Manufacturing Business Environment In Nigeria: Strategic Characteristics And Implications

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Abstract

The key question answered in this paper is, what characterises the manufacturing business environment in Nigeria and how are firms and government supposed to react? Based on a sample of manufacturing firms, our findings show that the environment, though complex-changing, is analysable. We offer some explanations for and draw strategic implications from these results. In a large, protected low-income country with a weak propensity to export and low technology sophistication, a largely predictable business environment is to be expected. However, turbulence may arise from intertemporal changes in levels of consumers' real income, which may necessitate technology upgrade to meet increasing demands for better products and variety. Policy interventions that support such upgrading are thus required.

1 Introduction

Strategists and strategic management scholars widely view environmental scanning as the first step in the process linking strategy and environment. Effective scanning of the environment is seen as necessary to the successful alignment of competitive strategies with the environment requirements and the achievement of outstanding performance by organisations [1]. A large and significant body of studies has found strong correlations between environmental scanning and performance of firms. Firms that practised

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environmental scanning tend to outperform the non-scanning ones. In fact, boundary spanning activity - measured by the number of contacts with outside constituencies such as customers, government officials, and trade associations - tends to be strongly related to firm performance.

For instance, [2] compared the economic performance of twenty-eight US corporations that practiced environmental scanning with twenty-two non-practicing corporations and found that the average annual performance of the scanning firms was consistently better throughout the studied period. [3] analysed the performance of eighty-two small firms in the US. He concluded that intensive boundary spanning activity measured by the number of contacts with outside constituencies such as customers, government officials, and trade associations was strongly related to organisations' financial performance. [4] also examined the relationship of organisational strategy and environmental scanning on performance in the US food service industry. The study found that strategy and environmental scanning had a substantial influence on the firms' return on assets and return on sales. High-performing firms in both differentiation and low cost strategies engaged in significantly greater amounts of scanning than low-performing firms in those two strategic groups. [5] study of scanning by chief executives found that executives of high-performing firms (those with higher return on assets) increased the frequency, intensity, and breadth of their scanning as external uncertainty rose. Subramanian and others in their study of scanning and performance in US Fortune 500 companies found support for a relationship between performance measured by profitability and growth, and advanced scanning systems. Firms using advanced systems to monitor external events showed higher growth and profitability than firms that did not have such system [6].

The benefits of scanning are not altogether economic or financial. [7] found that scanning contributes to increased communication among line and staff personnel and greater employee involvement in the decision making process. [8] similarly found scanning to have a positive effect in communication, shared vision, strategic planning and management, and future orientation in organisations. The most significant effect, in his study, was that scanning provided a structured process, which encouraged people to regularly participate in face-to-face discussions on planning issues.

Much of the evidence on the importance of environmental scanning, however, derives from developed countries. This leaves a significant gap in the strategy literature as the implications of studies based on firms in advanced economies may not be fully relevant for firms in less advanced countries. In developing countries where firms face huge resource and institutional constraints, it is especially useful to understand how they view their business environment from a strategic perspective. This will help inform both firm-level strategies and national policy-making. Using data from a first-hand survey of manufacturing firms in Nigeria, this paper presents empirical evidence that describes how firms perceive their strategic environment in a large developing country. We also discuss the implications of the firms' perception for policy and practice.

The rest of the paper is made up of six sections. The next section which describes the empirical context is followed by one that presents a summary of the literature and the hypotheses that were tested. The method adopted for the research is discussed in Section 4, followed with the results in Section 5. Section 6 analyses the results in the light of their implications for policy and the paper concludes in Section 7.

1.1 The Study Context

There are two reasons to examine the environmental perception of firms in Nigeria's manufacturing industry. First, Nigerian firms operate within a highly resource-constrained macro-economic terrain and for this reason manufacturing firms tend to expend a disproportional percentage of their budget on infrastructure. Second, firms' perception of their external environment will influence the frequency, intensity, and breath of their scanning activities as well as the interpretation of trends and events in their environment which feeds into determination of their competitive strategies.

At Nigeria's independence in 1960, manufacturing contribution to Gross Domestic Product (GDP) was 3.8%. Notwithstanding the growing contribution and dominance of the oil sector that began in the 1970s, manufacturing recorded impressive performance and contributed an average of about 9.9% to GDP [9]. From 1975-1981 industrial capacity utilisation was consistently above 70% [10]. By the end of the last decade, however, Nigeria's industrial performance has significantly plummeted. Between 1990 and 2000, total manufacturing value added and manufactured exports declined. Manufacturing contribution to GDP was 4.02% in 2007 [11, 12] and industrial capacity utilisation peaked at 63.6% dropping to annual average of 50.2% over the next ten years [13].

Manufacturing activity can only flourish in a good investment climate replete with favourable physical infrastructure, financial markets, and governance conditions for firms to invest productively, create jobs and expand. The Manufacturers Association of Nigeria (MAN) estimated that 60% of firms in the manufacturing industry are ailing, 30% have closed down while only 10% are operating at a sustainable level [14]. MAN listed the problems of the industry as including high import dependency, weak capital base of manufacturing companies, high cost of fund, multiple taxation, and influx of fake, counterfeit and substandard imported goods. To these, Albaladejo [10] added inappropriate policies, macro-economic instabilities, a distorting business environment, lack of transparent governance and weak industrial capabilities. The implications of this for the national economy include, among others, the loss of manufacturing 'pull effect' on other sectors of the economy, and of opportunity to participate in the global economy by plugging into international value chains.

Given such difficult terrain in which manufacturing companies operate in Nigeria and the necessity to interface with the environment in ways that guarantee long term prosperity, this paper examines companies' perception of their environment and the implications of such perception for competitive strategy. The underlying thesis is that how companies perceive their business environment influences their competitive strategy, which in turn bears directly on the competitiveness and growth of the industry. The study reported herein focuses on Southwestern Nigeria which is the industrial nerve centre of the country and houses a diverse concentration (up to 70%) of companies across all sectors of the manufacturing industry.

2   Background Literature And Hypotheses

The external environment is a major influence on the survival and prosperity of a firm for the reason that it supplies the firm's inputs and creates demand for its outputs. From a strategic management perspective, the external environment consists of the forces outside the typical boundaries of an organisation that influence the performance of an industry

and firms operating within the same industry [15; 16]. Broadly, the external environment can be divided into two categories: the task or domain environment and the remote environment. The task environment encompasses all those constituencies that have direct and immediate impact on managers' decisions and are directly relevant to the achievement of organisational goals [17]. The remote environment on the other hand exerts indirect and long-term impacts on organisations' actions and outcomes. To survive over the long term in a given external environment, an organisation must have two strategic capabilities: the ability to prosper and the ability to change. Prosperity requires not only profitability but also long term growth. This combination of continuing profitability and continual growth is seen as a tough strategic problem for organisations. Change, on the other hand, requires an ability to anticipate the dynamics of the external environment in which an organisation operates and to alter its strategic direction.

Environments differ by their degree of uncertainty. An environment's degree of uncertainty is a measure of how well managers can understand or predict the external changes and trends affecting their businesses. Two dimensions determine the degree of environmental uncertainty: degree of complexity and degree of change. [18] proposed a two-dimensional model for classifying environmental uncertainty. The simple-to-complex dimension centres on whether the factors in the environment considered for decision making are few and similar or many and different; the stable-to-changing dimension of the environment is concerned with whether the factors of the environment remain the same over time or are changing (Figure 1).
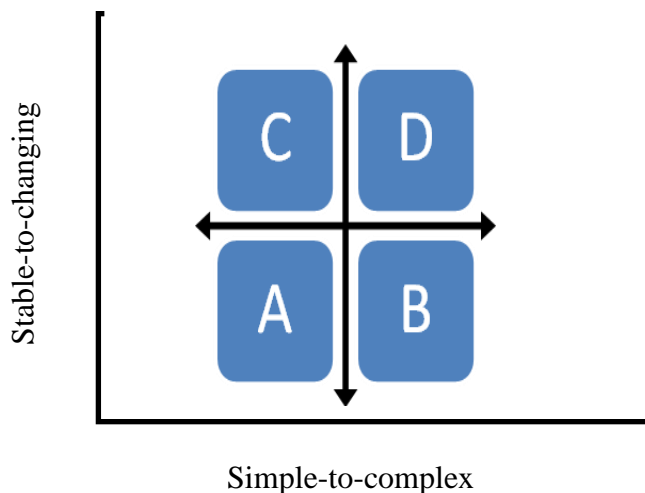

Simple-to-complex

Figure 1: Two-dimensional model of environmental uncertainty

When these two dimensions are combined, four basic types of environments having a direct and immediate impact on achievement of organisational goals emerge representing increasing levels of uncertainty (see figure 1). At one extreme is the simple-stable environment (Quadrant A) characterised by few components that are somewhat similar and remain basically the same, and with no new technological breakthrough influencing the organisation. This environment represents the lowest level of environmental uncertainty. Managers' influence on organisational outcomes is greatest in a simple-stable environment.   At the other extreme is the complex-changing environment (Quadrant D). Here, components are numerous, are not similar to each other, and are continually

changing. The simple-changing (Quadrant C) and complex-stable (Quadrant B) environments fall between the two extremes. The turbulent complex-changing environment of highest uncertainty is the most common organisational environment within which most firms are compelled to operate [18]. Given the high resource constraints in the Nigerian manufacturing environment, one may expect firms to face lots of shocks and instabilities. Thus:

H_1:   Manufacturing companies in Southwestern Nigeria operate in a complex-changing environment.

[19] developed a general model of organisational scanning based on the two dimensions of environmental analysability and organisational intrusiveness. In effect, events and processes in an organisation's external environment, regardless of the complexity, could be analysable or un-analysable. Within this context, we hypothesise that:

H_2:   The environment of manufacturing companies in Southwestern Nigeria is analysable. When the two dimensions of uncertainty and analysability are combined, then it can be hypothesised that

H_3:   The environment of manufacturing companies in Southwestern Nigeria is complex-changing but analysable.

Managers perceive uncertainty of the environment when they do not feel confident that they understand the major events or trends happening in the external environment, or when they feel unable to accurately assign probabilities to the likelihood that particular events and/or changes will occur [20]. An organisation that believes its environment is analysable, in which case events and processes are determinable and measurable, might seek to find out the 'correct' interpretation through systematic information gathering and analysis. Conversely, an organisation that perceives its environment is un-analysable might construct or enact what it believes to be a reasonable interpretation that can explain past behaviour and suggest future actions. Generally, strategies aimed at reducing environmental uncertainty can be categorised into two as internal and external strategies. Internal strategies express actions that an organisation can take to better its environment and thus lessen the impact of the environment on the organisation's outcomes. External strategies are developed to essentially change the environment to make it more favourable for an organisation [21]. Influences on perceptions of environmental analysability are due to characteristics of the environment combined with management's previous interpretation experience. Differences in organisational intrusiveness, therefore, are due to the degree of conflict between the organisation and its environment. [22] further postulated that analysability would be closely related to the concept of perceived environmental uncertainty. Perceived environmental uncertainty is the variable that measures the totality of the external environment's complexity and changeability from the organisation's viewpoint. Considering these, we hypothesise that:

H_4:   There are no size, ownership, sector, or market orientation related differences in perception about the degree of environmental uncertainty among manufacturing companies in Southwestern Nigeria.

H_5:   There are no size, ownership, sector, or market orientation related differences in perception about the degree of environmental analysability among manufacturing companies in Southwestern Nigeria.

2.1 Research methodology

This paper is based on a sample of eighty-four manufacturing companies in Southwestern Nigeria drawn on the four dimensions of size (small, medium and large scale); ownership structure (wholly foreign, wholly local, combined local and foreign); market orientation (domestic or export market focused); and sector of industry. The sample consisted of thirteen large scale, fifty-four medium and seventeen small scale companies drawn from six sectors: automobile and tyre; food, beverage and tobacco; pharmaceutical, chemical and paints; breweries; building materials; and industrial and domestic goods. A questionnaire was administered to gather information on the firms' perception of their business environment.

The hypotheses set about perceived environmental uncertainty and analysability (H_1 and H_2) were tested over the entire sample using the Z-test of proportions. The Z-test of proportions is a test statistic used in evaluating the magnitude of the difference between a hypothesised population proportion (P) and a sample proportion (p) so that a decision pertaining to a stated hypothesis can be made [23]. The z statistic is approximately normally distributed. For the null hypothesis to be accepted it is required that at least 50% of the population must agree to the hypothesis as formulated, otherwise the null hypothesis is rejected.   A higher population percentage of more than 0.50 as a benchmark for testing the hypotheses may result in the risk of concluding, for instance, that the environment is un-analysable when it may actually be analysable. The design of the research was to capture a wide variety of companies in the industry. A benchmark of 0.50 will allow the research to accommodate the perception of the various extremes of the industry as given by the dimensional analysis. The hypothesis:

H_0: p ≥ 0.50
H_1: p < 0.50

was tested for the null hypotheses H_1 to H_5.

The Kruskal-Wallis test of no difference was used to also test the null hypotheses to the effect that there are no differences in perception about environmental uncertainty and analysability within population groups based on the four dimensions of company size, ownership structure, industry sector and market orientation (H_3 and H_4). The Kruskal-Wallis test is a nonparametric test used to compare three or more samples. It is used to test the null hypothesis that all populations have identical distribution functions against the alternative hypothesis that at least two of the samples differ only with respect to location (median), if at all. It is the analogue to the F-test used in analysis of variance.   The results of the tests were used to reach conclusions as to the degree of uncertainty and analysability of the business environment. All tests were carried out at 5% level of significance.

3   Main Results

73% of the companies classified the environment as complex-changing, 20% classified the environment as simple-changing while 4% and 3% of the companies classified the environment as complex-stable and simple-stable respectively (Figure 2). The hypothesis that the environment is complex but changing (H_1) was accepted based on these figures. The sample value (0.73) representing the percentage in the sample that perceived the environment as complex-changing fell within the acceptance region to conclude that the

environment of manufacturing companies in Southwestern Nigeria is complex-changing (Table 1). Testing for differences in the perception expressed by the proportion in each population group that the environment is complex-changing. The hypothesis that the environment is complex-changing was accepted for each population group (see Table 1).
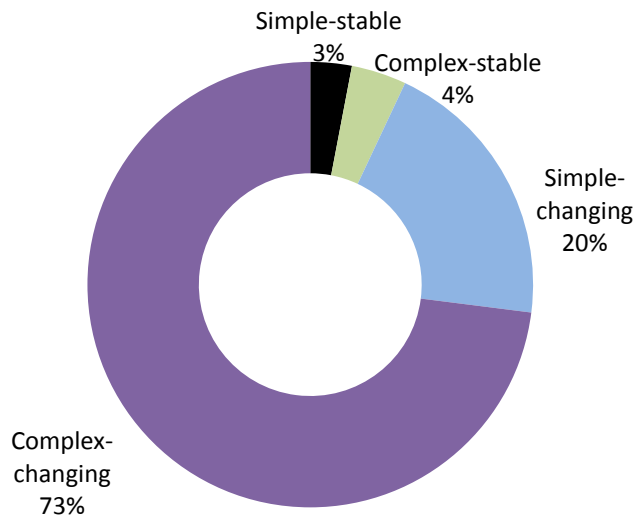

Figure 2: Perceived environmental uncertainty by companies

Thus, the perception expressed by 73% of aggregate respondents that the environment is complex-changing is statistically significant without discrimination as to size, ownership structure, sector and market orientation of the companies.

Table 1: Z - test of proportion on the degree of environmental uncertainty

Population group	Critical value (P_0)	Sample value	Decision
Aggregate	0.41	0.73	Accept H_1
Scale	0.41	0.74	Accept H_1
Ownership Structure	0.41	0.74	Accept H_1
Market Orientation	0.40	0.74	Accept H_1
Industry Sector	0.41	0.75	Accept H_1

Table 2: Z - test of proportions that the environment is analysable

Population group	Critical value	Sample value	Decision
Aggregate Response	0.41	0.94	
Scale	0.41	0.94	Accept H_2
Ownership Structure	0.41	0.93	Accept H_2
Market Orientation	0.40	0.93	Accept H_2
Industry Sector	0.41	0.93	Accept H_2
Perceivers of environment as complex-changing	0.41	0.95	Accept H_3

On the analysability of events in the environment, 94% of respondents perceived that events in the environment are determinable and measurable (analysable). The other 6% regarded events in the environment as indeterminate and not measurable (un-analysable). The sample value (0.94) representing the percentage in the sample that perceived the environment as analysable fell within the acceptance region to conclude that the environment of manufacturing companies in Southwestern Nigeria is analysable (Table 2). The Z-test of proportions was used to check for differences in the perception expressed by the proportion in each population group based on the four dimensions of the industry that the environment is analysable. The results, shown in Table 2, confirmed the conclusion that the environment is analysable and H_2 was accepted. The final test conducted on the determination of the analysability of the environment cross-tabulated perceived degree of environmental uncertainty and perceived analysability. About 95% of companies that perceived the environment as complex-changing also classified the environment as analysable. This result, shown in the last row of Table 2, leads us to accept H_3 that the environment though complex-changing is analysable.

Table 3 summarises the Kruskal-Wallis tests to the effect that there are no differences in perception about perceived degree of environmental uncertainty within each of the population groups based on the four dimensions of scale, ownership structure, market orientation, and industry sector. The summary shows that there is no statistically significant difference in perception about the degree of environmental uncertainty within each population group except for the group based on ownership structure. H_4 was thus partially accepted. A bias is noted to be introduced into organisational perception of the operating environment by the structure of ownership.

Table 3: Kruskal-Wallis tests of no difference within population groups in perceived environmental uncertainty

Population group	Value	P- value	Decision
Scale of Operation	4.763	0.092	Accept H_4
Ownership Structure	9.236	0.010	Reject H_4
Market Orientation	3.635	0.304	Accept H_4
Industry Sector	5.712	0.222	Accept H_4

Table 4 contains the results of tests on perceptions about environmental analysability. As the table shows, there is no statistically significant difference in perception about environmental analysability within each of the population groups. The proportion within each population group that perceived the environment as analysable is significant enough to accept that the environment is analysable.

Table 4: Kruskal-Wallis tests of no difference within population groups in perceived environmental analysability

Population group	P- value	Decision
Ownership Structure	0.842	Accept H_5
Market Orientation	0.913	Accept H_5
Industry Sector	0.916	Accept H_5

3.1 Discussion of Results and Implications for Strategy and Policy

Following Choo [24], the combined effect of a perceived high complexity and changeability of the environment is the perception that the environment is un-analysable. However, our results point to the contrary. Manufacturing companies in Southwestern Nigeria generally perceive themselves as operating in a complex-changing but analysable environment. This remained consistently so even when the size, market and sector of firm's activity are taken into consideration. The structure of ownership did make some difference, however. The presence of foreign resources in a firm seems to mediate between it and the environment such that the environment becomes less unpredictable.

The foregoing can be adduced to two main factors. First, within the resource-constrained macro-economic terrain of Nigeria, the manufacturing firms are largely inward oriented. Much of the little outward orientation that presently exists is conditioned by foreign presence. We really found this to be so, as about 45% of our sample sells part of their output in foreign markets, 61% of these being medium-scale. While medium scale companies showed greater propensity to export than large scale companies; outward orientation was found to be higher in companies with foreign ownership participation than in companies wholly owned by Nigerians. In all, outputs of about 55% of the companies were produced for the local market only and exports from the medium scale companies were too minute to influence the perception of the analysability of the environment. Secondly, the manufacturing industry in Nigeria is relatively unsophisticated, focusing largely on low technology products for a very large domestic market. With low industrial capacity geared mainly to domestic market, important environmental forces such as technology, requirements of foreign markets, and global economic issues do not really factor significantly into decision making. This characteristic of the environment makes it less turbulent, even though components in the environment may be increasing and companies becoming increasingly more dynamic in behaviour.

Expansion into international markets is expected to induce more dynamic behaviour in industries as the business environment becomes increasingly more complex. Export orientation has received and continues to receive considerable policy incentives from the government of Nigeria. Notwithstanding the incentive framework, manufacturing export performance has been anything but encouraging. We examine through the literature the

reasons for this disappointing export performance in explaining a complex-changing but analysable environment.

Three major forces, among others, have been identified in the literature as providing imperatives for expansion into foreign markets: moderate or slow domestic market growth with strong, unsaturated or growing markets abroad; competitive pressure in the domestic market reducing prices and margins; and competitors leveraging their profitability in foreign markets to increase their market share in the domestic market. The large domestic market facing manufacturing companies in Nigeria provide no compelling pressure to compel companies seek export markets. In addition, competitors exert no strong influence on the environment arising from any significant exports advantage. Opportunities such as higher international prices for manufactured goods and relatively low domestic labour costs are not attractive to the companies to induce strong exports drive. Rather, as real per capita income grows the domestic market increases in size and scope providing additional drive for local market expansion. Within this context, the current environmental perception and the competitive strategy of firms fostered by a large and growing domestic market will not change unless companies are forced to expand into foreign markets as they near their full potential in the local market or the local market saturates.

The policy direction followed by government to engender and deepen industrialisation contributes to the emergence of a complex-changing but analysable manufacturing environment. As part of government efforts to attract foreign investments and to drive outward orientation, some priority areas of industrial investment were favoured in the administration of government industrial incentives. The emphasis in identifying the priority areas and the accompanying incentive framework was to target industries that are intensive in the use of the nation's abundant agricultural resources at two levels: processing of agro resources into intermediate and consumer goods, and creation of a vibrant sector that provides the machinery, tools and base chemicals supports for processing agro resources into intermediate and consumer goods. The industries focused are those in which income elasticity of demand is highest especially in a large growing developing country. These industries are largely found in foods, beverages, pharmaceutical and related areas and they presently dominate the manufacturing industry.

The significance of the above for the environment is examined here. As real income increases, consumers spend more on the output of these industries and the market expands both in size and in scope. Companies respond to increase in market size by expanding production capacity for existing products and introducing new products to cater for emerging higher income brackets. The scope dimension of the market comes to effect with a sustained increase in real income over time and relates to the challenging requirements of consumer demand that can not be met with products and technology currently offered by the industry. Such requirements may include demand for better quality, variety in product offering, speed of delivery, customisation, information services, and product presentation. Beyond a certain threshold of income, the proportion of consumers' increase in income expended on some products declines. Income elasticity of demand now favours another class of products embodying higher level of technology, which may be produced locally or imported. Two scenarios emerge here. First, if the high-technology-embodying products are produced locally, the introduction of new technologies increases the complexity of the environment and lowers its degree of analysability. The environment increasingly becomes complex-changing and less analysable. Second, as consumers' spending shift from low technology traditional manufactures, in the face of low export propensity and gross deficiency of manufacturing supporting infrastructure, industrial capacity utilisation

in companies producing low technology products for the domestic market falls increasing operating costs and companies mortality. The state of the manufacturing industry in Nigeria as given by [11; 12; 13, and 10] fit well into our second scenario and supports the perception of the companies that the manufacturing external environment is Nigeria is complex-changing but analysable as manufacturing remain largely low technology based. It provides evidence also to suggest that high technology embodying manufactures, if produced locally, are too insignificant to exert influence on the perception of the environment.

As our result showed, the manufacturing firms are largely inward oriented and much of the little outward orientation that presently exists is conditioned by foreign presence. Hanson et al [25] analysing the entry strategy of US multinationals has shown that manufacturing FDI does not necessarily guarantee high exports propensity as multinationals tailor their entry strategies to reflect host-country conditions. In larger, more protected, and higher-tax economies, affiliates target most of their sales to the domestic market while export platforms that devote more of their sales to export markets are set up in smaller, less-protected, and lower-tax economies. The various choice of entry modes open to multinationals and sophistication of the accompanying technology thus have implications for the domestic economy including the degree of complexity and analysability of the external environment. Nigeria's investment climate characterised by high cost of funds, multiple taxation, inappropriate policies, macro-economic instabilities, lack of transparent governance, critical infrastructures deficiency, and weak industrial capabilities appears to discourage affiliates set up as export platforms. 'Exports platforms' generally adopts technologies that are suitable for products directed to international markets and reflects back to the domestic economy the requirements of international markets contributing to the dynamism of the environment. A large and growing domestic market operating in a high cost, infrastructure deficient environment leaves multinationals with production orientation directed mostly at the domestic market.

4 Conclusion

A large and growing domestic market like Nigeria offers a good attraction to manufacturing FDI as well as local manufacturing enterprises. In the short term, the degree of uncertainty of the external environment will in part, depend on the number of companies operating in the industry, their market orientation and the technology deployed. In the longer term, however, as the domestic economy grows and more companies enter the industry and existing companies increase in size competition to exploit the vast domestic market intensify. The rising costs of scarce production inputs economists predict will raise the average costs of companies and reducing margin. In this circumstance, competition to gain dominance of the domestic market makes behaviour of companies less predictable and become more strategic. The appropriate strategy will be that of differentiation and/or introduction of new products to exploit new domestic and foreign market opportunities as well as and finding new markets for existing products. Since all new products will eventually become obsolete, companies develop the ability to continually change and evolve beyond existing product life cycle [26]. Given a favourable manufacturing investment climate, Nigeria's manufacturing holds great potential to become highly dynamic creating the necessity for continuous scanning of the environment for new knowledge and incorporating new knowledge into operations. This is the kind of

atmosphere that gives rise to an increasingly complex-changing and un-analysable external environment.

This paper has examined the characteristics of the manufacturing business environment in a major industrial region of a developing economy – Nigeria. We have also discussed the implications of these for strategy and policy. On the strength of evidence provided by the various tests above, it could be concluded that the environment of manufacturing companies in Southwesten Nigeria is complex-changing but analysable. Arising from the research results and discussion, we propose that an organisation's perception of the analysability of the external environment will be influenced by the technology component of its industry's products, size of the domestic market, and the share of export in total sales. A few areas, however, require further exploration. Firms' strategic behaviour in such environments as we have identified herein require deeper understanding. Also, it would be useful to know what specific factors drive firms in what specific strategic directions within complex-changing but analysable business environments. Finally, a longitudinal analysis holds the potential to offer even more insights on the issues addressed in this paper.

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