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Planning flexibility and corporate entrepreneurship in the manufacturing sector in Nigeria

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Abstract: This study investigates the relationship between planning flexibility and corporate entrepreneurship in the manufacturing sector in Nigeria. A survey research method was used to generate data from a sample of manufacturing firms in Nigeria on planning flexibility and corporate entrepreneurship variables. Responses from the survey were statistically analysed using descriptive statistics, product moment correlation, regression analysis and Z-test (approximated with the independent sample t-test). The results of the study indicate a statistical significant relationship between planning flexibility and corporate entrepreneurship as well as reveal a significant difference between the entrepreneurship of firms whose planning flexibility are low and those whose planning flexibility are high. The research findings provide insights regarding how the interaction between planning flexibility and corporate entrepreneurship would assist the growth and development of manufacturing sector in Nigeria.

Keywords: Nigeria; planning flexibility; corporate entrepreneurship; manufacturing sector; uncertainty; environmental change.


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1 Introduction

The world of manufacturing has changed radically over the last decade. Increasing competitive pressures are being experienced in both domestic and international manufacturing markets (Mandal et al., 2008). The manufacturing sector plays important roles in the growth and development of many nations. The manufacturing sector is a potential mechanism of modernisation, a creator of jobs, and a producer of positive effects multiplier (Oghojafor et al., 2011; Tybout, 2000). The manufacturing sector is considered very crucial as it is expected to be one of the critical sectors absorbing the surplus agricultural labour as they are released from the rural sector in the development process (Ogunrinola and Osabuohien, 2010).

The dramatic change in the competitive landscape for many organisations is forcing managers to reconsider not only the content of their strategic plans, but also the processes they use to develop and implement those plans (Dibrell et al., 2007). Flexibility is considered as one competitive priorities that manufacturing firms should consider them when planning their operations and manufacturing strategy (Awwad and Almahamid, 2008). This is because it will likely facilitate entrepreneurship, and consequently, firms’ growth.

The global environment requires firms to create organisational conditions (which include flexibility in planning) and processes that facilitate innovation and enable large numbers of employees to move from an ‘employee mindset’ to an ‘intrapreneur mindset’ (Seshadri and Tripathy, 2006). Only few firms may have actually succeeded in making this transition. The situation is not likely different in Nigeria (Oghojafor et al., 2011). However, it is good news that government at all levels in Nigeria are now thinking of entrepreneurship. Entrepreneurship forces ‘creative destruction’ across markets and industries, concurrently creating new products and business models (Momoh, 2011). From an organisational viewpoint, entrepreneurship has the potential to overcome institutional rigidity and initiate change (Otmazgin, 2011) through flexible planning.

Hence, this study investigates the relationship between planning flexibility and corporate entrepreneurship in the manufacturing sector in Nigeria. The choice of manufacturing sector was made because of its significance and potential to Nigeria’s economic development. Sample from the survey were drawn from manufacturing firms in Lagos state. Lagos state was the spotlight because it is undoubtedly the commercial nerve-centre of Nigeria, with the largest concentration of industries (Iwugo et al., 2003), and over 55% of manufacturing firms in Nigeria have their head offices located in Lagos state (MAN, 1994, 2003, 2006). Therefore, Lagos provides an attractive place for the research (Oghojafor et al., 2011).
Planning flexibility and corporate entrepreneurship

2 Literature review

2.1 Corporate entrepreneurship

Entrepreneurship involves an innovative and proactive approach to challenges, tasks, needs, obstacles, and opportunities by starting with nothing but a daring idea and great confidence. It is an act of winning the game of competition (Aktan and Bulut, 2008). Whereas entrepreneurship is primarily viewed as an individual pursuit and in relation to start-up entrepreneurs (Thornberry, 2001), corporate entrepreneurship is viewed as acting entrepreneurially within the confines of an established firm (Kenney and Mujtaba, 2007). It embodies renewal activities that enhance a firm’s ability to compete and take risks, which may or may not involve the addition of new businesses to a firm (Phan et al., 2009).

Corporate entrepreneurship exists in different forms, and the form that is appropriate in one firm may not be appropriate in another (Fry, 1993). There are four types of corporate entrepreneurship, with each one oriented to either sustained regeneration or organisational rejuvenation or strategic renewal or domain redefinition (Covin and Miles 1999; Dess et al., 2003):

1 **Sustained regeneration:** This is the most frequently recognised corporate entrepreneurship form. The organisation develops cultures, processes, and structures to support and encourage a continuous stream of new product introduction in its current markets as well as entries with existing products into new markets (Covin and Miles, 1999). Firms that are involved with corporate entrepreneurship are aware of product life cycles and always shape product strategies around the competitive expectations associated with them. They are also committed to the significance of learning and adapting while actively competing against rivals (Dess et al., 2003).

2 **Organisational rejuvenation:** The focus of this is on the firm’s internal processes, structures and capabilities. As the primary concern of organisational rejuvenation is the improvement of the firm’s ability to execute strategies, it often entails changes to value chain activities. By demonstrating process and administrative innovations rather than product innovations, organisational rejuvenation shows that firms can become more entrepreneurial through processes and structures as well as by introducing new product and/or entering new markets with existing products (Dess et al., 2003). Corporate entrepreneurship efforts geared toward organisational rejuvenation are framed around support activities (example, procurement and human resource management) rather than primary (example, inbound logistics and operations) activities (Dess et al., 2003).

3 **Strategic renewal:** Here, the firm seeks to change how it competes. Accordingly, the nature of rivalry with competitors is altered as the firm concentrates on renewing the strategies it uses to successfully align itself with its external environment. With organisational rejuvenation, the firm itself is the focus of corporate entrepreneurship. This is in absolute contrast to strategic renewal’s intention of positively mediating the ‘organisational-environment interface’ (Covin and Miles, 1999; Dess et al., 2003). At its best, corporate entrepreneurship as strategic renewal enables the organisation to more profitably exploit product-market opportunities (Dess et al., 2003).
4 **Domain redefinition:** Through domain redefinition, the firm proactively seeks to develop a new product market position that competitors have not recognised. Here, the focus is on exploring for what is possible rather than exploiting what is currently available. The commitment to reenergise the organisation by redefining its domain is also intended to establish first mover advantages. As the first firm to sell an offering in new product category, the firm redefining its domain is proactive and shows strong entrepreneurial orientation (Covin and Miles, 1999; Dess et al., 2003).

For any firm to sustain success, it must engage in some form of entrepreneurial activity in order to continue to effectively compete in the marketplace and continue to increase stakeholder value (Zimmerman, 2010).

Under the evolving economic environment, corporate managers have realised that there are opportunities to explore and many lessons that can be learned from the experiences of entrepreneurial firms. Corporate entrepreneurship can leverage an organisation's financial resources, market knowledge, and managerial expertise to introduce a new improved product, features, or process to market because of its access to the organisation's market and industry (Edralin, 2010). According to Srivastava and Agrawal (2010), inculcating an entrepreneurial philosophy in firms result in several benefits, including the development in the size and diversity of the product and service range, and helping the firm to expand and grow.

Corporate entrepreneurship manifests through new business creation in the active organisation, through renewal, change and development of current organisations, through breaking and changing of established rules inside or outside organisation (Duobiene, 2008). It represents an attitudinal and behavioural orientation that should pervade all aspects of a firm (Aktan and Bulut, 2008).

Thus, the importance of entrepreneurship in the survival and growth of the manufacturing sector cannot be overemphasised. Indeed, empirical evidence provides support for the view that policymakers should promote the positioning of business excellence of manufacturing firms as a function of the entrepreneurial capability (Silva et al., 2008).

### 2.2 Planning flexibility

Dealing with flexibility and change has been an area of growing interest as a large number of organisations are faced with turbulence (Gupta, 2011). Flexibility is an issue widely studied in the manufacturing literature. It is taking prominence as a result of the uncertainties and disruption created in the production processes of firms (Lagoudis et al., 2010).

In many firms at the present time, the sustainable competitive advantage is achieved with strategic agility and flexibility (Kylaheiko et al., 2008). Quite a lot of firms are finding it difficult to depend on the well-codified but rigid rules, routines, and structures that have the key features of the model of bureaucracy and formal organisation in the past. The great strength of 'going by the rules' has been predictability, control, and fairness. In recent times, however, firms are increasingly required to respond flexibly to diverse needs of employees, customers, other stakeholders (that is, those who have a 'stake' in the survival and success of the firm, including shareholders and local
communities), in ways that enable a variety of responses without causing serious accusation of injustice and unfairness (Oghojafor et al., 2010; Ancona et al., 2005).

Firms that seek to survive and prosper, particularly in rapidly changing and turbulent environments are required to have a flexible and responsive planning system in place (Chakravarthy, 1996). According to Hanna et al. (2010), one way of planning for adequate response is to engage in a strategic planning process that increases organisational flexibility. The key competitive driver for many firms is, fundamentally, a flexible planning approach to cope successfully with foreseeable and unforeseeable developments in the external environment. Flexible planning is concerned with strategic plans that are changeable, adaptive, and responsible, and the firm’s ability to change them when necessary (Alpkan et al., 2007). Planning flexibility is the capacity of a firm’s strategic plan to change as environmental opportunities and threats evolve (Li et al., 2006). Without any managerial effort or action to ensure survival via flexibility and adaptation, rigidity in planning may result into disasters in the long-run (Oghojafor et al., 2010; Bhalla et al., 2006).

Although, there could be various kinds of negative forces which would inhibit flexibility, these inhibitors need to be identified and managed. In order to enhance the flexibility, firms may look for various alternatives by way of policies, practices and actions (More et al., 2008). Thus, a flexible planning system is highly imperative for a firm’s growth and success.

2.3 Relationship between Planning flexibility and corporate entrepreneurship

As a result of the frequency of change that occurs in the environments, firms need to adopt a flexible approach to planning to become entrepreneurial and maximise their performance. Planning flexibility is the capacity of a firm’s strategic plan to change as environmental opportunities and threats evolve (Li et al., 2006). Flexible planning creates room for creativity, innovativeness and proactiveness. Thus, it facilitates a high level of corporate entrepreneurship (Barringer and Bluedorn, 1999).

In contrast, excessive focus on flexibility may have several negative effects including increased costs, increased stress on employees, and lack of organisational focus (Das and Elango, 1995). In the view of Barringer and Bluedorn (1999), planning flexibility may undermine the effectiveness of conservative firms. This is because conservative firms are not innovative but typically seek to gain a competitive advantage through reliability in executing repetitive transaction and routine activity. In this situation, a flexible planning system runs the risk of disrupting rather than facilitating a firm’s business activities (Barringer and Bluedorn, 1999), and may thereby become counter-productive (Oghojafor et al., 2010) by inhibiting entrepreneurship rather than promoting it. Hence, the following hypotheses are proposed:

H01 There is no significant relationship between planning flexibility and corporate entrepreneurship.

H02 Planning flexibility has no significant impact on corporate entrepreneurship.

H03 There is no significant difference between the entrepreneurship of firms whose planning flexibility are low and those whose planning flexibility are high.
3 Methodology

To investigate the relationships that exist between planning flexibility and corporate entrepreneurship in Nigeria, a cross-sectional survey design was employed by collecting data from a defined population. The use of survey research method is justified because it follows a correlational research strategy and helps in predicting behaviour (Bordens and Abbott, 2002). It also helps to determine whether or not a relationship exists between the variables of study (Kerlinger, 1973). Responses were sought from manufacturing firms on a wide range of issues relating to planning flexibility and corporate entrepreneurship.

The population of this study comprised manufacturing firms in Nigeria. Since 55.2% of Nigeria’s 2250 manufacturing firms are based in Lagos state (MAN, 1994, 2003), Lagos was therefore considered a good representation of manufacturing firms in Nigeria. Hence the population sample was taken from Lagos state.

The questionnaire was administered on manufacturing firms in Lagos state with the help of field research assistants. Manufacturing firms in Lagos state constitute the sample frame which is a representative subset of the population from which the sample was drawn. A top manager or chief executive of every selected firm was approached and persuaded to fill the questionnaire. These individuals were pleaded with to see the relevance of the study to their organisation. The manufacturing firms which did not participate were apathetic and unwilling to divulge information. Some adduced reasons such as management policy and suspicion to justify their lack of cooperation.

A simple random sampling technique was used in selecting the participating manufacturing firms. A total of 740 copies of the questionnaire were administered on the manufacturing firms but 670 were completed and returned. This represents 90.54% response rate. According to Saunders et al. (2003), sampling is a part of the entire population carefully selected to represent that population. Random sampling is a strategy of choice for learning an unknown function in a given class of functions (Grochenig et al., 2010). The justification for using random sampling technique is it uses the principle of ‘randomisation’ which is a procedure of giving every subject in a population an equal chance of appearing in the selection (Asika, 1991). Another justification is that it eliminates the possibility that the sample is biased by the preference of the individual selecting the sample (Bordens and Abbott, 2002). Another justification is that it is particularly necessary when one wants to apply research findings directly to a population (Mook, 1983).

The participating manufacturing firms constituted the units of analysis. The administration of the questionnaire was done on one top manager or chief executive at each firm surveyed. The use of primary data method is justified because according to Bain (1995 in Cowton, 1998), it is the quickest and simplest of the tools to use, if publication is the aim.

4 Empirical results

4.1 Variables and measures

4.1.1 Planning flexibility

Nine items using a five-point Likert scale adapted from Barringer and Bluedorn (1999) was used in this study. The scale ranging from ‘very difficult to not difficult’ was used to
assess the difficulties of changing the firms’ strategic plans according to relevant environments. Respondents’ rating on all the items were summed up and averaged to obtain the mean index of firms’ planning flexibility. Planning Flexibility index is classified high when the index is equal to or greater than 4.0 and low when it is lower than 4.0. An alpha score of 0.89 suggests that good reliability is associated with this scale.

4.1.2 Corporate entrepreneurship

A five-point Likert scale of fifteen items was adapted from Miller (1983), Morris and Kuratko (2002) and Ireland, Kuratko and Morris (2006). The scale ranging from ‘strongly disagree to strongly agree’, and ‘significantly less to significantly more’ was applied to measure a firm’s tendency towards innovation, risk-taking and proactiveness. The scores on the fifteen items were summed up and averaged to determine an index of entrepreneurship. An index of less than 4.0 was considered as low entrepreneurship while an index of 4.0 and above was considered as high entrepreneurship. The scale had a reliability score of 0.89 (Cronbach’s α).

4.2 Analytical tools and hypotheses tests and results

To derive useful meaning from the data, and examine the propositions of this study, data from the survey were analysed using statistical package for social sciences (SPSS) as well as the following descriptive and inferential statistical techniques:

Descriptive statistics such as mean, percentages and frequencies were employed in the study to measure demographic characteristics of respondents, to answer research questions relating to planning flexibility and corporate entrepreneurship. They are not meant to test a formal research hypothesis, but rather the summaries from a sample that characterise that sample (Simon, 2002). According to Kerlinger (1973), studying sets of numbers as they are is cumbersome; thus, it is necessary to reduce the sets in two ways: calculating the averages and calculating the measures of variability.

Pearson’s product-moment correlation was used to examine the existence of relationship between planning flexibility and corporate entrepreneurship. Pearson’s product moment correlation coefficient is a parametric test that assumes normal distribution of data comprising interval or ratio variables, among other parameters (Field, 2000).

Regression analysis was used to ascertain the amount of variations in the dependent variable (corporate entrepreneurship) which can be associated with changes in the value of the independent or predictor variable (planning flexibility) in the absence of other variables.

Z-test (approximated with the independent sample t-test in the SPSS package) was employed to test the hypothesised relationship as stated in null Hypothesis 3. Since the data were collected on a rating scale which is ‘presumed to be interval scale’, this parametric test is considered appropriate (Emory and Cooper, 1991). Also, going by the central limit theorem, “for sufficiently large samples (n = 30), the sample mean will be distributed around the population mean approximately in a normal distribution. Even if the population is not normally distributed, the distribution of sample mean will be normal if there is a large enough set of samples” (Cooper and Schindler, 2001). Since the sample size for this study is large (n = 670), the use of this statistic is justified.
The demographic profile of respondents in Table 1 reveals that majority of the respondents were males, constituting 86% of all the respondents. Respondents who were 30 but less than 60 years old make up 89.9% of the entire respondents. Those who were less than 30 years old constitute only 8.4%, while 60 years and above constitute an insignificant proportion (1.8%) of the entire respondents. Majority of the respondents sampled were married and they constitute 80.1%, while 17.9% were single. The divorced, widower and widow make up only 1.9%. Also, in terms of educational qualification, majority (46%) of them were masters’ degree holders. Respondents who were holders of bachelor’s degree or equivalent constitute 32.4% while those who had professional qualifications make up 21%. Doctoral degree holders constitute the least (0.6%) of all the educational qualifications.

Table 1  Demographic profile of respondents

<table>
<thead>
<tr>
<th>Sex</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>576</td>
<td>86.0</td>
</tr>
<tr>
<td>Female</td>
<td>94</td>
<td>14.0</td>
</tr>
<tr>
<td>Total</td>
<td>670</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age (in years)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30</td>
<td>56</td>
<td>8.4</td>
</tr>
<tr>
<td>30 but less than 40</td>
<td>146</td>
<td>21.8</td>
</tr>
<tr>
<td>40 but less than 50</td>
<td>200</td>
<td>29.9</td>
</tr>
<tr>
<td>50 but less than 60</td>
<td>256</td>
<td>38.2</td>
</tr>
<tr>
<td>60 and above</td>
<td>12</td>
<td>1.8</td>
</tr>
<tr>
<td>Total</td>
<td>670</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>120</td>
<td>17.9</td>
</tr>
<tr>
<td>Married</td>
<td>537</td>
<td>80.1</td>
</tr>
<tr>
<td>Divorced</td>
<td>5</td>
<td>0.7</td>
</tr>
<tr>
<td>Widower</td>
<td>2</td>
<td>0.3</td>
</tr>
<tr>
<td>Widow</td>
<td>6</td>
<td>0.9</td>
</tr>
<tr>
<td>Total</td>
<td>670</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational qualification</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s degree or equivalent</td>
<td>217</td>
<td>32.4</td>
</tr>
<tr>
<td>Masters’ degree</td>
<td>308</td>
<td>46.0</td>
</tr>
<tr>
<td>Doctoral degree</td>
<td>4</td>
<td>0.6</td>
</tr>
<tr>
<td>Professional qualification</td>
<td>141</td>
<td>21.0</td>
</tr>
<tr>
<td>Total</td>
<td>670</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 2 shows the demographic profile of firms. This reveals that the number of firms with workforce that is less than 50 employees constitute the highest (17.9%), while those with above 350 employees are the lowest (11%).
Table 2 Demographic profile of firms

<table>
<thead>
<tr>
<th>Number of employees</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fewer than 50</td>
<td>120</td>
<td>17.9</td>
</tr>
<tr>
<td>50-100</td>
<td>110</td>
<td>16.4</td>
</tr>
<tr>
<td>101-150</td>
<td>102</td>
<td>15.2</td>
</tr>
<tr>
<td>151-200</td>
<td>98</td>
<td>14.6</td>
</tr>
<tr>
<td>201-250</td>
<td>89</td>
<td>13.3</td>
</tr>
<tr>
<td>251-350</td>
<td>77</td>
<td>11.5</td>
</tr>
<tr>
<td>Above 350</td>
<td>74</td>
<td>11.0</td>
</tr>
<tr>
<td>Total</td>
<td>670</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age of organisation (in years)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5</td>
<td>16</td>
<td>2.4</td>
</tr>
<tr>
<td>5 but less than 20</td>
<td>198</td>
<td>29.6</td>
</tr>
<tr>
<td>20 but less than 30</td>
<td>206</td>
<td>30.7</td>
</tr>
<tr>
<td>30 years and above</td>
<td>250</td>
<td>37.3</td>
</tr>
<tr>
<td>Total</td>
<td>670</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In terms of the age of the firms, those who are 30 years and above constitute the highest (37.3%). Organisations that are less than five years old constitute only 2.4% of the entire participating firms.

4.2.1 Mean indices, correlation coefficient, regression analysis and independent samples test

Table 3 and Table 4 indicate the mean indices of planning flexibility and corporate entrepreneurship respectively. Concerning planning flexibility, the mean index of participating firms was 4.10. This implies the possibility of firms being critical about adapting to changes in the forces of the business environment. On other hand, the mean index of participating firms concerning corporate entrepreneurship was 3.79. This implies that the firms were probably conservative. That is, unwilling to be proactive, innovative and involved in risk-taking.

Hypothesis (\(H_01\)) was tested through correlations coefficients test. Pearson’s product moment correlations coefficient (0.722**) indicates that planning flexibility and corporate entrepreneurship are significantly and positively correlated with each other at 0.01 level of significance. Therefore, the null hypothesis of no significant relationship is rejected. Thus, there is a significant relationship between planning flexibility and corporate entrepreneurship.

Hypothesis (\(H_02\)) was tested by means of a Regression Analysis. The results of the regression analysis of the relationship between planning flexibility and corporate entrepreneurship are shown in Table 5. Table 5 shows that the analysis of variance of the fitted regression equation is significant with F value of 985.613. This is an indication that the model is a good one. Since the p-value is less than 0.05, it shows a statistically significant relationship between the variables at 95% confidence level. Therefore, the null hypothesis of no significant impact is rejected. Thus, planning flexibility has a significant impact on corporate entrepreneurship.
### Table 3  Mean index of planning flexibility

<table>
<thead>
<tr>
<th>Planning flexibility</th>
<th>Frequency</th>
<th>Average weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>The emergence of a new technology</td>
<td>670</td>
<td>4.21</td>
</tr>
<tr>
<td>Shifts in economic conditions</td>
<td>670</td>
<td>4.29</td>
</tr>
<tr>
<td>The market entry of new competitors</td>
<td>670</td>
<td>3.72</td>
</tr>
<tr>
<td>Changes in government regulations</td>
<td>670</td>
<td>4.17</td>
</tr>
<tr>
<td>Shifts in customer needs and preferences</td>
<td>670</td>
<td>3.83</td>
</tr>
<tr>
<td>Modifications in supplier strategies</td>
<td>670</td>
<td>4.07</td>
</tr>
<tr>
<td>The emergence of an unexpected opportunity</td>
<td>670</td>
<td>4.48</td>
</tr>
<tr>
<td>The emergence of an unexpected threat</td>
<td>670</td>
<td>4.15</td>
</tr>
<tr>
<td>Political developments that affect your industry</td>
<td>670</td>
<td>3.99</td>
</tr>
<tr>
<td><strong>Mean of means</strong></td>
<td></td>
<td>4.10</td>
</tr>
</tbody>
</table>

### Table 4  Mean index of corporate entrepreneurship

<table>
<thead>
<tr>
<th>Corporate entrepreneurship indicators</th>
<th>Frequency</th>
<th>Average weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>High rate of new product/service introduction, compared to competitors</td>
<td>670</td>
<td>3.72</td>
</tr>
<tr>
<td>Emphasis on continuous improvement in methods of production and/or service delivery</td>
<td>670</td>
<td>4.17</td>
</tr>
<tr>
<td>Risk-taking by key executives in seizing and exploring growth opportunities</td>
<td>670</td>
<td>3.83</td>
</tr>
<tr>
<td>A very competitive ‘undo-the-competitor’ posture</td>
<td>670</td>
<td>3.53</td>
</tr>
<tr>
<td>Seeking of unusual, novel solutions by senior executives to problems, via the use of ‘idea people’</td>
<td>670</td>
<td>3.39</td>
</tr>
<tr>
<td>A strong emphasis on R&amp;D, technological leadership, and innovation;</td>
<td>670</td>
<td>3.85</td>
</tr>
<tr>
<td>A bold, aggressive posture, in order to maximise the probability of exploiting potential when faced with uncertainty</td>
<td>670</td>
<td>3.75</td>
</tr>
<tr>
<td>Active search for big opportunities</td>
<td>670</td>
<td>4.12</td>
</tr>
<tr>
<td>Rapid growth as the dominant goal</td>
<td>670</td>
<td>3.90</td>
</tr>
<tr>
<td>Large, bold decisions, despite uncertainties of the outcome</td>
<td>670</td>
<td>3.53</td>
</tr>
<tr>
<td>Steady growth and stability as primary concerns</td>
<td>670</td>
<td>4.23</td>
</tr>
<tr>
<td>Number of new products introduced during the past five years</td>
<td>670</td>
<td>3.72</td>
</tr>
<tr>
<td>Number of product improvement or revisions introduced during the past five years</td>
<td>670</td>
<td>3.82</td>
</tr>
<tr>
<td>Comparison of new product introductions with those of major competitors</td>
<td>670</td>
<td>3.54</td>
</tr>
<tr>
<td>Level of significance of new methods or operational processes implemented during the past five years</td>
<td>670</td>
<td>3.81</td>
</tr>
<tr>
<td><strong>Mean of means</strong></td>
<td></td>
<td>3.79</td>
</tr>
</tbody>
</table>
Table 5  Regression analysis of planning flexibility and corporate entrepreneurship

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square</th>
<th>Adjusted R square</th>
<th>Std. error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.772</td>
<td>.596</td>
<td>.595</td>
<td>6.512</td>
</tr>
</tbody>
</table>

ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>41,800.392</td>
<td>41,800.392</td>
<td>985.613</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>28,330.235</td>
<td>668</td>
<td>42.411</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>70,130.627</td>
<td>669</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised coefficients</th>
<th>Standardised coefficients</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. error</td>
<td>Beta</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-1.305</td>
<td>1.871</td>
<td>-.698</td>
</tr>
<tr>
<td>CORPORATE</td>
<td>1.577</td>
<td>.050</td>
<td>.772</td>
</tr>
</tbody>
</table>

Notes: Dependent variable: corporate entrepreneurship  
\( p < 0.05 \)

Table 6  Independent samples test on entrepreneurship of firms that are high in planning flexibility and those that are low in planning flexibility

<table>
<thead>
<tr>
<th>Planning flexibility</th>
<th>N</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>Std. error mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate entrepreneurship index</td>
<td>LOW</td>
<td>178</td>
<td>3.10</td>
<td>.88117</td>
</tr>
<tr>
<td></td>
<td>HIGH</td>
<td>492</td>
<td>4.04</td>
<td>.34415</td>
</tr>
</tbody>
</table>

Independent samples test

<table>
<thead>
<tr>
<th>T</th>
<th>Df</th>
<th>Sig. (two-tailed)</th>
<th>Mean difference</th>
<th>95% confidence interval of the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate entrepreneurship index</td>
<td>-19.966</td>
<td>668</td>
<td>.000</td>
<td>-1.03792</td>
</tr>
</tbody>
</table>

The \( R^2 \) statistic in Table 5 indicates that the model as fitted explains 59.6% of the total variability in corporate entrepreneurship. In other words, 59.6% of the total variability in corporate entrepreneurship can be explained by planning flexibility. The value of \( R^2 = 0.596 \) shows that planning flexibility can be considered as a good predictor of corporate entrepreneurship.

The standardised coefficients (Beta) value in Table 5 reveals that the independent variable is statistically significant at 0.05 significant levels.
Hypothesis (H02) was tested using Independent Samples Test. The results of the independent sample t-test as revealed in Table 6 show that entrepreneurship mean index (4.04) of firms with high planning flexibility is different from the entrepreneurship mean index (3.10) of firms with low planning flexibility. This difference between the two mean was found to be statistically significant at $p < .05$ (Table 6). Therefore, the null hypothesis of no significant difference is rejected. Thus, there is a significant difference between the entrepreneurship of firms whose planning flexibility are high and the entrepreneurship of firms whose planning flexibility are low.

5 Conclusions and implications for management

The central roles of the manufacturing sector in the growth and development of any economy cannot be over emphasised. However, the efficiency and effectiveness of the manufacturing sector in performing these roles is a function of the firms' entrepreneurship. Achieving corporate entrepreneurship to provide much more vivacity in the economy is not something that just emerges. It is among other things, dependent on planning flexibility of the firms.

This appears to be the first comprehensive study of the relationship between planning flexibility and corporate entrepreneurship in the manufacturing sector in Nigeria. Most studies in this area have been on developed economies, thus filling the gap in literature. The findings of the study revealed that on the average, planning flexibility of participating firms was high; this implies the possibility of firms being critical about adapting to changes in the forces of the business environment. The findings also revealed that involvement of participating firms in entrepreneurship was low. This presupposes that the firms were probably conservative. Hence, Firms that want to be competitive must be willing to take planning flexibility seriously so that they can become more entrepreneurial. That is, create value to pursue new solutions to challenges facing them.

The findings of the study indicated a significant relationship between planning flexibility and corporate entrepreneurship. The results also revealed that high planning flexibility firms are more entrepreneurial than low planning flexibility firms.

This research has revealed valuable findings for academicians, researchers and management executives from private to public particularly in developing economies. The findings have some important implications for management of manufacturing firms. It signifies the need for manufacturing firms to exhibit high level of commitment to planning flexibility in order to enhance and promote entrepreneurship. It can also help researchers to better understand the relationship between planning flexibility and corporate entrepreneurship in the manufacturing sector in Nigerian. Thus, if Nigerian manufacturing sector must flourish and develop, among other things, it should be well attuned to the whole process of increased involvement in flexible planning that result in entrepreneurship.

Cognisance should also be taken of the fact that since the performance of manufacturing firms is likely to affect the performance of the economy, the Nigerian government has a role to play. The government of the country needs to provide the legal/political atmosphere, and social infrastructures necessary to facilitate the carrying out of flexible planning activities. This will enable firms to become more entrepreneurial, and take advantage of opportunities and contain threats in the environment as they emerge.
5.1 Limitations and future research direction

The following suggestions for future studies deserve consideration:

Future studies may need to expand to cover the service industry rather than limiting them to the manufacturing sector. Then, generalisation of the findings might be well justified. Second, future study should also consider the analysis of firm size and firm age, and their influence on planning flexibility and corporate entrepreneurship. These might be relevant in making policy decisions for the organisation. Third, examination of the impact of corporate entrepreneurship on planning flexibility might also be considered in future research. Finally, the sample was drawn from Lagos State, Nigeria. This limits the generalisations of the findings. Thus, it is suggested that future research should extend the study to manufacturing firms across the entire country as well as service organisations. Future studies might also consider the effect of entrepreneurship on planning flexibility.

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References


