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Impact of Strategic Orientation Dimensions on New Product Development in Agro-based Nigerian Firms

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Abstract: This study explores the impact of strategic orientation dimensions on new product development capability of firms in the agro-business industry. The study based on questionnaires administered to selected agro-based firms in Lagos and Ogun states (Nigeria) utilized descriptive statistics, Pearson's correlation to analyze the data obtained for the study. Results of data analysis showed that there exist positive relationship between strategic orientation dimensions and new product development. However, aggressiveness, analysis and riskiness dimension were found not to have any effect on new product development. The study recommends that the adoption of appropriate strategic orientation by agro-based firms to enhance their intentions of developing new products can aid constant innovations and engagement in research and development that result in designing products that will satisfy customer needs.

Keywords: Strategic Orientation, Strategic Orientation dimensions, new product development, Agro-based firms, Strategy.
JEL Codes: O13, Q18

1. Background

Over the years several attempts have been made to improve the productivity of the agricultural sector through the engagement of technological processes such as better cultivating and husbandry practices, use of fertilizers and soil conditioners, and so on (Ukeje, 1999). These attempts notwithstanding, the present productivity level of the sector is still described as low. Several efforts to improve the state of the industry through policy formulations have equally, most often, proved abortive due to reasons of inconsistency and poor implementation of such policies among other problems. The challenge therefore, is that individual players in the industry source for means of survival for their businesses. National Academy of Agricultural Sciences (2002) identifies that agriculture is shifting from a supply driven to a demand driven situation. This assertion could be a result of the steady growth in population which is predicted to exceed E9, billion, in the coming years (The Dupont Advisory Committee on Agricultural Innovation Productivity for the 21st Century, 2011). Therefore, the counsel is that agro-based firms create products that meet consumer wants and needs. There must be a consciousness for developing new products that can be value adding to consumers and position indigenous firms in the industry in a competitive position above their foreign counterparts.

The aim of this paper is to show the possibility of improving the product development capability of agro-based firms through the engagement of strategic orientation.

2. Literature Review

2.1 Strategic Orientation and the New Product Development Process

The general quality that has described a product is its physical and tangible nature. However, in the twenty-first century, knowledge and concepts which have an intangible nature are also acceptable regarded as products. The management of new product development has been discussed by renowned scholars (e.g. Salustri and Proulx, 2004; Schimmoeller, 2010). The new product development process may be organized using functions or departments such as research and development (R&D), product development, design or engineering, and process planning or engineering (Acur, Kandemir and Boer, 2012). Kotler (2003) emphasized the importance of the company's internal research and development effort towards the development of new products. Advancing from the process of managing new products will bring to light the implementation of new product development. Partly, we can ascertain that new products emerge as a result of factors such as the creation of a differential advantage, to ensure continued growth for the manufacturer, to take advantage of emerging technological trends, among other reasons. There is however, not a putting away of the fact that individual players in the industry constantly engage in research activities to meet up with these challenges. Therefore the need for implementation becomes even a more necessary subject of discuss. Bessant and Francis (1997) commented along this line when they said the development of new product requires "specialized skills, knowledge, processes, mind-sets, problem solving mechanisms and management philosophies". The result of a study carried out by Jeong, Pae, and Zhou (2006) revealed that customer orientation and technological

orientation are significant strategic orientations to the success of new product orientation. Gatignon & Xeureb (1995) also showed a similar result and added the competitive orientation to the existing customer and technological orientation.

Owing to issues of viability and expectations from government and society, product developers now give more attention to all stages of the product's life during the design process (Salustri and Proulx, 2004). The product life cycle is a period that spans from the time a product is first introduced into the market to the time it is finally withdrawn (Kominos, Milossis, and Kominos, n.d.). The standard Product Life Cycle consists of five stages, namely: product development, product introduction, product growth, product maturity, and product decline.

2.2 Marketing Agricultural Products

The Agricultural Marketing Resource Center (2007) supported the important role of marketing of agricultural products as value adding through its identification of consumer want and the ability to engage the most efficient and appropriate channels in delivering it to them at a profit. Marketing of agricultural products can be explained from perspectives that involve the physical distribution processes and the pricing mechanism operational in the market (Shepherd, 2000). The basic mechanism for determining market prices of agricultural goods is the forces of supply and demand. Supply is influenced by factors such as local production and production from neighbouring countries. World production becomes as considerable factor in the case of export marketing. Dealers, who serve as distributive agents also play their significant role in the determination of prices. The profit margin of these intermediaries depends on the difference between the prices they obtain products from the producers and from the prices they sell to the consumers. The challenges that surround the operations of marketing agricultural products are general to the sub-Saharan region of Africa (Inter-réseaux Développement Rural, 2009). These challenges have left an impact of under-optimal functioning of the Agricultural market. Factors that inform these challenges include: "failing infrastructure for warehousing and transportation, weakness in the banking system with the absence of credit and insurance markets, non-competitive situations (a limited number of buyers in dominant and/or concentrated positions facing a multitude of disorganized sellers), asymmetries in access to and quality of information, rules and norms applied in a discriminatory fashion, formal and informal taxation leading to higher costs (lack of transparency in pricing and the factors that govern it).

Marketing of agricultural products in South Africa is steadily supported by the government (Department of Agriculture, Forestry and Fisheries, 2010). In the light of this, strategies have been put in place in the form of government programmes for the support of agricultural marketing. The programmes include:

1. Research, including general research, research in connection with environmental programmes and research relating to particular products
2. Training services, including both general and specialist training facilities
3. Marketing and promotion services, including market information, advice and promotion relating to particular products but excluding expenditure for unspecified purposes that could be used by sellers to reduce their selling price or confer a direct economic benefit to purchasers
4. Infrastructural services, including electricity reticulation, roads and other means of transport, market and port facilities, water supply facilities, dams and drainage schemes, and infrastructural works associated with environmental programmes but not including subsidies to inputs or operating costs, or preferential user charges

The case has not been too different in United States of America. In a comparative study of selected Agricultural products in the USA and Argentina, Lence (2000) showed that the marketing activities of USA has gained wide spread success as a result of government support through export subsidies, credit guarantees, subsidized storage and subsidized crop insurance. Argentina on the other hand, has laid significant emphasis of the development of domestic production through export tax mechanism, official export process, price control at the wholesale and retail levels and quotas.

Agriculture has an important role in the economy of Nigeria account for one third of the GDP that compares with 1.8% in the OCDE countries (WB, 2012). Due to this, in 2001, the Nigeria government launched the new agricultural policy in an effort to redirect the direction of the sector based on better sophisticated strategies. The issues addressed by the policy include: (i) agricultural resources (land, labor, capital, seeds, fertilizer, etc) whose supply and prices affect the profitability of agricultural business, (ii) crops, livestock, fisheries and agro-forestry production, (iii) pest control, (iv) mechanization, (v) water resources and irrigation, (vi) rural infrastructure, (vii) agricultural extension and technology transfer, (viii) research and development (R&D), (ix) agricultural commodity storage, processing and marketing, (x) credit supply, (xi) insurance, (xii) agricultural cooperatives, (xiii) training and manpower development, and (xiv) agricultural statistics and information management. The new strategies are aimed at ensuring sustainable development, productivity and output in the sector. The strategy content includes: (i) Creating a more conducive macro-environment to stimulate greater private sector investment in agriculture;(ii) Rationalizing the roles of the tiers of government and the private sector in their promotional and supportive efforts to stimulate agricultural growth; (iii) Reorganizing the institutional framework for government intervention in the agricultural sector to facilitate the smooth and integrated development of the sector; (iv) Articulating and implementing integrated

rural development programs to raise the quality of life of the rural people; (v) Increasing budgetary allocation and other fiscal incentives to agriculture and promoting the necessary developmental, supportive and service-oriented activities to enhance agricultural productivity, production and market opportunities; and (vi). Rectifying import tariff anomalies in respect of agricultural products and promoting the increased use of agricultural machinery and inputs through favourable tariff policy.

Under the new agriculture policy the responsibilities for effective implementation cuts across all three tiers of government and active private sector engagement in taking advantage of investment opportunities.

2.3. Theoretical Framework

Venkatraman (1989) proposed a set of strategic orientation variables that are applicable at the business level. They are: aggressiveness, analysis, defensiveness, futurity, proactiveness, and riskiness.

Aggressiveness dimension measures the business ability to engage organizational resources in executing aggressive strategies and the pursuit of increased market share as a means to achieving business unit profitability. The aim of the firm is to possess higher market share ahead of competitors (Abiodun, 2009). This strategy takes the form of cost leadership (Porter, 1980; Miller 1988; Wright et al 1992; Thompson and Strickland, 1999; Hitt et al, 2007; Chang et al, 2002), explosion and expansion strategy described by Wissema et al (1980), product innovation (Schuler and Jackson, 1987; Miller, 1988), price and image differentiation (Mintzberg, 1988).

Analysis refers to the ability to investigate deeply into the foundational causes of problems and develop the best alternative solution as a way of problem-solving. It relates to the maintenance of internal consistency in the resource allocation strategies towards the achievement of corporate objectives. The alignment of resource allocation and competitive intelligence are important issues of consideration (Abiodun et al, 2011).

Defensiveness reflects the firm's emphasizes on defense strategies over its core technology and product-market domain through the use of cost minimization and techniques that achieve operational efficiency. This posture is related to the defender trait described by Miles and Snow (1978), defensive actions (Miles and Cameron, 1982), niche marketers (Miller, 1988), cost reduction (Schuler and Jackson, 1987), and niche differentiation (Ward et al, 1996).

Futurity is the extent to which decisions that relate to possible future occurrences are seriously engaged. It reflects issues like sales forecast, possible changes in customer preference, and tracking of environmental changes. It is manifested by a firm's incorporation of its vision of the vision as a strategic concern (Stambaugh et al, 2011).

Proactiveness reflects the firm's constant engagement in the search for new market opportunities, the first mover in the introduction of new products, while old products are strategically withdrawn from markets. It shows the degree of the firm's experimentation with marketing research responses (Venkatraman, 1989). It explains a firm's drive for first mover position in the market (Chang et al, 2002), and a search for new opportunities (Miles and Snow, 1978), and the pursuit of new markets through the engagement of value innovations.

Riskiness captures the extent of riskiness of the firm. This is reflected in its choice and criteria over resource allocation decisions and the general pattern of decision making. Firms characterized with high risk strategies may be trading-off with lower profits than expected (Söderbom, 2012).

Although R&D investment is important in the new product development (Kotler, 2003) due to the small sophistication of agricultural firms in the area of Lagos and Ogun states, we decided to exclude this dimension from the analysis.

3. Methodology

The research made use of the descriptive survey research design. A cross sectional design was adopted. A sample size of 210 agro-based firms was surveyed of an estimated population of about 1500 registered agro based firms in the study locations. The sampling techniques adopted for this study include the convenience sampling (which is also known as the accidental sampling) and the purposive sampling. The justification for this sampling technique results from situations of respondents' unwillingness to supply information into the research instrument, therefore leading to selection of respondents who are willing to respond at the instance of approaching them. A major advantage of the chosen sampling techniques is that they produced an unbiased answer from respondents since they willingly accepted the interview. The choice of the study was largely influenced by cost of survey, time, logistic problems and accessibility. Therefore, the study area was chosen by purposive sampling method. Furthermore, the sampled firms were also chosen in similar premise: access and data availability. The strength of this sampling procedure resides in the ability to permit a realistic pursuit of required informal and information-rich respondents.

However, sampling within the organization involved the use of stratified sampling approach as well as purposive sampling. In each of the sampled organization the top hierarchies form strata which were purposefully sampled to include key organization officers. This is due to the fact that strategic issues demand the attention of well-trained officers which are usually located at the top echelon within the organization. Low cadre officers, below the rank of manager were excluded from the sample.

Data used for this study was obtained from both primary and secondary sources. The primary sources include the administration of questionnaires on: Managing

Directors, Chief Executive Officers and Functional Managers of Agriculture producing firms in Lagos and Ogun States, while secondary source of data included Library, Internet facilities, text books, journals and conference papers. Most of the items in the questionnaire were adopted from the instrument developed by Venkatraman (1989), with modifications to suit the current need and industry of the study.

It was organized into three sections, A – C. Section A contain the background information of the respondents. This was designed to capture the respondent's status, demographic information and eligibility to respond to the questions. Section B focused on questions that are firm specific. It is focused on obtaining information relating to the characteristics and operations of the firm. It basically inquired into the date the company started operations and the number of employee presently serving in the organization. Section C dealt with questions that relate to the thrust of the study. The section is divided into two parts. The first section attempt to gain insight into the strategic orientations of the firms. Therefore, questions were focused on the basic orientations of aggressiveness, analysis, defensiveness, futurity, proactiveness, and riskiness (Venkatraman, 1989). Each of these were scaled using a 5-point likert scale. The second segment focused questions on the performance variables. Following the works of Wang, Chich-Jen, and Mei-Ling (2010), three variables were adopted: Financial, business, and effectiveness dimensions of performance.

A total of 193 questionnaires was retrieved and adjudged suitable, which formed the basis of the analysis in this study, which is 91.9 percent response rate. An analysis of the questionnaires by total responses showed that Lagos has the higher response rate of 122 (63.2%). This could be a result of the concentration of most agri-business firms in strategic locations of the state, thereby forming a structured and organized pattern of operation and easy accessibility. Ogun has 71 (36.8%). In addition, 50 respondents, that is 25.9% have less than 5 years working experience. 67 (34.7%) obtain between 5 to 10 years working experience, while 29 (15.0%) have experienced 11 to 15 years of working in the agricultural business. 47 (24.4%) have worked in the business for 16 years and above. The largest number of respondents are those who are Managers in the organization, consisting of 96 of the respondents (49.7%). 24 respondents (12.4%) occupy positions of Chairman/M.D., while only 14 respondents (7.3%) are CEO/Deputy M.D. Senior managerial position consists of 59 respondents (30.6%). 170 respondents, that is 88.2% have a minimum of bachelor degree while only 23 respondents (11.9%) have less than bachelor degree. This reveals that apart from experience gathered on the job a large number of respondents attained reasonable level of education to respond to the questionnaire. A large number of 108 firms, that is, 56.1% of the firms started before the year 2000. This reveals that majority of the firms are well established in the agricultural business. The remaining 85 firms (44.0%) have existed from 2000 to date. 179 respondents (92.7%) work in organizations with staff capacity of between 1 and 299. This shows that most firms in the agro-based business are small and medium enterprises. Only 14 respondents (7.3%) work in organizations with 300 and above staff capacity.

4. Data Analysis and Discussion of Results

4.1 Strategic Orientation

A multi-item index was used to measure each of the dimensions of strategic orientation (see, Table 1).

Table 1 shows the descriptive statistics of respondents on the various dimensions of strategic orientation dimensions. The table reflects the degree to which firms in the Nigeria agro-business industry engage each of the six dimensions of strategy in their business operations. It is evident that on a likert scale where 5 is the maximum, industry players give strong recognition and support to the role of aspects of strategic orientation. This also goes on to inform that there exist a high awareness of aspects of strategic orientation in the industry. The most prominently engaged strategic posture is the analysis orientation (mean = 4.35). Arguments to support this claim could result from the fact that the agro-business industry is faced by several severe challenges that require firms to seek problem solving measures in order to survive the pressures of the industry (Ukeje, 1999; Manyong et al, 2005).

Table 1: Descriptive Statistics of Responses on the Strategic Orientation

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Aggressiveness	193	3.9573	.84227	-.492	.175	-.667	.348
Analysis	193	4.3506	.43666	-.973	.175	1.845	.348
Defensiveness	193	4.3109	.55480	-1.161	.175	2.066	.348
Futurity	193	4.1801	.60189	-.531	.175	-.201	.348
Proactiveness	193	3.9870	.73719	-.861	.175	.834	.348
Riskiness	193	3.2394	.71159	.314	.175	-.596	.348
Valid N (listwise)	193						

Source: Authors

There are also high engagements of defensiveness orientation (mean = 4.3) and futurity orientation (mean = 4.2). the implication of such defensive actions could be traced to the pressures faced by local industry players from their foreign counterparts. Therefore, firms strategically make efforts to secure their present product-market domain. Actions relating to future expansions and growth also gain the focus of the firms. However, firms seem not to be well inclined to the riskiness orientation (mean = 3.2). the supporting evident for this can be explained by factors such as several failures in government support policies that could have aided the growth of the industry, the slow growth of the industry and the uncertainties that surround price control mechanisms and the Nigeria agricultural market (Grandval and Douillet, 2011; Obinna, 2012).

4.2 Descriptive Statistics of Responses on New Product Development

Table 2 shows that the attributes that support new product development are generally high. Innovation (mean of 4.27), satisfaction of customer needs (4.40), research and development (4.35) and modification of aging product (4.09) carry strongly supported by firms in the industry.

Table 2: Descriptive Statistics of Responses on New Product Development

				Skewness		Kurtosis	
	N	Mean	Std. Dev.	Statistic	Std. Error	Statistic	Std. Error
The organization support constant innovations and investment in new business	193	4.27	.908	-1.541	.175	2.581	.348
The organization constantly seek to offer products that will satisfy customer needs	192	4.40	.745	-1.636	.175	4.224	.349
The firm emphasizes the importance of research and development	193	4.35	.660	-.626	.175	-.131	.348
Ageing products are constantly modified and improved upon rather than laid off	193	4.09	.871	-1.129	.175	1.651	.348
Valid N (listwise)	192						

Source: Authors

4.3 Regression effect of strategic orientation dimensions on new product development

Table 3 shows the effect of strategic orientation dimension on the new product development. Four dimensions: aggressiveness, analysis, defensiveness, and futurity significantly impact on organizational effectiveness. New product development is positively affected by the defensiveness, futurity, and proactiveness dimensions. The table also reveals that 52 per cent (r2 = 0.52) of organizational effectiveness can be explained by the aggressiveness, analysis, defensiveness, and futurity strategies.37 per cent (r2 = 0.37) of new product development is explained by defensiveness, futurity, and proactiveness dimensions.

5. Conclusions

Findings from this study present empirical evidence that have significant implications to management. The findings of this study show the importance of strategic orientation dimensions to innovative capability of agricultural firms in the region of Lagos and Ogun Sates as they strive towards creating new and competitive products. The result of this study revealed that satisfaction of customer needs should be a major focus of the development of new products. This is consistent with the suggestion raised by Gatignon & Xeureb (1995) and Jeong, Pae, & Zhou (2006) that customer orientation, competitive orientation and technological orientation are significant strategic orientations to the success of new product orientation. New products are results of organizational innovativeness (Maass, 2012; Acur, Kandemir, and Boer, 2012). Also, products could be modified and improved upon rather than being laid off. This idea results in savings of energy and resources needed to make new products (Salustri & Proulx, 2004). Organizations that have intentions of developing new products can achieve better successes through constant

innovations and engagement in research and development that can result in designing products that will satisfy customer needs. The result found that aging products don't necessarily have to be done away with but can be modified to form new products with better will achieve better value creation.

Table 3: Regression effect of strategic orientation dimensions on new product development

	New Product Development				
	Unstd. Coefficient		Std. Coeff.		
	Std Error	β	Std Error	T	
Constants	1.509	.394		3.834*	.000
Aggressiveness	.042	.044	.065	.959	.339
Analysis	.106	.101	.086	1.056	.292
Defensiveness	.211	.069	.216	3.036*	.003
Futurity	.155	.079	.172	1.953**	.052
Proactiveness	.184	.054	.250	3.385*	.001
Riskiness	-.046	.046	-.061	-1.010	.314
R	0.61				
R^2	0.37				
Adj. R^2	0.359				
F	18.899**				

(*p < 0.01) **p < 0.05) ***p < 0.1) **Source**: Authors

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Appendix - Questionnaire

Aggressiveness Dimension

1. Does the firm sacrifice profit making to gain higher market share?
2. The firm cuts down on prices in order to increase market share
3. Does the firm set lower prices on products compared to that of competitors?
4. Do you agree that the firm trades off cash flow and profitability to gain higher market share?

Analysis Dimension

1. Does the firm emphasize effective coordination among different functional areas?
2. The firm operates with information systems that provide support for decision making
3. Does the firm carry out a thorough analysis when confronted with a major decision?
4. Does the firm use planning techniques?
5. Do you agree that the outputs of management information and control systems?
6. Does the firm constantly carry out Manpower planning and performance appraisal of senior managers?

Defensive Dimension

1. The firm constantly updates its manufacturing technology
2. The firm encourages the use of cost control systems for monitoring performance
3. Does the firm operate on production management techniques?
4. The firm places emphasis on product quality?

Futurity Dimension

1. The firm's resource allocation strategy generally reflect short-term consideration
2. Research is constantly carried out in order to gain future competitive edge
3. Does the firm constantly keep track of significant general trends?
4. Does the firm make contingency plans of critical issues?

Proactiveness Dimension

1. The firm constantly engages in seeking new opportunities related to the present operations
2. Is the firm usually on the lookout for businesses that can be acquired?
3. Competitors usually preempt us by expanding capacity ahead of us
4. Are operations in larger stages of the life cycle strategically eliminated?

Riskiness Dimension

1. Our operations can be generally characterized as high-risk
2. We seem to adopt a rather conservative view when making major decisions
3. New projects are approved step-by-step rather than holistically
4. The firm tend to support projects where the expected returns are certain
5. Operations have generally followed a "trial and error" pattern

New Product Development

1. Does the organization support constant innovations of new business?
2. Does the organization emphasize the need to offer products that will satisfy customer needs?
3. Does the firm emphasizes the importance of research and development?
4. Are Ageing products are constantly modified and improved upon rather than laid off?

*Strategic Orientation Dimensions and questions were adopted from Venkatraman (1989)