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ANALYSIS OF THE RELATIONSHIP BETWEEN CONTINGECY FACTORS AND NON-FINANCIAL PERFORMANCE OF LISTED MANUFACTURING FIRMS IN LAGOS, NIGERIA.

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Abstract

The objectives of this study were to examine; the linkage between contingency factors, performance measurement system and non-financial performance and to evaluate how performance measurement system moderate the relationship between contingency factors and non-financial performance among listed manufacturing firms in Lagos, Nigeria. Data were collected through a self- administered survey of 168 respondents from listed manufacturing firms in Lagos, Nigeria, and analysis was carried out using PLS-SEM. The target respondents were accountants, auditors and managers of the sampled firms. The result of hypothesis one showed that contingency factors (external environment, employees training and organisational culture) have significant impact on non-financial performance as indicated by their respective P-Value of less than 5% and hypothesis two showed that performance measurement system significantly moderated the relationship between contingency factor and non-financial performance as shown in the result of the findings as a result of its calculated P values of three (3) out of the five (5), contingency factors showing 0.000> 0.05. Stakeholders of manufacturing firms should ensure that, the non-financial measures are adequately sustained and that organisational strategy cum employees training should be closely monitored for better oriental result.

Keywords: *Performance measurement system, contingency factors, non-financial performance, PLS-SEM.*

1.0 Introduction:

Africa as a continent, blessed with many opportunities for developments and one of the drive to propel these opportunities in Africa is to put in place a matching manufacturing sector that will be widely seen as a path to economic growth. This, however, gave birth to the African Continental Free Trade Area that was launched in 2018 to navigate the path to economic recovery of post-pandemic era. Experts projected that, this sector could hit over 650 billion dollars by 2030 which will be over $200 billion more than it did in 2015 as achieving the continental objectives. (Annor, 2021). Manufacturing sectors in any country play a gingered role in present day economy and has many economic benefits crucial for development and transformation, thus, this sector remaining the only notable sector of most

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countries in the world. Its role cannot be underplayed considering the fact that very few countries have been able to grow her citizen's wealth without investing in the manufacturing sector, as industrialization is usually precipitated by a strong and thriving manufacturing sector which is evidenced globally.

Manufacturing firms today are continually facing both internal and external predicaments that drive them to change due to the world competitive situation. External forces such as environmental uncertainty, competition and environmental dynamism are among the factors that structured the way on how firms handle their businesses (Guanasekaran, Ngai & McGaughey, 2005). The internal forces are; leadership management commitment, internal resources, performance, culture, employees' engagement, organizational culture and performance measurement maturity. As a result of all these, many organisations have re-organized and formed; chain, clusters, networks and strategic alliance to be able to deal with the external and internal predicaments (Burns & Vaivio, 2001). This study viewed that integrating contingency factors into performance measurement system would help organisations to cope with the current business flow or dynamism.

Organisations used a wide range of metrics that have been aggregated over time to meet present business needs. The growing search in performance management has led to an update of accounting fold and by extension to performance at no cost. However, the inefficient evolution of measuring systems leads to a new measurement criteria, with organisations implementing the new metrics to reflect priorities without excluding measures which reflect old priorities and inconsistent measures. It is also not uncommon to find many performance measurement systems sending confusing signals to the organisation.

To monitor business activities, the owners' need to design a yard stick or prototype laid down guides that will make the attainment of its firm success easy through a well-articulated mechanism. This mechanism is referred to as performance measurement system. These are standardized measures or variables to be integrated into business management for its survival in the form of quantifiable metrics that will look beyond the ordinary business control. They are kind of psychological intent into management accounting field. (Mustapha, 2022). Fraser and Ormiston (2013) are of the view that some of the criteria's needed for evaluating company's performances are not readily available in their financial statements, some are hard to find and many are measurable as they are psychological in nature (subjective). This, therefore, call for a new measurement yardstick of subjectivity (non-financial performance measures) that will solve the problems of the traditional technique (financial performance measures). This study intends to address the non-financial measures that are highly necessary as it serves as boaster of motivation and control in an organisation. These includes employees' training, external environment, leadership style, organisational culture and strategy. The essence of introducing such measures is to enable better understanding of business environment. Ahmad and Zabri (2016) see performance measurement system as what helps to toughen firm's effectiveness by providing imperative additional gen that can indirectly reflect the fortes and faintness of operations of the business since performance measurement is viewed outside the box context. This is necessary because the dynamic nature

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of business environment as a result of global technological advancement and competitive nature of products cumulate to reduce product life cycle (Moges & Moges, 2013).

The dynamic nature of business environment today necessitates a purely unbiased and evaluation system to avail Nigerian businesses opportunity to match up with those of the developed world if not at par. Van Looy and Shafagatowa (2016) buttress this candid opinion by seeing performance measurement as what helps in managing the whole chains of procedures, activities and resolutions that will eventually add value to the organisation and its clienteles. Moulin (2012) further adds that an organisational performance measurement helps in analyzing organisations actual performance with the present goals and objectives. Despite the availability and deployment of varied performance measurement system, most business organisations still record low and poor performance. Ivana (2013) is of the supporting view that exigency framework may provide a more all-inclusive approach to the scheme of performance measurement system.

To the extent of literature reviewed, no previous studies empirically examined the relationship among contingency factors, performance measurement system and non-financial performance in a single study on Nigerian manufacturing firms. It is also observed that most of the past studies such as Carol and Mavis (2007); Frank (2008) and Matthew (2009). Who worked in the related area did not look at the regulating effect of performance measurement system on the relationship between contingency factors and non-financial performance. It is apparent that most of the past studies in the related areas employed ordinary least square (OLS) as estimation technique (Yuandi & Jason, 2014 and Ivana,2013), but this study embraces the use of partial least square (PLS) which is specifically designed to meet the need of survey research involving perception and opinions measurement. As PLS is specifically developed for a better and appropriate measurement of latent variables which is the case of this study. It is based on the above submission, and to bond the identified gap in the current literatures that this study investigated the linkage between contingency factors, performance measurement system and non-financial performance and to evaluate how performance measurement system moderate the relationship between contingency factors and non-financial performance among listed manufacturing firms in Lagos, Nigeria.

2. 0 Conceptual Review:

2.1.1 Contingency Variables

Contingency variables are factors that are relevant to situational dynamics in coping with the demand of organisational environment. Previous studies have identified contingency variables that influenced the embracing of performance measurement system and the prime of performance measurement outfits and practices across all business sphere. Ivana (2013) argued that various contingency factors that influence the adoption of performance measurement system in organisational include size, organisational structure, strategy, technology, culture and leadership. The external environment is an important contingent factor which includes a degree of environmental volatility or vagueness, the degree of competition or unfriendliness displayed, and the environmental dynamism or commotion the organisation faces. (Dess & Beard 1984).

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2.1.2 Organisational Strategy

Organisational strategy is said to be a plan that stipulates how business will allocates possessions like fund, labour and inventories to support substructure, production, marketing inventories and other corporate activities. Johnson, Scholes and Whittington (2008) designated organisational strategy as the path and scope of an organisation over the extensive term which help to attain value through its formation of resources within a thought-provoking environment aimed at gathering market needs and to fulfil stakeholders' expectation. Kavale (2012) examined strategy as the elongated term aims and goals determination, the acceptance of course of action and associated allocation of possessions required to achieve goals.

2.1.3 Organisational Culture

Organisational culture is said to be a standard for common values and principles practiced over time in an organisation, and it has begun to be applied to create solutions to problems that arise (Owens, 2013). The internal environment of the organisation is represented by the organisational ethos and is formed by the customs and beliefs of the executives and teams of organisations (Aycan, 1999). Organisational culture is established through the expectations, beliefs, ideals and behaviors of important investors, to gain competitive advantage (Peterof, 2013). Therefore, culture must be taken into account for the effective implementation of the performance measurement system in an organisation.

2.1.4 Leadership Style

Organisational leadership is defined as the characters and procedures that "facilitate scenery direction, creating alliance and maintaining assurance in groups of persons who share collective work" to achieve direction, alliance and assurance (Van Velsor, McCaulley & Ruderman, 2010). Leadership features include managers' education and useful training, effective authority and leader proficiency and managerial elegances and beliefs. Earlier studies have found an association between organisational leadership, performance measurement system and organisational efficiency (Teelken, 2008).Pounder (2021) enthused that leadership is the process of enlisting and assuring the cooperation and collaboration of others in the pursuit of set goals. Leaders are expected to guide, direct, teach and organize the group they control towards the set goal. Indeed, the quality of leadership determines the level of cooperation and collaboration which in turn represent critical success factors. Since leaders manage the affairs of a firm and manufacturing process are endeavors' to deliver goods and services. Thus, these factors are key to economic development. The key to a leader's success is vision, a long-term view of what can be produced and should be produced to meet needs of the populace. A visionary leader must be able to pervade an organisation to a promise land of development.

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2.1.5 External Environment

External environment refers to the attributes, manifestations, or occasional consistency of the setting an organisation looks as the focal entity of interest, (Tung, 1979). When scholars focus on the accessibility of resources in the external environment, bounty is the primary concern. Organisations operating in unsettled outside environments face a shortage or plenty of critical resources that can effect organisational performance (Dess & Beard, 1984). When the focus is on the type of information, indecisions, dynamism and difficulty are the main variables (Castrogiovanni, 2002).According to Che and Rapiah (2013), the vital elements that are considered best does for performance measurement system are considered into two aspects, features and requirements. All features have been clustered into two main categories; external and internal environment. As revealed by Che and Rapiah (2013), the external environment embodies the context in which the organisation functions and factors that are fundamentally beyond the organisational control. The internal environment includes factors that are within the firm or under the control of managers, such as resources, both social and financial, and the way they are handled. Environmental competitiveness is essentially linked with private segment organisations.

2.1.6 Employee Training

Wexley and Latham (1982) defined training as a scheduled programme designed to produce fairly permanent modifications in the knowledge, skills, assertiveness and behavior of employees. The level of training is allied with the accomplishment of new organisational system (Tait & Vassey, 1988),suitable training is essential to overcome resistance to change and convince employees of the profits of innovative system (Smith, 1998). An active performance measurement system depends on managers with the knowledge, skills and readiness to use the system properly (Chamberlain, 2011). The studies of; Ittner (2004) and Chamberlain (2011) had found a positive association between training and the effectiveness of performance measurement system. For example, Emerson (2009) cited training as an important factor and the key to maintaining the usefulness and effectiveness of the performance measurement system. All performance measures should be clearly connected and seen as relevant and reliable for decision making. Without proper training, managers may perceive performance measurement system metrics as less useful. Better understanding of the performance measurement system increases the likelihood that employees and managers will engage with the system and achieve favorite organisational results.

2.1.7 Performance Measurement System

Neely, Gregory and Platts (1995) well-defined a performance measurement system as the set of bounds used to measure the efficiency and success of a business organization. Bititci, Carrie and McDevitt (1997) claimed that the performance measurement system permits a closed-loop application of organisational tactics, which offers an edifice to allow relevant information to return to the suitable facts to facilitate policymaking and control procedures. Zairi (1994) identified that performance measurement system has been the methodical assignment of a series of events and suggested that the measurement task is to

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develop a technique to generate a session of evidence that will be beneficial in a wide variability of problems and of circumstances. The literatures on tactical performance measurement is based on the assumption that innovation in performance measurement profits organisations through the establishment of diversified and tactically aligned parameters that ease managerial resolution making (Chenhall, 2005). It is also argued that providing directors with an established decision-making procedures and then using these manifold measures in the assessment process will reinforce the significance of these measures and thus increase their efficiency. However, risks associated with using various extensive measures in the decision-influencing character are also recognized (Ittner, Larcker & Meyer, 2003). On the hand, a comprehensive set of metrics is regularly required to capture a fundamental business classical and value drivers (Kaplan & Norton, 1996). Influences on performance arise from the impact of these measures on organization decision-making. However, resolution making is also strongly influenced by evaluation devices, and the vague in literatures on the extent to which evaluation should capture a broad set of decision facilitation measures.

2.1.8 Non-financial performance

There is a current debate amid academics on how organisational performance can be intellectualized, given its intricacy and multidimensionality (Santos & Brito, 2012). Regardless of the deliberation, the objective is to generate value for the customer through deliberate applications of productive assets provided by investors (Carton, 2004). The perception of organisational performance can be considered both closely and generally. Strictly speaking, it refers to the financial marketplace, the merchandise market and stock holder yield, while organisational efficiency, which is a wider concept, includes broader financial and non-financial metrics such as `client fulfilment, operational efficiency and company social responsibility (Singh, Koushal, Kumar, Vimal & Guptal., 2016), also well-defined as a set of financial and non-financial paradigms that allow tactical leadership to weigh the extent of achievement of organisational goals (Kaplan & Norton, 1992). Organisational performance is also clear as a measure of how worth is conveyed to customers and other shareholders due to the quality of the management of organisations (Carton, 2004).

2.2 Theoretical Framework

This study reviewed three theories bordering on contingency factors, performance measurement practices and non-financial performance. These theories include contingency theory, resource based view theory, and theory X and Y. It has been observed and noted in the theoretical review that contingency theory will be sufficient and enough to give a better explanation about the relationship between contingency factors, performance measurement system and non-financial performance, based on the propositions and postulations of the previous theorists in the related areas. Therefore, this study is anchored on the three theories reviewed.

Contingency theory was propounded by Fiedler, Austrian psychologist, in his groundbreaking 1964 article “A contingency classical of leadership efficiency”. He studied the character and features of leaders. The classical states that there is no best flair of

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leadership and that contingency is a condition or event that is reliant on contingent or something else. There is no finest leadership style. In its place, a leader's efficiency is grounded on the condition. This is the outcome of two issues –"Leadership flair and situational favorableness (far along called "situational control")". The term contingency theory was first mentioned in literature by Lawrence and Lorsch (1967) in Zsolt, (2012) it was posited by Zsolt, (2012) that contingency theory is a response to the affirmation of Tailor, Frayol and Webbers postulation on organisational management principles. It therefore suggests that contingency theory is expected to explain the differences between organisation managements and practices. The proposition of contingency theory is that when different organisational factors are combined in the most appropriate way, it is more likely that there would be improvement in organisational performance (McAdam, Miller & McSorley, 2019). The theory of contingency is a terminology that is mostly adopted to describe fitness or appropriateness of certain things under a particular situation or circumstance, within the context of management accounting (Burkert, Davila, Mehta & Oyon, 2014). It is the nature of suitability or appropriateness that is known as fit of contingency, and it is of two types. These are selection type of suitability and the performance effect of matching management control system with contingency factors. Contingency theory as it relates to the study holds that the effectiveness of performance measurement system and improved non-financial performance can be attained through the selection and application of matching contingency factors, that can as well be referred to as organisational factors (McAdam, Miller, & McSorley, 2019). *Despite the various positive prediction and assertion about contingency theory evident in literatures of; Burkett et al., (2014), Otley (2016) and McAdam et al., (2019) revealed that the theory has also been criticized by Chenhall (2003) that there is no single theory that can explain a condition best rather than set of theories. None the less, contingency theory will bring improvement in an organisational performance (McAdam et al., 2019).*

The theory of resource based view was originally propounded by Wernerfelt (1984). The theory made a proposition that the level of competitive edge of a company over its competitors in the market hinges on the abilities and amount of internal resources possessed by the company at a particular point in time (Barney, 2001). This outstanding performance is made possible as outcome of the peculiarities of the possessions at the disposal of the company. The resources are considered as peculiar because they cannot be copied and replaced with ease. It can then be concluded that what makes a resource based view theory lies in the divergence of resources in possession of firms (Ismail, Mokhtar & Ali 2014). By implication, according to Rahman and Ramli (2014), the theory proposed some level of relationship that exists between certain organisational characteristics and business performance. According to Miguel and Moshifiq (2022), the theory of resource-based view is a theory of management that explains and determines how firms can be competitively positioned in the market among rivals in the industry through possession of business resources that cannot be easily accessed by other firms in the industry. The theory is mostly adopted and applied in exploring how firm performance is related to the internal resources of the firm through its competitiveness. In the same direction, according to the Sedera, Lokuge,

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Grover, Sarker, and Sarker (2016), the theory argued that peculiarity in resources owned by firms determines how individual firms perform relative to their competitors. Resource based view theory is actually directed towards how transactions among firms in the market, resources integration and capabilities to generate value in terms of competitiveness (Sedera *et al*., 2016). With the resource based view theory, the level of competitive edge of a company over its competitors (external environment) in the market hinges on the ability and amount of internal resources possessed by the company at a particular point in time. However, organisational factors including strategy, leadership style, culture, external environment, and training policy mostly determine management accounting practice design and its effectiveness (Burkert *et al.,* 2014). Following this, management accounting researchers claimed that there is no single management control system applicable to all organisations and in different circumstances (Henri, 2006). As a result of this, it is contingency factors that determine which particular management accounting practice is the best under each situation (Chenhall, 2003).

For employee training, apart from the contingency theory that are of the view that the more an employee is exposed to training, the more the performance of the employee which will in turn increases the performance of the entity. Theory X and Y also predicts that employee must be recognized individually and their individual differences have to be given a due consideration (training) in order to create such favorable environment since employees are individuals with divergent attributes to learning. While theory X is centered on the negative sides and inadequacies of employees in terms of their abilities and behaviors, theory Y focuses on the positive sides and strengths of individual employees in a business organisation, in terms of their potentials and responsibilities (McGregor, 1960). Ali (2010), it was revealed that employees must be recognized individually and their individual differences have to be given a due consideration, in order to create such favorable environment. All these thereby necessitated the investigation into how contingency factors influence performance measurement system and non-financial performance.

2.3 Empirical Review

Nur, et al. (2012) identified the factors that are impelling the implementation of performance management system (PMS) in South East Asia. The study precisely inspects organisational factors impelling PMS. The study embraces a quantitative method using questionnaires circulated to 123 scholars across a University in Malaysia. Factor analysis was piloted using Principle Component Analysis (PCA) method to identify the concept validity of factors impelling PMS. The outcomes of the study confirmed that three organisational elements (employee involvement, performance oriented culture and management commitment) prejudiced PMS and its efficiency at a modest level.

Ayandele and Isichei (2013) carried out an empirical study investigating the effect of performance measurement practice on employee commitment. The study, engaged a survey research strategy and sample of the study comprised some selected firms quoted on Nigeria Stock Exchange. The data required were collected through surveys and scrutinized through the application of linear regression analysis. Empirical evidence revealed that staff commitment is positively and significantly determined by performance measurement practice in the studied organisations.

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Odunayo, et al. (2014) empirically examined how performance measurement practice is associated with firm productivity. The study used survey research design, however, sample for the study consisted of some selected public organisation in Lagos State. The necessary data for the study were gathered through structured surveys and were then analyzed by descriptive statistics. Findings revealed that effective performance measurement system impacts positively on firm performance among the studied public organisations in Lagos State.

Audu and Gungul (2014) empirically examined how productivity is affected by employee training and development in Nigeria. The data required for the study were both sourced from primary and secondary sources. The main data were obtained through structured questionnaires and interviews. The study target population consisted of four hundred and eighty two respondents. However, a sample of ninety eight was determined and used for the study. The data obtained were then analyzed through the application of descriptive data which include mainly simple percentage method. The statistical findings obtained revealed that employee training and development impact positively and significantly on productivity among the studied firms in the hospitality industry in Nigeria.

Yuliansyah, et al, (2015) examined Non-financial (NF) performance measures and managerial performance: the intervention role of innovation in an Indonesian stock exchange-listed organisation. Analyzing with Smart PLS the functioning data from a review, the study showed that NF performance measures have a positive outcome, fully intervened by innovation, on individual performance. It follows that to use NF indicators could enhance innovativeness and lead to the enhancement of administrative performance. In other words, executives must take note of NF performance measures to improve invention that can lead to enhanced individual performance.

Ahmad and Zabri (2016) examined the use of non-financial Performance Measurement system among manufacturing firms and to search the link amongst size of the firm, business environment, owners/manager participation and contemporary manufacturing expertise and the use of non-financial performance measures. A survey was sent to a unsystematic sample 500 Malaysian manufacturing firms which occasioned in 102 functional returned surveys. The outcomes show that non-financial performance measures linked to internal procedures and clients have the maximum extent of use. In contrast, techniques associated to value device have a moderately low level of usage. The outcomes also disclose that there are substantial associations among size of the firm, participation of owner/manager, and contemporary expertise and the use of non-financial performance measures.

Okoro, et al, (2017) evaluated the influence of motivation on the productivity of Nigerian employees at Nigerian Breweries, Enugu State. One hundred and fifty surveys were ran and one hundred and twenty were recovered giving an occasional percentage of 80%. The sample size was statistically resolute using Taro Yamane formula. Facts were derived from both primary and secondary sources. Established on the outcomes, most of the respondents were senior staff with few junior staff. The study shown that most of the respondent believes

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that the cause of stumpy productivity in the firm is as a result of the superior attitude towards employees. While inadequate motivation in the organisation causes low productively.

Cross (2018) attempted to ascertain the influence which training has on workers performance bearing in mind that the collective of individual performance will end in organisational performance. The study measured the microfinance bank sub-sector from which three banks were designated. Data was composed from 304 respondents who were drawn using Taro Yamane sample size determination method through designed questionnaire. The data collected was imperiled to both descriptive and inferential methods were used to test framed premises. The study revealed that employee skill, knowledge and capability gained from training has substantial effect on productivity. Further findings reveal that training has outcome on employee assurance to the organisation.

Ong, et al, (2018) examined the link between contingent factors, which are doubt in the environment, organisational size, environmental strategy, regulatory pressure, and top management commitment that effect environmental management accounting and environmental performance amongst manufacturing firms in Klang Valley, Selangor. The study was showed on manufacturing firms located in Klang Valley, established on the 2,400 firms registered in the Federal Malaysian Manufacturer (FMM) databank. 600 surveys were showed out to manufacturing firms. The obtained statistics were scrutinized using PLS-SEM and the result highlights that the improbability in the environment, regulatory pressure, and top organization commitment meaningfully affect environmental performance.
Faeq, et al, (2019) examined external contingency factors that impact ABC application and the likely effects of activity-base costing (ABC) application on organisational performance. The study also tests the intermediating effect of ABC application on the relationship among external contingency factors and organisational performance in an emerging economy. A cross-sectional survey was steered among 114 manufacturing firms in Iraq. The statistics was analyzed by PLS-SEM, and the results shown that environmental uncertainty (EU) and market orientation (MO) have a affirmative and significant effect on ABC application, and that ABC application has a affirmative and substantial effect on organisational performance. Furthermore, the study founds the intervening role of ABC application on the relationship among external contingency factors and organisational performance.

Ekwochi (2019) examined the effects of performance assessment on productivity in an organisation and it is geared towards scrutinizing the effects of performance assessment on the efficiency of employees in organisation. Data were collected from primary and secondary bases and it was evaluated. The study made use of review design. In view of the results, it was open that involvement of employees in evaluation exercise and the use of performance evaluation caused to an increase in output to the organisation and higher standard of living to the employee because of promotion given and other essential reward that motivated the employee to work hard.

Afolabi and Laseinde (2019) examined the influence of manufacturing sector yield on economic growth in Nigeria from 1981 – 2016. The study engaged secondary data sourced from Central Bank of Nigeria Statistical Bulletin for Autoregressive Distributed Lag (ARDL)

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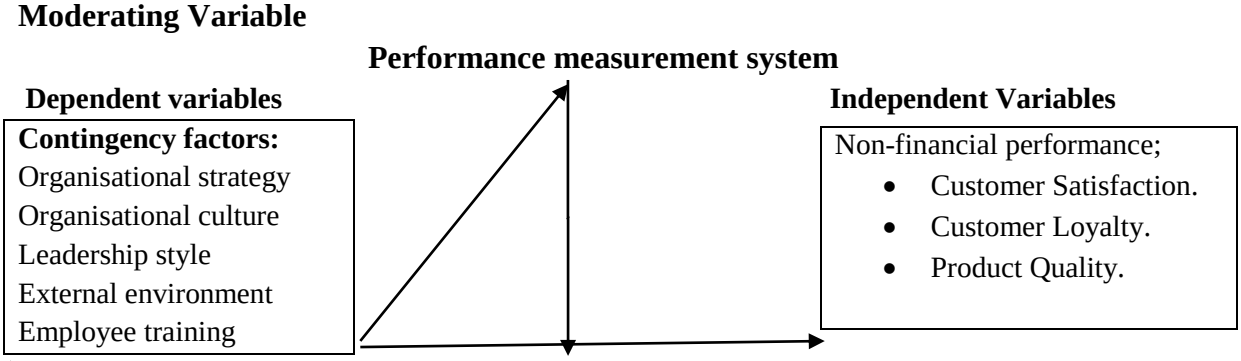
model and Granger casualty technique on RGDP, manufacturing capacity utilization (MCU), manufacturing output (LMO), Government Investment Expenditure (GINVEXP), money supply (LM2) and interest rate (INR). Proof of long-run and short-run dealings among the variables was established. The outcomes showed that MCU has positive effect on RGDP while LMO also affects RGDP positively. It also showed that GINVEXP has negative effects on RGDP whereas LM2 influenced RGDP positively.

Manukaji, et al. (2019) examined the effect of human resources development on the performance of quoted firms in Nigeria. The study is moored on resources based view theory by Barney (1991). The study embraced ex post facto research strategy. A total of five firms quoted on the Nigerian Stock Exchange were scrutinized using their 2014 to 2018 annual reports and accounts. Data were obtained on employee remuneration, training and development cost, size of the employee, and return on assets a substitution for performance. The data produced were scrutinized using descriptive data, correlation test and ordinary least square estimation method. The study establish that employee remuneration and training and development cost have significant effect on performance of quoted companies in Nigeria. Size of employees was establish to have inconsequential effect on performance of quoted firms in Nigeria. The study concludes that human resources development has significant influence on performance of quoted firms in Nigeria.

2.4 Conceptual Framework

The conceptual model in figure 1 was constructed and developed to depict the relationship among contingency factors, Performance Measurement Practices and organisational performance among quoted manufacturing firms in Nigeria.



Source: Author Conceptualization, (2022).

Figure 1 Conceptual Framework

Based on figure 1, contingency factors are used as independent variables, performance measurement system is used as moderating variable for both independent and dependent variables, while non-financial performance is the dependent variable in the study. Then, contingency factors are proxy with organisational strategy, organisational culture, leadership style, external environment and employee training.

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2.5 Hypotheses of the study

From the above; background, conceptual discussions, theoretical explanations and empirical reflections typically based on the previous studies in the area of contingency factors, performance measurement system and non-financial performance. The observation of this study throughout the revised studies has indicated that there exists some aspects of concepts in the field of contingency factors, performance measurement system and financial performance which are yet to be addressed, and as such demands empirical investigation. It is these questionable areas which requires attention that is considered as gap in the past literature reviewed and investigated by this study. Based on the reviewed literatures, this study, generates the following hypotheses and subsequently tested statistically to establish the empirical linkage among the study's variables:

H01: Contingency factors do not have significantly impact on non-financial performance among listed manufacturing firms in Lagos, Nigeria.

H02: Performance Measurement System do not significantly moderate the relationship between contingency factors and non-financial performance among listed manufacturing firms in Lagos, Nigeria.

3.0 Methodology

3.1 Research Method

This study employed a cross-sectional survey on the sampled listed manufacturing firms in Lagos, Nigeria. The survey conducted between June and September, 2022.

Structured questionnaire indicating the objectives and importance of the study was administered to the target respondents. The population of this study for comprises of chief accountant, senior accountant, chief internal auditor, senior internal auditor, advertisement/customer relations manager, marketing/store manager, production manager, and personnel/human resources manager in each of the sampled firms on Nigeria Stock Exchange as at 31st December, 2020. The choice of the population of this study was in line with the argument of Fatoki (2014) who held the view those owners of firms lack time to manage their enterprise, as such the use of employees as the population of the study is not in abstract. Based on the list extracted from Nigeria Stock Exchange official website, the manufacturing firms were accordingly classified into consumer goods, health care, industrial goods, natural resources, agriculture and conglomerates made up of thirty seven (37) listed manufacturing companies sited in Lagos, Nigeria. The targeted respondents which form the population for this study, were eight staff from each of the thirty seven (37) listed manufacturing companies' that is, 37 x 8 = 296. From the population of 296 respondents gotten through purposive sampling technique using Yamane (1967) sample size determinant and academic sampling technique respectively. The study's sample size of one hundred and seventy (170) respondents, determined with the formulae developed by Yamane (1967).

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3.2 Results and Analysis

This study tested for the normality of the data received and discovered it was slightly non-normal, hence the study used PLS-SEM. The study also tested for common method bias. However, felt common method bias could be a problem because the study collected data on both the independent (contingency factors), dependent variables (non-financial performance) and moderating variable (performance measurement system) from the same respondents (Podsakoff, Mackenzie, Podsakoff & Lee, 2003). As a result, this study, applied Harman's single factor test to investigate common method bias using an uprooted principal factor analysis and performed exploratory factor analysis on all of the observed variables.

3.3 Variable Measurement and Definitions

Variables are statement of a particular dimension or elements through which certain phenomenon are measured. Thus they are procedures for explaining ambiguous concepts by committing than to be assessed quantitatively and empirically. All these variables are contingency factors, performance measurement system and financial performance. They are all well-defined in line with the intent of this study (Sekaran & Bougie, 2014). Contingency factors as independent variables and these were proxy with organisational strategy, organisational culture, leadership style, external environment and employee training. Organisational culture was measured with statements adapted from Ahmad (2017), organisational strategy measured with statements adapted from Reza *et al*. (2015); Ting Chi (2015)**,** external environment measured with statements adapted from Brown hilder (2016), Lorenzo *et al*. (2018), employee training measured with adapted statements from Ken and Christopher (2004), while leadership style is measured with statements adapted from Allan *et al.* (2016); Rod *et al.* (2017); Nur *et al.* (2012). Non-financial performance as the dependent variable, measured by using adapted statements from Faeq *et al.*, (2019) research instrument and performance measurement system as moderating variable, measured by using adapted statements from Matthew (2008). The choice of performance measurement system as a moderating variable is informed by proposition of Sowa, Selden and Sand fort (2004) that contingency variables and performance measurement system interact to enhance non-financial performance. Although, it has been contended that a variable that has been used as dependent variable or independent variable can be used as moderating variable or mediating variable in any study, depending on the choice and interest of the researcher (Becker, 2005).

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Measurement of variables in the study is summarized in table 1.

	Abbreviation	Measurement	Source
Independent Variables:			
Organisational strategy	OS	Product readiness (all-inclusive distribution), provide effective after sales facility and support, provide high-quality products and provide on time delivery (differentiation strategy)	Reza, *et al.* (2015) ; Ting Chi (2015
Organisational culture	OC	Adaptability culture, involvement culture and result oriented culture, effectiveness culture, teamwork culture	Ahmad (2017),
Leadership style	LS	Transformational leadership style, Autocratic style, Pacesetting style, Democratic style, Coaching style, Affiliate style, Permissive style.	Allan *et al.* (2016); Rod *et al.* (2017); Nur *et al.* (2012).
External environment	EX	Environmental uncertainty and environmental complexity	Brownhilder (2016), Lorenzo *et al.* (2018),
Employee training	ET	Training on how to set performance goal, training on how to use performance information for decision making	Ken and Christopher (2004),
Dependent Variables:			
Non-financial performance	NFP	Customer satisfaction, customer loyalty, and product quality	Faeq *et al.* (2019)
Moderating Variables:			
Performance Measurement System	PMS	The degree of information provided by PMS about diverse areas of the business element, the adequacy of record created by PMS for performance evaluation purpose, a range of measures that concealed the critical areas of the business unit's operations, and the degree of information about important aspects of the business unit's operations	Matthew (2009).

3.4 Model Specification

The below model were used to answer each of the research hypothesis stated in this study:

Model 1 (M1): Contingency Factors and Non- Financial Performance

This model specifies the influence of contingency factors and non-financial performance.

$$NFP = \beta_0 + \beta_1 OS_i + \beta_2 OC_i + \beta_3 LS_i + \beta_4 EX_i + \beta_5 ET_i + e_i \quad \text{.....(3.1)}$$

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Model 2 (M2): Contingency Factor, Performance Measurement System and Non-Financial Performance

This model specifies interaction between contingency factors and Performance Measurement System and non-financial performance.

$$NFP = \beta_0 + \beta_1 OS_i + \beta_2 OC_i + \beta_3 LS_i + \beta_4 EX_i + \beta_5 ET_i + \beta_7 OS_i {}^{*} PMS_i + \beta_8 OC_i {}^{*} PMS_i + \beta_9 LS_i {}^{*} PMS_i + \beta_{10} EX_i {}^{*} PMS_i + \beta_{11} ET_i {}^{*} PMS_i + e_i \quad \text{.....(3.2)}$$

Where:

NFP=non-financial performance

OS=organisational strategy

OC=organisational culture

LS=leadership style

EX=external environment

ET=employee training

PMS=Performance Measurement System

e_1 =Error term

3.4.1 A Priori Expectation

The *a* priori anticipation of this study is that all the contingency variables positively influence performance measurement system, financial and non-financial. It is also confirmed that the interaction of contingency factors and performance measurement system produced a significant improvement in organisational performance.

4. 0 Results and Discussion.

The findings of this study presented in this segment includes; summary of the response rates, descriptive data of respondents, descriptive data of the variables and objects of the investigation. Results from the initial statistical analysis, including normality tests, multicollinearity analysis and common method bias, are presented. Following this section is the presentation of the measurement model followed by the structural model.

4.1 Response rate

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Based on the sample size of one hundred and seventy (170) determined respondents for this study, questionnaire were administered in a self-managed physical environment and online. In order to avoid responses falling below the sample size of 170, the respondents, 200 questionnaires were administered since some of the respondents did not answer their questionnaire completely.

Table 2. Response Rate

S/NO.	DESCRIPTION	FREQUENCY	PERCENTAGE (%)
1.	Number of questionnaire administered	200	100%
2.	Number of questionnaire returned	185	92.5%
3.	Number of valid questionnaire	168	91%
4.	Response rate		91%

Source: Author′s Computation (2022).

As shown in Table 2, out of the 200 administered questionnaires, 185 were returned but 17 of the 185 returned copies of questionnaires were not completed correctly and as such excluded from the analysis. The response rate was 91% which could be relied upon for conversion and policy direction. This rate is not at variance with the study of Sivo, Sanders, Chang and Jiang (2006) which held the view that average response rate between 30% and 50% of total sampled population is sufficient for the survey results.

4.2 Test of Multicollinearity

Multicollinearity occurs when the independent variables are exceedingly correlated ($r > 0.7$). According to Tabachnick and Fidell (2001), researchers should exercise caution when conjoining two variables with a high correlation of 0.7 or higher in the same analysis.

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Table 3. Correlation among the Independent Variables

		ET	EE	LS	OC	OS
ET	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	168				
EE	Pearson Correlation	.657**	1			
	Sig. (2-tailed)	0.000				
	N	168	168			
LS	Pearson Correlation	.497**	.536**	1		
	Sig. (2-tailed)	0.000	0.000			
	N	168	168	168		
OC	Pearson Correlation	.301**	.384**	.426**	1	
	Sig. (2-tailed)	0.000	0.000	0.000		
	N	168	168	168	168	
OS	Pearson Correlation	.324**	.382**	.465**	.367**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	168	168	168	168	168

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Author′s Computation (2022).

Table 3. Displayed that relationship valuation for multicollinearity showed low collinearity among the variables. Therefore, all variables were engaged and exposed to more analysis in this study.

Similarly, this study also applied the full collinearity test, as suggested by Kock (2017). All variables are regressed against a common factor to check for possible collinearity issues in the Full Collinearity Test.

4. 3 Descriptive Analysis

This test is typically used to determine whether or not the data collected for this study are normally distributed. In this regard, this study used Skewness and Kurtosis statistics to test for normality of data collected.

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Table 4 Test of Normality

Constructs	N	Skewness	Kurtosis
External Environment	168	-0.244	-1.004
Employee Training	168	-0.077	-1.065
Leadership Style	168	-0.354	-0.611
Non-Financial Performance	168	-0.172	-0.638
Organisation Culture	168	-0.501	1.617
Organisation Strategy	168	-0.484	0.192
Performance Measurement System	168	-0.319	-0.793

Source: Author Computation (2022).

From table 4 all Skewness and Kurtosis values for each of the variable used in this study are within Kline's (1998) suggested range of -3 to +3 threshold. The scores on each of the variables are presumed to be normally distributed since there's no value of variable of Skewness and Kurtosis that is more than +3 (follow the outline of the normal curve), thus, this results is normally distributed.

4. 3. 1 Linearity Tests

This study verified the linearity of the data collected established on the postulation of the residual scatter plots. It is anticipated that the residuals should have a straight-line association with the projected scores of this study's dependent variable (Pallant, 2007).

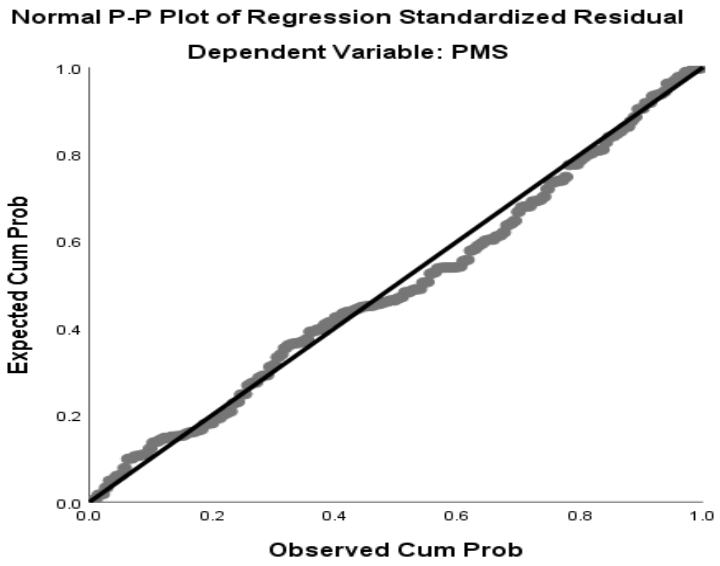

Figure 2. Residual Scatter Plot for Performance Measurement System
Source: Author's Drawing (2022).

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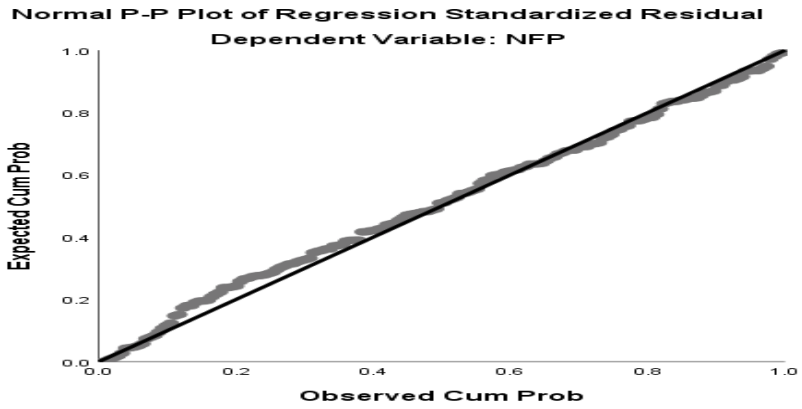

Figure 3. Residual Scatter Plot for Non-Financial Performance

Source: Author's Drawing (2022)

The scatter plots for the dependent variables performance measurement system and non-financial performance as shown in Figures; 2 and 3, respectively, have a straight-line association with the projected scores of this study as designated by the linearity supposition of the residual scores congregated at the Centre along with zero points in line with (Pallant 2007).

Table 5.Full Collinearity Test

Variable	**ET**	**EE**	**LS**	**NFP**	**OC**	**OS**	**PMS**
Tolerance	0.355	0.476	0.566	0.349	0.720	0.721	0.316
VIF	2.781	2.129	1.844	2.886	1.651	1.464	3.137

Source: Author′s Computation (2022).

The result, as shown in Table 5, revealed that all variables were below the 3.30 threshold, thus, common method bias or variance is not an issue for this study's data (Kock, 2020).

4.2.3 Assessment of the Measurement and Structural Model

This study evaluated the measurement model to determine the validity and reliability of the measurement items. The individual item loadings, internal composite reliability, convergent validity and discriminant validity were examined.

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Table 6. Summary of the Construct Loadings, Convergent Validity and Reliability

Constructs	**Items**	**Loadings**	**Composite Reliability (CR)**	**Average Variance Extracted (AVE)**
External environment	EE2	0.673	0.837	0.508
	EE3	0.700		
	EE4	0.646		
	EE5	0.779		
	EE6	0.757		
	EE7	0.716		
Employee training	ET1	0.743	0.915	0.642
	ET2	0.852		
	ET3	0.864		
	ET4	0.795		
	ET5	0.785		
	ET6	0.762		
Leadership style	LS1	0.749	0.94	0.691
	LS2	0.788		
	LS3	0.836		
	LS4	0.828		
	LS5	0.899		
	LS6	0.817		
	LS7	0.893		
Non-financial performance	NFP1	0.570	0.879	0.597
	NFP2	0.768		
	NFP3	0.890		
	NFP4	0.830		

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	NFP5	0.769		
Organisational culture	OC1	0.901	0.908	0.665
	OC2	0.798		
	OC3	0.682		
	OC4	0.825		
	OC5	0.856		
Organisational strategy	OS1	0.665	0.869	0.572
	OS2	0.799		
	OS3	0.729		
	OS4	0.849		
	OS5	0.726		
Performance Measurement System	PMS1	0.815	0.907	0.661
	PMS2	0.870		
	PMS3	0.755		
	PMS4	0.792		
	PMS5	0.830		

Source: Author′s Computation (2022).

All measurement model outcomes are showed in Table 6. The construct validity is said to be in the range to which a set of measured variable quantified what they supposed to measure based on a grounded theoretical measure (Hair, *et al*., 2016). At the same time, the reliability of a measurement denotes its consistency. Construct validity is measured through convergent and discriminant validity (Hair *et al*., 2016).

Agreeing to Hair *et al*. (2016), item pointers outer loadings ought to be 0.708 or greater. However, loadings between 0.4 and 0.7 should be considered for removal only if the deletion leads to an increase in Average Variance Extracted (AVE) and Composite Reliability (CR) above the recommended threshold value. However, most of the indicators loaded above 0.708, except for some items as showed in the notes for Table 6. The items were not deleted because their AVEs and CRs are already beyond the recommended thresholds of 0.5 and 0.7 respectively. Similarly, the composite reliability (CR) test evaluates the consistency of the measurement items, and this method is more appropriate for PLS-SEM than Cronbach‘s Alpha (Hair *et al*., 2016). All constructs have their CR above 0.7. Therefore, CR is confirmed

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satisfactory. Convergent validity is the extent to which a measure correlates positively with alternative measures of the same construct. The convergent validity for this study was established using the Average Variance Extracted (AVE) obtained from the Smart PLS 3.3.0 algorithm as recommended by Hair *et al*. (2017). In order to show that the latent variable elucidates more than half of its indicator's variance, Hair *et al*. (2017) proposed that an AVE value of 0.5 and higher should be achieved. Therefore, all the constructs' AVE values were greater than the 0.5 minimum threshold for this study, thus, AVE confirmed good to go for management decision making.

4.2.4 Discriminant Validity

Discriminant validity is the extent to which a construct is completely distinct from other constructs empirically in the same model (Hair *et al*., 2013). Similarly, a high level of discriminant validity implied that a construct is unique and captures phenomena not accessible by other constructs in the model. This study calculated discriminant validity using the Fornell Larcker criterion and the Heterotrait and Monotrait (HTMT) criterion. The outcome of the two methods is offered for this study. The Fornell Larker method likens the square root of the AVE values with the latent variable correlations. Precisely, the square root of each construct's AVE should be greater than its highest correlation with any other construct (Fornell & Larcker, 1981). The result is presented in Table 7.

Table 7. Fornell Larcker Criterion for Discriminant Validity

	1	2	3	4	5	6	7
1	0.794						
2	0.657	0.807					
3	0.499	0.536	0.711				
4	0.650	0.578	0.500	0.841			
5	0.300	0.383	0.426	0.400	0.724		
6	0.324	0.383	0.463	0.389	0.367	0.800	
7	0.747	0.597	0.531	0.728	0.398	0.385	0.801

Source: Author′s Computation (2022).

Note: 1=Employee Training 2= External Environment 3= Leadership Style 4 = Non-Financial Performance 5 = Organisational Culture 6 = Organisational Strategy 7 = Performance Measurement System.

Equally, Henseler *et al*., (2015) recommended a thresholds value for HTMT to be 0.90 if the path model contains constructs that are abstractly very similar, like this study.

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Table 8 HTMT Criterion for Discriminant Validity

	1	2	3	4	5	6	7
1							
2	**0.737** (0.650; 0.805)						
3	**0.603** (0.526; 0.779)	**0.667** (0.405; 0.657)					
4	**0.729** (0.582; 0.829)	**0.647** (0.512; 0.743)	**0.590** (0.458; 0.703)				
5	**0.430** (0.258; 0.583)	**0.545** (0.377; 0.700)	**0.675** (0.490; 0.832)	**0.571** (0.380; 0.725)			
6	**0.507** (0.252; 0.756)	**0.607** (0.352; 0.874)	**0.848** (0.700; 0.912)	**0.622** (0.387; 0.942)	**0.748** (0.625; 0.819)		
7	**0.850** (0.777; 0.906)	**0.680** (0.560; 0.779)	**0.648** (0.507; 0.770)	**0.827** (0.727; 0.897)	**0.579** (0.396; 0.738)	**0.633** (0.349; 0.926)	

Source: Author′s Computation (2022).

Note: 1=Employee Training 2= External Environment 3= Leadership Style 4 = Non-Financial Performance 5 Equally, Henseler et al.,(2015) recommended a thresholds value for HTMT to be 0.90 if the path model contains constructs that are abstractly very similar, like this study. However, the result for the HTMT test (Table 8) shows that every value was below 0.90. Hence, it can be resolved that the HTMT values of the constructs are valid and suitable for managerial decision making.

= Organisational Culture 6 = Organisational Strategy 7 = Performance Measurement System

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This study calculated discriminant validity using the Fornell Larcker critariam as presented in table 7 and the Heterotrait and Monotrait (HTMT) Critarium in table 8. The outcomes of the two metheds is offer for this study. The Fornell larcker method likens the square root of the AVE values with latent variable correlations. Precisely, the square root of each construct's AVE should be greater than its highest correlations with any other construct (Furnell & Larcker 1981). This study discriminant validity result was in line with Fornell Larcker assertionof fit.

4.3.5 Structural Model (Test for Multicollinearity)

The second part of the assessment is the structural model which is always applied when the measurement model assessment is acceptable. As pronounced by Hair *et al.* (2019), five key criteria form the assessment for the structural model in PLS-SEM. These include scrutinising the collinearity, coefficient of determination (R^2), effect sizes (f^2), the relevance of the path coefficients, the statistical implication, and the predictive relevance (Q^2 and PLSpredict). Hair, *et al*., (2017) suggested that it is necessary to test for collinearity before proceeding with other structural relationship valuations. The Variance Inflation Factor (VIF) was used to assess multicollinearity samongst the variables.

Table 9.Result of the Collinearity Assessment (Variance Inflation Factor)

	Non-Financial Performance Model	Performance Measurement System
Employee Training	2.844	1.862
External Environment	2.102	2.040
Leadership Style	2.000	1.718
Organisation Culture	1.583	1.318
Organisation Strategy	1.508	1.361
Performance Measurement System	3.080	-

Source: Author′s Computation (2022).

Table 9 established that collinearity of the study variables, thus, collinearity problems do not exist amid the constructs as all the values of the VIF are below the threshold of 3.3 (Hair *et al*., 2019).

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4.3.6 Path Coefficients Results for Model 1 (M1): Contingency Factors and Non-financial Performance

Model 1 (M1) was formulated to assume that non-financial performance will not be predicted by contingency factors, including organisation strategy, organisation culture, leadership style, external environment, and employee training. This assumption also lays the foundation for hypothesis H_{01}.

Table 10 Model 1 (M1) Hypothesis Testing

H01: Contingency factors do not have statistically significant impact on non-financial performance among listed manufacturing firms in Lagos, Nigeria.

					Confidence Interval		
	B	**Std Error**	**T-Value**	**P Values**	**2.50%**	**97.50%**	**Ranking**
EE -> NFP	0.151	0.075	2.031	0.048	0.024	0.278	3rd
ET -> NFP	0.363	0.073	4.954	0.000	0.239	0.479	2nd
LS -> NFP	0.100	0.090	1.109	0.273	-0.128	0.259	4th
OC -> NFP	0.370	0.090	4.123	0.000	0.218	0.519	1st
OS -> NFP	-0.003	0.055	0.051	0.960	-0.107	0.080	5th

Source: Author's Computation (2022).

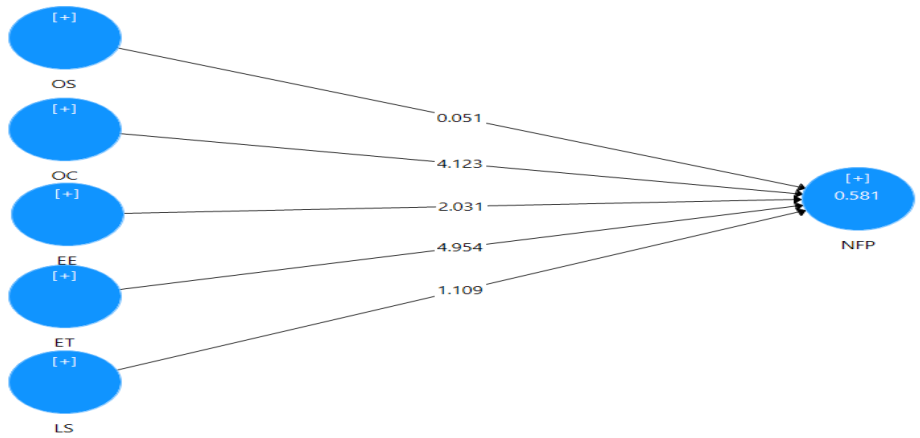

Figure 4. Structural Model for Model 1 (M1)
Source: Author's Drawing (2022).

The results as shown in Table 10 and Figure 4 revealed that the external environment, employee training, and organisational culture are significantly related to the non-financial performance of listed manufacturing firms in Lagos, Nigeria. Organisation culture has the strongest effect on the non-financial performance of listed manufacturing firms in Lagos,

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Nigeria, followed by employee training and external environment with relatively strong and significant. Evidence in the T-Value and P-Value results in table 10; Organization culture having 4.123 and 0.000, employee training having 4.954 and 0.000 and external environment having 2.031 and 0.048 respectively. Non-financial performance measures are part of incentives, to boost the organization's performance, particularly the employees and stimulated customers, retailers and wholesalers to be more endeared to the organization products and services. However, the influences of leadership style and organisation strategy are weak and ignorable; as there are no enough evidence to make categorical inferences on leadership style and organisation strategy based on the results of the findings on non-financial performance of listed manufacturing firms in Lagos, Nigeria thus, these two factors can be excluded from the model. With this result the null hypothesis one will be rejected since three out of the five factors were positively and significantly related, they can be relied on upon for decision making.

4.3.7 Path Coefficients Results for Model 2 (M2): Contingency Factors, Performance Measurement System and Non-financial Performance

Model 2 (M2) was formulated upon the assumption that the performance measurement system will not moderate the association between the five contingency factors and the non-financial performance of listed manufacturing firms in Lagos, Nigeria. Upon this assumption, hypothesis H_{02} was formulated that the performance measurement system will not moderate the association between contingency factors and non-financial performance of listed manufacturing firms in Lagos, Nigeria.

Table 11 Model 2 (M2) Hypothesis Testing

H02: Performance measurement system does not significantly moderate the relationship between contingency factors and non-financial performance among listed manufacturing firms in Lagos, Nigeria.

	B	**Std Error**	**T-Values**	**P Values**
EE*PMS -> NFP	0.209	0.194	4.811	0.043
ET*PMS -> NFP	0.144	0.137	2.719	0.053
LS*PMS -> NFP	-0.152	-0.143	3.377	0.045
OC*PMS -> NFP	0.006	0.001	0.119	0.050
OS*PMS-> NFP	-0.118	-0.122	2.163	0.055

Source: Author′s Computation (2022)

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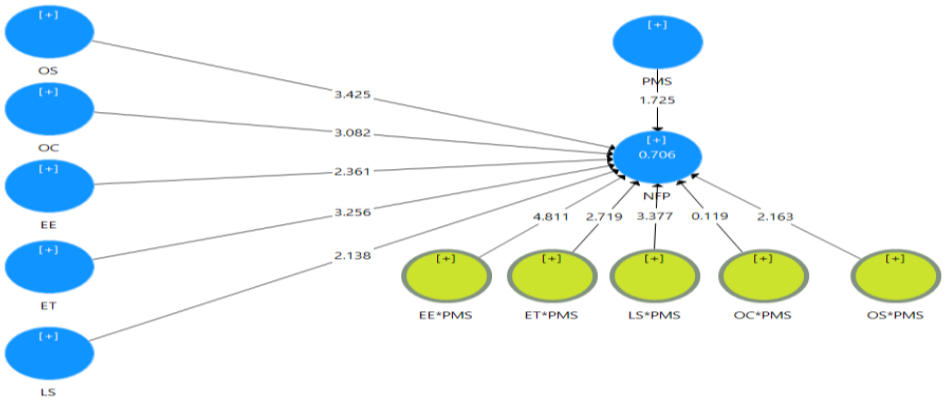

Figure 5 Structural Model for Model 2 (M2)

Source: Author's Drawing (2022).

As displayed in Table 11 indicates that performance measurement system positively moderates the relationship between four contingency factors (external environment, employee training, organisational culture and organisational strategy) and non-financial performance of listed manufacturing firms in Lagos, Nigeria. Going by results of both T-value and P-value, external environment having 4.811 and 0.034, employee training having 2.719 and 0.053, organization culture having 0.119 and 0.050 and organization strategy having 2.163 and 0.055, respectively. While performance measurement system showed a non-moderating effect on the relationships between one contingency factor (leadership style) and non-financial performance of listed manufacturing firms in Lagos, Nigeria, as the relationship between leadership style and non-financial performance are not significantly moderated by the performance measurement system. As shown in the result of the findings in model two (2), because the calculated P-value of the three (3) out of the five (5) variables of the contingency factors are 0.000 > 0.05 although, two variables has a non-moderating effect on the relationship. The beta co-efficient indicate that performance measurement system positively moderate the relationship between two contingency factors (external environment and employee training) and non-financial performance of the listed manufacturing firms in Lagos, Nigeria. Meanwhile, performance measurement system negatively moderated the relationship between two contingency factors (Leadership style and organization strategy) and non-financial performance of listed manufacturing firms in Lagos Nigeria. However, the relationship between organization culture and non-financial performance was not moderated by performance measurement system, this was because it show a positive and weak moderation. From the result it clear that performance measurement system significantly moderated contingency factors and non-financial performance and thus, the null hypothesis rejected. The measurement in place are good predictors of non-financial performance of manufacturing firms in Nigeria

4.3.8 Coefficient of Determination

The coefficient of determination was measured by examining the R squared (R^2) values of the endogenous constructs. This study's result was measured based on the Hair *et al.* (2017) classification of R^2 values of 0.75 = Substantial; 0.50 = Moderate; and 0.25 = Weak.

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Table 12 Coefficient of Determination (R^2)

Model	Construct	R squared value
M1	Contingency Factors	0.581
M2	Performance Measurement System	0.706

Source: Author's Computation (2022).

The results Table 12 showed that; for Model 1 (M1), the contingency factors account for 58% (0.58) of total variance for the non-financial performance of listed manufacturing firms in Lagos, Nigeria. While Model 2 (M2), the moderating effect of the performance measurement system accounted for 71% (0.706) of the total variance for the non-financial performance of listed manufacturing firms in Lagos, Nigeria. Indicating that both contingency factors and performance measure system positively influence non-financial performance at a percentage of 58% and 71% of the total variance respectively. The R squared (R^2) values of the endogenous constructs classification are substantial and fit for managerial decision making.

4.3.9 Assessment of Effect Sizes (f^2)

The effect sizes of the exogenous constructs were observed against the exogenous constructs based on the guideline of Cohen (1998). The guideline states that f^2 of 0.35 = Large, 0.15 = Medium, and 0.02 = Small.

Table 13.Result of the Effect Size (f^2)

	M1 (Performance Measurement System)	M2 (Non-Financial Performance)
External Environment	0.061	0.036
Employee Training	0.039	0.245
Leadership Style	0.154	0.014
Organisation Culture	0.040	0.176
Organisation Strategy	0.003	0.000

Source: Author′s Computation (2022).

As displayed in Table 13, the result shows that for Model 1, external environment, employee training, and organisational culture have small effect sizes on the performance measurement system. Also, leadership style has a medium effect on the performance measurement system, while organisation strategy does not affect the performance

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measurement system of listed manufacturing firms in Lagos, Nigeria.f^2 explained how variables of the study affects each other . The result for model 2 showed that external environment and organisation culture have a medium effect size on the non-financial performance of listed manufacturing firms in Lagos, Nigeria. In contrast, the external environment has an effect on the non-financial performance of listed manufacturing firms in Lagos, Nigeria.

4.3.10 Assessment of Predictive Relevance (Q^2)

The predictive relevance is the test of the model's capability. It is usually determined based on the coefficient value of the Q^2 estimate of the endogenous variable. The test helps to ascertain the practical adequacy of the exogenous variable in predicting the endogenous variables. The Q^2 value shows how well the path models can predict the initially perceived data values (Hair *et al.*, 2017). It was resolved that the model has predictive value when the Q^2 values are greater than zero (Henseler *et al.*, 2009).

Correspondingly, the predictive sample reuse technique is a criterion proposed by Chin *et al.* (2008) that determines the predictive validity using the blindfolding technique. Here, forecasts are made about the parameters after overlooking a given block of gauges.

Table 14 Result Summary of the Predictive Relevance (Q^2)

Models	**Endogenous Constructs**	**SSO**	**SSE**	**Q^2 (=1-SSE/SSO)**
Model 1	Non-financial Performance	840	567.561	0.324
Model 2	Non-financial Performance	840	424.576	0.495

Source: Author′s Computation (2022).

The Q^2 values of the endogenous variables for model 1 (M1) show that the performance measurement system, Non-financial performance has a Q^2 value of 0.324 for model 1 (M1). For model 2 (M2), with the moderating effect of the performance measurement system, also have, model 2 (M2)'s non-financial performance as the key endogenous construct has a Q^2 value of 0.495. Therefore, the predictive relevance of all the models can be established and confirmed. This is just to test the relationship between the variable of the study that the whether there's positive or negative relationship, this study show a positive and significant relationship. Since the values are all greater than zero (0), the Q^2 predictive relevance does not mean anything about the quality of a prediction (Rigdon, 2014). Effect of performance measurement system moderation on contingency factors and non-financial performance.

5. Conclusion and Policy Recommendations

The empirical investigation of contingency factors and non-financial performance of listed manufacturing companies in Lagos, Nigeria was rounded up in this section. Manufacturing industry serve as the pillar of a nation's economy upon which all other sectors where built on thus, the world leading economies are rooted in the strength of their

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manufacturing sectors to attain sustainable economic independence. However, the position of Nigeria manufacturing sector is still below expectation in the 21st century Ku et al., (2010), posited that there is the need to prevent or control these pervasive problems in order to rejuvenate Nigerian manufacturing sector. This sector has experienced a drastic downward movement in terms of performance and this are linked to wrong application or inappropriate selection of contingency factors, as they affects non-financial performance of listed manufacturing firms in Lagos, Nigeria (Mustapha 2022). The indices needed for evaluating firms' performance are not readily available in the firms' financial statements, this was a result of inability to measure, hard to be find and impossible to measure as they are psychological in nature. (Mustapha, 2022)

This study therefore, recommends that; stakeholders of manufacturing firms should ensure that, the non-financial measures are adequately observed and sustained so that organisational strategy should be closely monitored as it relationship in the contingency factor was found to be negative and insignificant. Thus, this might be due to inadequate use of strategy alongside technology as or lack of association with long-term.

Employee training and organisational strategy needs to be improved on, as they reflect insignificant relationship with non-financial performance and if well constituted will lead to improved organisational performance.

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