to innovate, depending on each firm's assessment of the expected difference between profits before and after innovation. Laggard firms that are far from the technological frontier, need to spend a lot of resources to move them towards that frontier, and therefore, could choose to reduce their expenditures in innovation to reduce costs. In contrast, firms close to the frontier need to spend relatively little to keep them ahead of potential new entrants, and thus could increase their innovation efforts in the face of rising competition. These contradictory effects on firms that differ in terms of their technological capabilities yield the so called inverted-U relationship between competition and innovation. We call these the Market Structure hypotheses, and we test them by examining the role of firm size and the regulatory environment that affects the costs and timing of firm entry.

Previous studies reviewed in this study explored the determinants of firm innovation indicators, including product and process innovation, with firm data from developed economies and product innovation for exports in developing countries such as Ghana and South Africa. However, this study bridged a gap by examining product innovation as a tool for firm's survival in competitive market with particular reference to plastics manufacturing firms Nigeria, with emphasis on contemporary development in product and market innovations and competitive advantage of plastics manufacturing firms in Anambra state.

Methodology

This study adopted two research design due to the nature of issues under study and for answering research questions and testing of hypotheses. Exploratory research helps in identifying problems, generating hypotheses and gaining insight into the subject of innovation strategies. The descriptive research design was adopted to obtain first hand data from the respondents so as to formulate rational, sound conclusion and recommendations for the study in innovation strategies in plastics manufacturing firms. The target population for the study comprises 780 management and marketing staff of 8 selected plastics manufacturing firms in Anambra state, particularly, Onitsha, Awka and Nnewi metropolis and conurbation. Viz: Millenium Plastic industry Ltd, Awka. Afro-Asia Automobile & Plastics Ltd, Nnewi. (Chikason Group); Ozalla Plastics Enterprises Ltd, Awka; Ezenwa Plastics Industries Nig. Ltd, Onitsha and Silas Polyplastic International Ltd, Onitsha. Taro Yameni formula was applied to determine the sample size at 0.05% level of significance for sample error.

$n = N/(1+Ne^2)$

$= 2$

$780/ \{1+780(0.05)^2\}$

$= 780/\{2.95\}$

$n = 264.41$

Thus, a sample size of 264 is used.

Data were collected through primary source with well-structured questionnaire. In selecting the respondents, simple random techniques was used to select the sample. The essential purpose of using simple random technique is to avoid subjective bias arising from a personal choice sampling units. In this case each member of the population is given an equal chance of being selected. Content validity was used to adequately measure coverage of the study, while the

reliability of instrument analysis tests were used to determine the extent to which the items of the questionnaire are related to each other, by computing their coefficient correlation and to determine the overall index of their repeatability or the internal consistency of the scale. Test-retest results were corrected using the Pearson product-moment correlation, to yield reliability co-efficient of 0.79 that make the instrument to be adjudged reliable for usage.

Analysis of Data and Discussion of Findings

A total of two hundred and sixty-four (264) copies of the questionnaire were administered, of which two hundred and fifty-two (252) copies were returned. Out of the number returned, two hundred and forty (240) were found to be useful, representing the response rate. The investigation centered on individual staff and management of selected plastics manufacturing firms in Anambra state. The researcher organized the data, converted it into tables, frequencies and percentages. Spearman Rank Correlation Coefficient and Z test were also employed to test the hypotheses at the 5% level of significance. PASW program was employed to analyze the data. The two hypotheses earlier formulated constituted the basis of arrangement of tables for analysis. The hypotheses were structured to focus on the operational variables used in designing the research questions. From the outcome of the study, the most positively significant innovation strategy is perceived product innovation, followed by marketing innovation and process innovation, in the modern business world. The shows that plastics manufacturing firm's staff are mostly between 20 and 40 years old (75%), and male (66.4 %), female (33.6%), which confirms the position of other researchers. Also, the table shows that product innovation stimulate patronage of the products by new and old buyers. The effect of this is to make the life of the products in the market very secured and generate more returns to the company.

To further justify the results, the Spearman Rank Correlation Coefficient and Z test were used to measure the degree of relationship between product, marketing and process/technological innovation techniques and competitive advantage of plastics manufacturing firms in Anambra state. The results are shown in the Spearman Rank Correlation coefficient and Z test below**.**

Analysis of Data

The results of the hypotheses tests were interpreted accordingly;

H01: There is no relationship between product innovation and the competitive advantage of plastics manufacturing firms in Anambra state.

Table 1: Spearman Rank Correlation between Product Innovations and Competitive Advantage of plastics manufacturing firms in Anambra State

Correlations

			MC7	BD1
Spearman's rho	MC7	Correlation Coefficient	1.000	.619
		Sig. (1-tailed)	.	.000
		N	141	140
	BD1	Correlation Coefficient	.619	1.000
		Sig. (1-tailed)	.000	.
		N	140	140

Source: PASW 18.0 for windows

Table 1 above, reveals that there is a positive relationship between product innovation and the competitive advantage of firms. The table shows the Spearman's Rank Correlation coefficient for perceived product innovation and the competitive advantage of firms

variables to be 0.619 with p = 0.000, implying that perceived product innovation and the competitive advantage of firms are significantly related. In order to test the hypothesis, the Z (Z= r√n-1) test was used. In this study, the Z test result reveals that perceived product innovation positively affected the competitive advantage of firms at (Z= 0.6100√120-1= 8.638).

Table 4.26: Test of Hypothesis

Computed Rc	Table R* at 0.05 Confidence	Computed Z	Coefficient
0.610	0.000	8.638	+1.96

Source: Field Survey, 2018

**Since the Z computed (i.e. 8.638) was greater than the critical value (1.96), we rejected the null hypothesis (Ho) and accepted the alternative hypothesis (Hi), that there is a significant relationship between product innovation and the competitive advantage of firms.

H02: There is no relationship between marketing innovation and competitive advantage of plastics manufacturing firms in Anambra state.

Table 2: Spearman Rank Correlation between Sales Volume and Profitability

Correlations

			MC7	BP1
Spearman's rho	MC7	Correlation Coefficient	1.000	.480
		Sig. (1-tailed)	.	.002
		N	240	140
	BP1	Correlation Coefficient	.480	1.000
		Sig. (1-tailed)	.002	.
		N	240	140

Source: PASW 18.0 for Windows

Table 2 shows that there is a positive relationship between perceived sales volumes due to market innovation and competitive advantage of firms. The result of Spearman's Rank Correlation coefficient on Table 2 reveals sales volume of firms to be 0.480 with p = 0.002. This implies that sales volume due to market innovation is statistically significant and positively related to competitive advantage amongst firms. In order to test the hypothesis, the Z (Z= r√n-1) test was used. In this study, the Z test result revealed that market innovation positively affected the sales volume of firms (Z= 0.480 √120-1= 8.230.

Table 4.28: Test of Hypothesis

Computed Rc	Table R* at 0.05 Confidence	Computed Z	Coefficient
0.480	0.002	8.230	+1.96

Source: Field Survey, 2018

Since the Z computed (i.e. 8.230) is greater than the critical value (1.96), we reject the null hypothesis (Ho) and accept the alternative hypothesis (Hi) that market innovation increases sales volume of a firm in competitive market.

Discussion of Findings

Table 1 above, reveals that there is a positive relationship between product innovation and the competitive advantage of plastics manufacturing firms in Anambra state. In this study, the Z test result reveals that perceived product innovation positively affected the competitive advantage of firms at ($Z= 0.6100\sqrt{120}-1= 8.638$). The literature points out that the degree to which product innovation enhances the competitive advantage of firms leads to extensive product development, which the research investigated through the first hypothesis. This finding conforms with the view of McCarthy and Perreault (2015) which stated that, in the modern business world, product innovation stimulate patronage of the products by new and old buyers. The effect of this is to make the life of the products in the market very secured and generate more returns to the company.

Table 2 shows that there is a significant relationship between marketing innovation and competitive advantage cum profitability of plastics manufacturing firms in Anambra state. This implies that increase in sales volume and profitability enhances the competitive advantage of firms. This falls in line with the work of Kotler, (2004), who opined that to develop successful new products; a company must understand its consumers, markets, and competitors and develop products that deliver superior value to customers. It must carry out strong new-product planning and set up a systematic, customer-driven new-product development process for finding and growing new products. This finding also, conforms with the view of McCarthy and Perreault (2015) which stated that in the modern business world, product innovation stimulate competitive advantage and profitability. The effect of this is more returns to the company.

Hence, entrepreneurs in plastics manufacturing industry and management of selected plastics manufacturing firms in Anambra state should through consistent market/consumer survey, identify the needs and expectations of the existing and potential consumers, who are the live wires of any business; because without consumers, their businesses will cease to exist.

Conclusion

In the era of marketing, relationship marketing and societal marketing concepts, manufacturers, and producers determine first, the needs and wants of the consumers and the society, and try their best to inculcate these expectations into the company policies and programmes. As a result of the dynamic business environment today, firms apply different strategies in order to ensure continued operations. Many new product are constantly being introduced into the market, innovators are seriously on their job modifying and deleting old and unprofitable products.

Product innovation, which is the creation and development of new ideas into a new or an existing product, embraces all the activities that will enable a company to determine what product to offer the market, to satisfy consumers and outwit competitors. The success or failure of any business, is a function of the ability of its product to stand firm, in the face of adverse competition from other products. Price reduction, intensive promotion and advertisement, product innovation and effective distribution channels, are all strategies used by management to capture a sizable share of the market, but product innovation is the most effective and most result oriented.

As the population of the nation increases, so also does firms and business ventures, in order to be in alignment with the population. As a matter of fact, only those business units that ensure paramount consumer satisfactions and sovereignty in production, shall withstand that struggle for goodwill. If product innovation is not pursued, the company might be thrown out of the market. Top management should always take cognizance of what Williams (2012)

posited, "a company cannot successfully sell a poor product over the long run." Often, it is easy to create a demand for initial sales. However, a company needs a good product to get repeat sales, and repeat sales are needed to stay in business.

Recommendations

The study recommends that resourceful management of the selected plastics manufacturing firms in Anambra state, need to continually modify existing products attributes and customer-focused marketing strategy, in terms of media techniques, distribution and pricing strategies.

The management should consistently monitor, review and move in tandem with the global dynamic process and work-flow technological innovations for overall cost-efficiency, competitive advantage and sustainable profitability.

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