

The Management Challenge of Sustaining Competitive Advantage through Innovation in Nigerian Business Environment

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Authors' contributions

This work was carried out in collaboration among all authors. Author EUK designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AO and JE managed the analyses of the study. Authors CU and OO managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Organizational learning refers to the sum total of individual and collective learning through training programs, experience, experimentation and work interactions within the organization. Thus, sustainable competitive advantage is the ability to offer superior customer value on an enduring or consistent basis, a situation in which competitors are unable to easily imitate the firm's capacity for value creation. It is worrisome that most literary works have not clearly linked organizational learning with sustainable competitive advantages, as is the case with intellectual capacity (knowledge-based resources) using the resource-based view of the firm. A survey approach was the research design used with particular reference to the South East Zone of Nigeria. Findings revealed that organizational innovation leads to sustained competitive advantage. The Z-statistic value with the corresponding probability value confirms that the organization to a large extent draws its competitive strength jointly from the following factors: creation of new products, changes in way of production,

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changes in architecture of production, improved ways of sourcing supplies, opening new market opportunities, providing goods and services that others are not yet offering or are not able to copy, being able to offer products of comparable quality at a lower price, maintaining a configuration of resources and capabilities that cannot easily be imitated by competitors, being able to attract customers from competitors due to a positive corporate image and encouraging employees to improve their personal skills. The results total Z-scores in absolute term shows that the listed factors pose challenges to the organization in the process of achieving sustainable competitive advantage through innovation. For further justification, we proceed to their joint significant analysis adopting the one sample Z-test. The proxies employed in this study for the measurement of sustainability agreed with resource-based view strategies on sustainability of competitive advantage in an unstable business environment.

Keywords: Organizational learning; innovation; management; sustainable competitive advantage.

1. INTRODUCTION

Today's challenges in business environment is not only to build innovation capacity but establishing clear ways on how to sustain it [1]. Learning through training is of the essence so that capabilities can become stronger, evolving and more unique, thus making them more difficult for competitors to understand and imitate [2].

In building and sustaining capabilities, the characteristics of the organization which cannot be replicated by others make it distinctive and that which can be bought in by the competition are appropriate to the attainment of set objectives [1]. Focusing on a model involving five essential elements and their application consistently and measurement within an activity leads to a greater potential to sustain innovation and competitive advantage.

In the 21st-century business landscape, firms must compete in a complex and challenging context that is being transformed by many factors from globalization, frequent and uncertain changes to the growing use of information technologies [3]. Therefore, achieving a competitive advantage is a major pre-occupation of senior managers in the competitive and slow growth markets which characterize many businesses today and the sources of competitive advantage have been a major concern for scholars and practitioners for the last two decades [4,5,6,7]; Grant, [8,9].

The importance of innovation as a tool for competitive advantage and distinctive competencies as determinants of a firm's success and growth has increased tremendously in the last decade. This increase in importance is as a result of the belief that the fundamental basis of above-average performance, in the long

run, is a sustainable competitive advantage [5]. Practitioners and academics have centered their studies on firm's specific characteristics that are unique, value adding to the ultimate consumer and are transferable to many different industrial settings [10]. Thus, it is understood that across sectors most firms should recognize that attaining competitive advantages is the most challenging issue facing firms in the 21st century. The concern has to lead to the development of resource-based and knowledge-based theories that examine the relationship between core resources and capabilities; sustainable competitive advantage through innovations to attain above normal performance. According to Barney [2] a firm is said to have a sustainable competitive advantage when it is implementing value-creating innovative strategies, not being implemented by any current or potential competitors. Thus sustained competitive advantages exist only after efforts to replicate that advantages have failed. It is for these reasons that firms in Nigeria should focus on innovative methods and strategies that will result in new product development. One of such methods and strategies is organizational retooling through which an organization is capable of being involved with value-adding activities by developing creative innovations, by developing intellectual capital (human capital, social capital and organization capabilities) that are unique.

Goh [11] posits that the intent of the firm is shown by its policy and the strategies for fulfilling the goals become the complementary part of the policy. This was also emphasized by Cook and Yanow [12] who noted that to remain competitive; many organizations are adopting a strategy of continuous improvement. In a new product idea, two elements come together: a technical possibility and a market need. The discussion on whether the development should

be market-pull or technology-push is in this context less important. As a result of continuous improvement, employees are encouraged to learn new skills continually and to try new processes and work methods in order to achieve the strategic business objectives of the organization.

2. LITERATURE REVIEW/RESEARCH GAP

2.1 Theoretical Framework

2.1.1 Organizational learning process

Organizational learning refers to the sum total of individual and collective learning through training programs, experience, experimentation and work interactions within the organization. It is the acquisition, sustenance or changing of meanings shared by people through collective actions and creativity [13]. However, the concept of organizational growth through innovation is subject to competing formulations and is an on-going activity [14]. There is a need to have a process of coordinated systems change, with mechanisms built in for individuals and groups to access, build and use organizational memory structure and culture to develop long-term organizational capacity. It is a dynamic process of creation, acquisition and integration of knowledge aimed at the development of resources and capabilities that contribute to better organizational performance [15].

Previous studies [16,17,18] have proposed four dimensions or phases of sustaining competitive advantage through innovation to be knowledge acquisition, reliable distributive system, accurate information database and good communication channels. These procedures can be used for leveraging creativity in firms thereby attaining sustainable competitive advantage.

This implies that, when a firm acquires individual level knowledge resources (human capital development) through training or experience and other learning activities, it must find a way to leverage those resources to the organizational level. Otherwise, the effects of these knowledge-based resources on competitiveness will be limited. This implies that for an organization to benefit from the innovation process, it should put some effort into the management of knowledge.

The increasing difference between company market value and company book value has prompted academics and practitioners to

consider the concept of intellectual capital as a key determinant of the process of value creation for shareholders, managers and the society as a whole [19]. The intellectual capital theory was initially developed as a framework for analyzing the value contribution of intangible assets in an organization [20] but recent theories include strategic perspectives that allow identification and evaluation of the core competencies that help achieve sustainable competitive advantage [19]. He further argued that the daily operation of firms shows that in value-creation processes, all these types of intellectual capital (organizational capital, social capital, and human capital) act together. These capital resources are acquired through the process of organizational learning and are seen as being extremely important for sustaining competitive advantage in today's competitive environment [3]. Thus through organizational learning, a firm can develop a unique human and organizational capital that is hard to imitate and that evolve continuously with the firm [21]. Armstrong argues that employees' skills, knowledge and abilities (human capital) are intertwined with organizational culture to form unique resources through innovation that other firms cannot acquire and apply.

Organizational capital arises from converting individual and collective knowledge acquired through learning processes, into routines, processes and systems that help develop an organizational reputation, competence and capabilities that are rare and difficult to imitate [21]. It is important to note that human capital has a symbiotic relationship with organizational capital in the sense that each provides the prerequisites for one another's use and development. Individual skills, collective skills and knowledge are used to develop work methods and databases which in turn are used as sources of knowledge for innovative techniques by individuals and groups for the attainment of competitive advantage sustainability.

The mobility of human capital is less a threat to competitive advantage than it would first seem to be because once an organization integrates human capital with other complementary resources and uses this integration to create organizational capabilities, losing one or a few individuals may not lead to a loss of competitive advantage. This means that it is not enough to acquire individuals who have skills, knowledge and abilities, it is also necessary to develop these abilities further and use them to develop

structures, systems procedures and reputation (organizational capital) that allows the organization to exploit the resources and gain competitive advantage [3]. This tripartite concept of intellectual capital indicates that while it is individuals who generate, retain and use knowledge (human capital), this knowledge is enhanced by the social interactions and networks (social capital) to generate the institutionalized knowledge possessed by an organization [21].

2.1.2 Organizational learning and sustainable competitive advantage

Alderson [22] posits that firms should strive for unique characteristics in order to distinguish themselves from competitors in the eyes of the consumer for a long period of time (that is a sustainable competitive advantage). Thus, sustainable competitive advantage is the ability to offer superior customer value on an enduring or consistent basis, a situation in which competitors are unable to easily imitate the firm's capacity for value creation [23]. However, Barney [1] avers that sustainable competitive advantages could occur when firm's resources valuable (the resources help the firm to create products and services), rare (competitors do not have access to them), inimitable (competitors cannot easily replicate them) and appropriate (the firm owns them and can exploit them at will). Acquiring and preserving sustainable competitive advantage and superior performance is a function of the resources and capabilities brought to the competition [24]. These knowledge resources and capabilities, resulting from learning processes implies an improvement in response capacity through a broader understanding of the environment [25].

A superior capability to learn is critical because of the acceleration of markets and technological changes, the explosion of available market data and the importance of anticipatory action. It is a valuable source of competitive advantage because of its complexity, usefulness and difficulty to imitate [26].

The resource-based theory [1,7,27], complementing the traditional [5] model of competitive advantage stresses the importance of the resources and capabilities of the intangible resources and capabilities of the firm in the context of the competitive environment: [23]. This affirms to the fact that firms who devote their internal forces to exploit the opportunities of the environment and to neutralize threats while avoiding weak points are likely to attain

competitive advantages than those that do not do the same [1] and they are able to build a good reputation.

Consequently, the knowledge-based view depicts firms as repositories of knowledge and competencies. This implies that the organizational advantage of firms over markets arises from their superior capability in creating and transferring knowledge. Sequel to this, firms are able to improve their real and perceived market value.

Therefore, accumulation of knowledge through learning constitutes a driving force in development and growth of firms, because the acquisition of knowledge enhances the firms' ability to sustain a competitive position. This added to the fact that the ability to learn faster than competitors may be the only sustainable competitive advantage makes organizational learning a competence that all organizations should develop in fast-changing and competitive environment [28] that is being witnessed today in businesses.

Therefore this research proposal proposes a model that links organizational innovation through learning to sustainable competitive advantage through intellectual capital elements. The design model will help a firm achieve above-average performance over a long period of time if it pursues innovation through organizational learning strategies that lead to competitive advantage and are hard to imitate. Intellectual capital with an effective knowledge management system is to enhance the transfer of knowledge across the boundaries of individual, units and organizations which could lead to sustainable competitive advantage.

2.1.3 Organizational Innovation and Competitive Advantage

Organizational innovation encompasses all activities that precede the adoption of new operational procedures and processes in the structure of an organization. According to Goh [11] an organization that wants to innovate must know very well what it wants to achieve. It must produce fruitful ideas for innovation, work them out skillfully into comprehensive plans for action and then realize those plans tenaciously yet flexible. The structure of innovation is shown in Fig. 1.

The first part of the innovation process to sustain competitive advantage is planning which has two

parts: 'policy formulation' and idea finding.' What an organization wants to achieve is shown by its policy. The right choice of strategy is of the essence in the sustenance of competitive advantage.

When searching for new organizational ideas, it is wise not to search at random, but first to demarcate the areas in which you intend to be active. These areas are called 'search fields'. A search field is a strategic idea of feature activities of a company, which is based on knowledge of external opportunities (strengths). Idea finding has much in common with exploration. Its success depends on the activity itself, but also strongly on luck and chance. The organization policy directs the idea-finding process and provides normative information for making choices in that process [29] argues that coming up with new organizational procedures and processes is the responsibility of an organization to its changing competitive environment.

The strategy formulation stage is subdivided into six activities.

- (i) Analysis of the present situation, which leads to the strategic situation of the organization;
- (ii) Internal analysis;
- (iii) External analysis;
- (iv) Search area generation;
- (v) Search area evaluation; and
- (vi) Search area selection.

Based on an analysis, the strategic situation of the organization is formulated. The strategic

need for innovation is made explicit by estimating the future corporate situation when no strategic changes are made. During the internal analysis, the strategic strengths, the core competencies are defined. In the external analysis, the competitive environment is analysed and the opportunities and threats are made explicit. Search areas are strategic ideas for innovation and potential new business opportunities. A search area is a combination of strategic strength and an external opportunity. During search area evaluation, the strategic innovation ideas are checked with the outside world by interviewing experts, looking at patents, observing potential clients/users, etc. In search area selection, a definite choice is made. The selected search areas form the starting point for the next phase.

An improvement path is selected based upon the strategy and business environment. However, most improvement efforts to sustain a competitive advantage require some level of organizational change, change management and leadership style issues to be addressed.

2.2 Research Method

The research design that was adopted for this research was the survey approach. The survey approach focused on certain phenomenon through the use of the questionnaire, with particular references to the South East Zone of Nigeria, to gather information from a sample of population under study. This is because the survey seems to bring things up to date and relate to the present state of events.

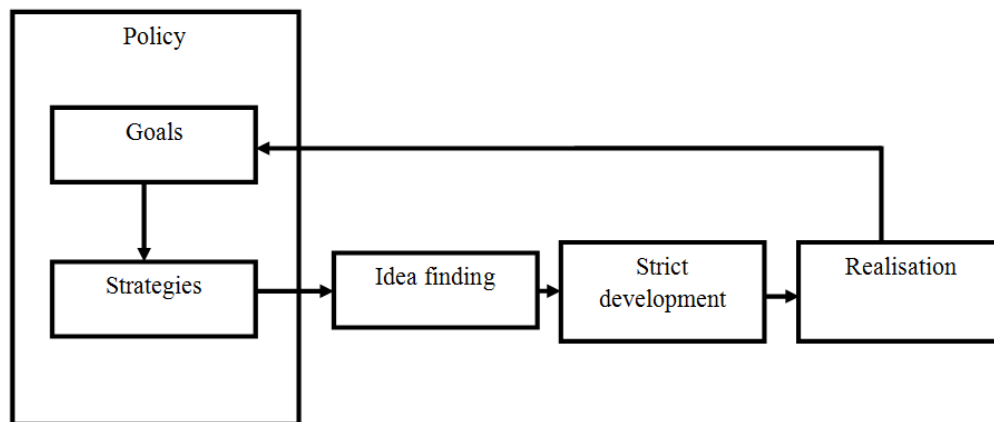


Fig. 1. Flow chart showing structure of innovation

Source: [11]

The findings of this work are discussed in the light of the set objective as follows:

3. DATA ANALYSIS

Table 1. Distribution of gender of the respondents

Gender	Frequency	Per cent
Male	37	62.7
Female	22	37.3
Total	59	100.0

Source: Author's computation using SPSS 20

4. RESULTS

The distribution of the gender of the respondents indicates that 37(62.7%) of the respondents are males while 22(37.3%) of the respondents are females. This shows that there are more males than females in the study. See Fig. 2 below for pictorial presentation.

Table 2 above presents the respondents' positions. The result shows that 19(32.2%) of the respondents are occupying managerial position; 31(52.5%) are marketers; 6(10.2%) of the respondents are administrative/clerical officers while 3(5.1%) of the respondents are occupying other positions which were not highlighted in this study. The result, therefore, shows that most of the respondents are marketers. Fig. 3 presents the pie chart.

Table 2. Distribution of respondents' position

Positions	Frequency	Per cent
Managerial position	19	32.2
Marketing	31	52.5
Administrative/clerical	6	10.2
Others	3	5.1
Total	59	100.0

Source: Author's computation using SPSS 20

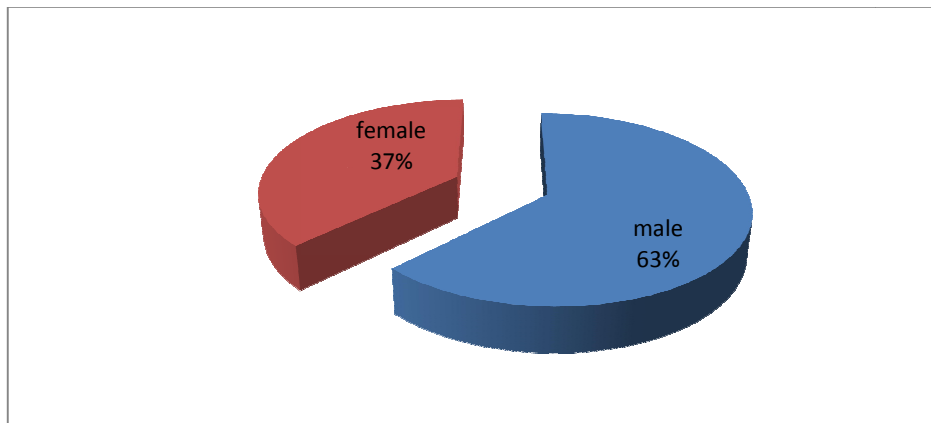


Fig. 2. Pie chart of the gender of the respondents

Source: Field Survey 2016

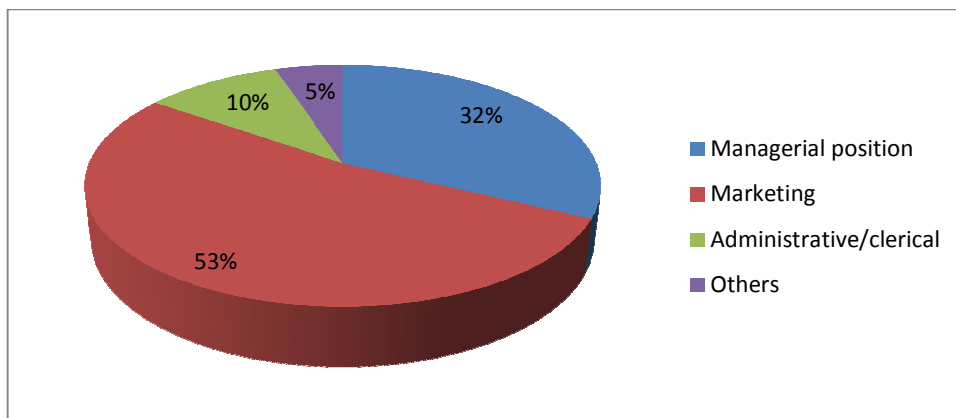


Fig. 3. Pie chart of positions of the respondents

Source: Field Survey 2016

Table 3. Descriptive statistics of the length of service of the respondents

	n	Min	Max	Mean	Std.	Skewnes	Kurtosis
Length of Service	59	1	10	4.71	2.407	.313	-.408

Source: Author's computation using SPSS 20

The descriptive statistics above indicate that the average length of service of the respondents is 4-5 years with a standard deviation of 2-3 years. The minimum year of service of the respondents is 1year while the maximum is 10years. The Skewness and Kurtosis which measures the peakedness and departure from normality of the dataset indicate that the length of service of the respondents is skewed to the right without excess kurtosis.

4.1 Discriminant Analysis

The study utilized Fisher's function of discrimination presenting the degree of correct and wrong classification of the variables under study. From the discriminant result, we have the Box's M which ascertains an equal covariance matrix of the factors. The result here shows that the factors have equal population covariance matrices (Box's M = 4.131; p-value = 0.152).

The canonical correlation with a coefficient value of 0.951 shows that the factors considered in the study explain about 95.1% of the organization's problems. This is significant as it was confirmed in the Table of Wilks' Lambda.

The Fisher's Function and classification result indicates that about 64.7% of the original group cases were correctly classified hence can be subjected to further analysis. The results are as shown below.

The cluster means the value of 4.18 > 3.0 (likert average) indicates that the organization draw its competitive strength to a large extent from sales

volume; product quality/innovation; customer service/care; length of existence/firm history and brand appeal but not largely from firm size.

The results with Z-scores (in absolute term) > 1.96 shows that the organization draws its competitive strength individually from the factors. Hence, we take a further look at the joint statistics.

The Z-statistic value of 10.25 with the corresponding probability value of 0.0000 < 0.05 confirms that the organization to a large extent draws its competitive strength jointly from the listed factors.

The cluster mean value of 4.26 > 3.0 (likert average) indicates that the aspects of innovation contribute positively to a large extent to the achievement of long term competitive advantage.

The results with Z-scores (in absolute term) > 1.96 shows that the respondents do not agree to a large extent that the listed aspect of innovation contributes positively to the achievement of the organization's long term competitive advantage.

Table 4. Box's test of equality of covariance matrices

Test results	
Box's M	4.131
F Approx.	1.892
df1	2
df2	430.178
Sig.	.152

Tests null hypothesis of equal population covariance matrices. Source: researcher extract from SPSS output

Table 5. Test results showing Wilks' Lambda

Test of function(s)	Wilks' Lambda	Chi-square	df	Canonical correlation	Sig.
1	.096	32.762	2	0.951	.000

Source: Researcher Extract from SPSS output

Table 6. Functions at group centroids

Group	Function
	1
Competitive strength	-2.148
Aspect of Innovation	-1.937
Factor	3.762

Unstandardized canonical discriminant functions evaluated at group means

Table 7. Classification results showing factorial measures

Group		Predicted group membership			Total	
		Competitive strength	Aspect of innovation	Factor		
Original	Count	Competitive strength	3	3	0	6
		Aspect of innovation	3	2	0	5
		Factor	0	0	6	6
	%	Competitive strength	50.0	50.0	.0	100.0
		Aspect of innovation	60.0	40.0	.0	100.0
		Factor	.0	.0	100.0	100.0

a. 64.7% of original grouped cases correctly classified. Source: researcher extract from SPSS output

Table 8(a). Sources of competitive strength of the organization

Source	VLE (%)	LE (%)	U (%)	SE (%)	VSE (%)	Mean	Std.
Sales volume/Market share	48(81.4%)	11(18.6%)	0(0.0%)	0(0.0%)	0(0.0%)	4.81	0.39
Product Quality/Innovation	47(79.7%)	12(20.3%)	0(0.0%)	0(0.0%)	0(0.0%)	4.80	0.41
Customer service/Care	20(33.9%)	31(52.5%)	8(13.6%)	0(0.0%)	0(0.0%)	4.15	0.72
Length of existence/Firm History	30(50.8%)	21(35.6%)	3(5.1%)	5(8.5%)	0(0.0%)	4.23	0.91
Brand Appeal	36(61.0%)	21(35.6%)	2(3.4%)	0(0.0%)	0(0.0%)	4.72	0.86
Firm Size	17(28.8%)	21(35.6%)	5(8.5%)	13(22.0%)	3(5.1%)	2.39	1.26
Cluster mean						4.18	0.76

Note: VLE = Very Large Extent; LE = Large Extent; U = Undecided; SE = Small Extent; VSE = Very Small Extent; VLE = 5; LE = 4; U = 3; SE = 2; VSE = 1

Table 8(b). Factors showing mean and Z-score of variables

Factors	Mean	Z-score	Critical value @ 0.05
SV/MKT	4.81	0.67730	1.96
PROQ	4.80	0.66649	1.96
CS&C	4.15	-0.03603	1.96
LEX	4.23	0.05044	1.96
BRAP	4.72	0.58003	1.96
FS	2.39	-1.93824	1.96
Total		3.9485302	

Source: Author's computation using MINITAB 14

Table 8(c). Z-Test results of studied factors

Test of mu = 0.000 vs mu > 0.000
The assumed sigma = 1.00

Variable	N	Mean	St Dev	SE Mean	Z-stat	P
Cluster mean	6	4.183	0.925	0.408	10.25	0.0000

Table 9(a). extent of aspects of innovation

Aspects of Innovation	VLE (%)	LE (%)	U (%)	SE (%)	VSE (%)	Mean	Std.
Creation of new or improved goods and services that are launched to the market	48(81.4%)	5(8.5%)	0(0.0%)	0(0.0%)	6(10.2%)	4.19	1.02
Changes in the way in which goods and services are produced	34(57.6%)	11(18.6%)	3(5.1%)	5(8.5%)	6(10.2%)	4.05	0.58
Changes in the architecture of production	45(76.3%)	3(5.1%)	5(8.5%)	0(0.0%)	6(10.2%)	4.33	1.01
Improved ways of sourcing supplies of raw inputs or intermediate goods and services	42(71.2%)	5(8.5%)	0(0.0%)	6(10.2%)	6(10.2%)	4.21	0.55
Opening up new market opportunities	48(81.4%)	3(5.1%)	0(0.0%)	2(3.4%)	6(10.2%)	4.50	0.61
Cluster mean						4.26	0.75

Note: VLE = Very Large Extent; LE = Large Extent; U = Undecided; SE = Small Extent; VSE = Very Small Extent; VLE = 5; LE = 4; U = 3; SE = 2; VSE = 1

Table 9(b). Mean and Z-score of variable factors

FACTORS	Mean	Z-score	Critical value @ 0.05
Creation of new products	4.19	-0.39109	1.96
Changes in way of production	4.05	-1.22067	1.96
Changes in the architecture of production	4.33	0.43849	1.96
Improved ways of sourcing supplies	4.21	-0.27258	1.96
Opening new market opportunities	4.50	1.44584	1.96
Total		3.76867	

Source: Author's computation using MINITAB 14

Table 9(c). Z-Test results for studied factors

Test of mu = 0.000 vs mu > 0.000
 The assumed sigma = 1.00

Variable	N	Mean	StDev	SE Mean	Z-stat	P
Cluster mean	5	4.256	0.169	0.447	9.52	0.0000

Table 10(a). Extent of Aspects of Innovation

Factor	VLE (%)	LE (%)	U (%)	SE (%)	VSE (%)	Mean	Std.
Providing goods and services that others are not yet offering or are not able to copy	32(54.2%)	0(0.0%)	0(0.0%)	9(15.3%)	18(30.5%)	3.32	1.87
Being able to offer products of comparable quality at a lower price because cost of production is lowest in the industry	32(54.2%)	5(8.5%)	0(0.0%)	17(28.8%)	5(8.5%)	3.71	1.55
Maintaining a configuration of resources and capabilities that cannot easily be imitated by competitors	32(54.2%)	0(0.0%)	0(0.0%)	3(5.1%)	24(40.7%)	3.22	1.97
Being able to attract customers from competitors due to a positive corporate image	32(54.2%)	2(3.4%)	6(10.2%)	3(5.1%)	16(27.1%)	3.53	1.77
Encouraging employees to improve their personal skills so that they can learn and develop	29(49.2%)	5(8.5%)	6(10.2%)	3(5.1%)	16(27.1%)	3.47	1.74
Encouraging employees to share their on-the-job experiences with their colleagues so that people learn from other experiences	34(57.6%)	6(10.2%)	0(0.0%)	13(22.0%)	6(10.2%)	3.83	1.54
Cluster mean						3.51	1.74

Note: VLE = Very Large Extent; LE = Large Extent; U = Undecided; SE = Small Extent; VSE = Very Small Extent; VLE = 5; LE = 4; U = 3; SE = 2; VSE = 1

Table 10(b). Mean and Z-score of variable factors

FACTORS	Mean	Z-score	Critical value @ 0.05
SV/MKT	3.32	-0.84053	1.96
PROQ	3.71	0.85502	1.96
CS&C	3.22	-1.27528	1.96
LEX	3.53	0.07246	1.96
BRAP	3.47	-0.18839	1.96
FS	3.83	1.37672	1.96
Total		4.6084	

Source: Author's computation using MINITAB 14

Table 10(c). Z-Test results for studied

Test of mu = 0.000 vs mu > 0.000

The assumed sigma = 1.00

Variable	N	Mean	StDev	SE Mean	Z-stat	P
Cluster mean	6	3.513	0.230	0.408	8.61	0.0000

The Z-statistic value of 9.52 with the corresponding probability value of $0.0000 < 0.05$ confirms that the listed aspect of innovation to a large extent contribute positively to the achievement of the organization's long term competitive advantage.

The cluster mean value of $3.51 > 3.0$ (likert average) indicates that the above factors pose challenges to the organizations as it concerns achieving sustainable competitive advantage through innovation. Particularly encouraging employees to share their on-the-job experiences with their colleagues so that people can learn from other experiences pose most challenges followed by the organization's ability to offer products of comparable quality at a lower price and lastly by maintaining a configuration of resources and capabilities that cannot easily be imitated by competitors.

The results with total Z-scores (in absolute term) > 1.96 shows that the listed factors pose challenges to the organization in the process of achieving sustainable competitive advantage through innovation. For further justification, we proceed to their joint significant analysis adopting the one sample Z-test.

The Z-statistic value of 8.61 with the corresponding probability value of $0.0000 < 0.05$ implies that the listed factors mentioned above collectively pose to a significant extent challenges to the organization in the process of achieving sustainable competitive advantage through innovation.

5. DISCUSSION

The results above with Z-scores show that the organization draws its competitive strength individually from the factors. Hence, we took a further look at the joint statistics. The Z-statistic value with the corresponding probability value confirms that the organization to a large extent draws its competitive strength jointly from the listed factors.

There are further indications that the surveyed aspects of innovation contribute positively to a large extent to the achievement of long term competitive advantage. The results further agree to a large extent that the listed aspect of innovation contribute positively to the achievement of the organization's long term competitive advantage. These sources according to our findings include Creation of new products, Changes in way of production, Changes in production architecture, improved ways of sourcing supplies and opening of new markets.

6. CONCLUSION

Conclusively, the surveyed factors jointly and severally represent sources of innovation that essentially leads to a strong competitive advantage.

The cluster mean value indicates that the surveyed factors pose challenges to the organizations as it concerns achieving sustainable competitive advantage through innovation. Particularly encouraging employees

to share their on-the-job experiences with their colleagues so that people can learn from other experiences pose most challenges followed by the organization's ability to offer products of comparable quality at a lower price and lastly by maintaining a configuration of resources and capabilities that cannot easily be imitated by competitors.

The results total Z-scores in absolute term shows that the listed factors pose challenges to the organization in the process of achieving sustainable competitive advantage through innovation. For further justification, we proceed to their joint significant analysis adopting the one sample Z-test.

The Z-statistic value with the corresponding probability value implies that the listed factors mentioned above collectively pose to a significant extent challenges to the organization in the process of achieving sustainable competitive advantage through innovation.

7. THEORETICAL AND PRACTITIONER IMPLICATIONS

The proxies employed in this study for the measurement of sustainability agreed with resource-based view strategies on sustainability of competitive advantage in an unstable business environment. This has not been explored by prior researchers.

However, there is a dearth of empirical evidence on such a study in the area of geography. The test statistic used in data analysis is an improvement over what prior research findings employed.

DISCLAIMER

This manuscript was presented in a Conference. Conference name: Los Angeles International Business & Social Science Research Conference, California, USA, At California, USA. July 2017 USA.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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