

PRACTICES OF PERFORMANCE MEASUREMENT OF CONSTRUCTION FIRMS IN ABUJA, NIGERIA

Olushola Ndefo Okigbo¹, Ibrahim Saidu², Wasiu Adeniran Ola- Awo² and Anita Dzikwi Adamu²

¹Department of Quantity Surveying, Federal Polytechnic, Bida, Niger State, Nigeria

²Department of Quantity Surveying, Federal University of Technology, Minna, Nigeria

ABSTRACT

Performance measurement is an important way of keeping firm on track in achieving its strategic objectives. However, there are construction firms who do not measure their performances. This attitude has caused a lot of setback to construction firms' performance by affecting the quality and timely delivery of their products. The paper aimed at investigating the current practices of performance measurement of construction firms in Abuja and determine the extent at which the construction firms used the performance measurement frameworks in measuring performance. In achieving this aim, twenty construction firms in Abuja were sampled randomly, purposive sampling was used to sample the respondents in these firms. A total number of eighty (80) questionnaires were distributed. Seventy-two (72) questionnaires were retrieved. The opinions of the respondents were sampled using Likert scale of 5-1 starting from very high extent to low extent. Simple percentage analysis was used to determine the current practice of performance measurement of sampled construction firms. 30% agreed that they practice performance measurement to a very large extent, the remaining 70% are either practicing rarely or not practicing at all. The paper recommended adequate understanding of performance measurement by all staff in construction firms and enforcement of implementation of performance measurement in construction firms by the stakeholders.

Keywords: construction, firms, measurement, performance, practices.

INTRODUCTION

The construction industry globally is a fundamental economic sector that permeates most of the other sectors as it transforms various resources into physical, economic and social infrastructure necessary for socio-economic development (Oladinrin *et al.*, 2012). In Nigeria, the construction industry occupies an important position in the economy and has great potentials of becoming one of the biggest construction markets, yet it contributes less than other industries (Olowa, 2018). Omolo (2017) opined that the Nigerian construction industry occupies a significant portion of the capital base of the Nigerian economy, adding that its success or failure has positive or negative impacts on the nation's economy, if this statement is true there is need to focus on things that affects the growth of construction industry. There is a high correlation between economic growth and the nature of the construction industry as economic growth influences the nature of construction organisations in any economy (Ugwu and Attah, 2016). This is evidenced in the resultant construction boom in countries like the United Arab Emirates through its oil fuelled economic growth, and China through its industrial export driven growth, amongst others. The construction industry in China for example, has been driven by plans for new developments, and urban revitalization (Omolo, 2017).

The Nigerian Construction Industry (NCI) contributes only 3.2% to the Gross Domestic Product (GDP) which is very low (Paul *et al.*, 2016). The NCI is faced with problems such as construction delays, time and cost overruns, abandonment of projects at various stages of completion, lack of

skilled local labour, power shortage, unavailability of materials, corruption, unethical practices and lack of capacity to deliver all these problems is due to inaccurate or lack of performance measurement (Oyelami and Oyedele, 2015; Oyewobi *et al.*, 2015). Odediran *et al.* (2012) reported that, Nigeria construction industry contributed less to the national GDP compared to other sectors this is why Nigeria economy always suffers decline in its GDP. Consequently, the declining nature of the Nigerian construction industry as always experienced, despite the gigantic infrastructure the country possesses. The decline in the contribution of construction industry to national GDP is expected to continue except there is quick intervention by all the stake holders on the issues that causes the decline (Odediran *et al.*, 2012).

The performance of the industry has been a concern to its stakeholders who have called for regular performance measurement to enable the stakeholders monitor the performance of the industry in order to know the areas that need improvement (Munir and Baird, 2016). According to Nalwoga and Van-Dijk (2016) performance measurement (PM) is vital for continuous and progressive improvement in most businesses and organisations. Hence, Aje *et al.* (2015) noted that measurement of organisations performance helps organisations to identify the key areas of adjustment, then when a firm neglect measuring its performance it will be difficult to identify area of improvement. This can lead to bankruptcy or folding up. Measuring of firm's performance is a process of measuring the actual output result of a firm as against its intended outputs or goals and objectives (Sarhan, and Fox, 2013). It is one of the ways of improving and sustaining competitiveness in the long-term (Nalwoga and Van Dijk, 2016).

In developed countries, like the United Kingdom (UK) and United States of America (USA), performance measurement is practiced by construction organisations, because they believe it positively affects their business in the longer-term (Asuquo and Effiong, 2017). However, in developing countries like Nigeria, most construction firms do not see any reason for measuring their performances, while those that realised the need to measure their performances do it with little or less knowledge of performance measurement (Paul *et al.*, 2016). Odediran *et al.* (2012) further decries the poor growth of construction organisations in Nigeria is due to lack of accurate and regular performance measurement, this has led to unnecessary spending by government. Thus, Tunji-Olayeni (2016) and Asuquo and Effiong (2017) emphasised the need of construction firms' stakeholders having deep knowledge of performance measurement so as to help in realising an accurate measurement of performance that will improve the performance of construction firms.

Construction professionals believe that measuring of performance by construction firms will help the firms to achieve a better and improved firm which will in turn contribute more to the nation economy (Paul *et al.*, 2016). The Frequent cases of failed and abandoned public sector projects are consistently causing serious nightmare to all the stakeholders within the construction industry, these problems can be solved if there are proper monitoring of firm performance before contract are awarded to them (Iheme and Chiagorom, 2018; Ugwu and Attah, 2016; Oyelami and Oyedele, 2015). Oladimeji and Aina (2018) lamented the alarming figures of abandoned public sector projects in Nigeria.

Performance Measurement

Performance measurement is the numerical or quantitative indicator that shows how well each objective is met (Bakotić, 2016). However, performance measurement requires an extensive use

of quantitative and qualitative data, with clear definitions and specific frequency for analysis, so the choice between them depends on the purpose of the measurement and, in many cases, the availability of the data (Yang and Lu, 2013; Latiffi, 2012). The past scholarly effort has led to the modern invention, exploration and development of new things such as varieties of performance measurement systems (Bakotic, 2016) and creation of new approaches for performance measurement practices (Khan, 2016). However, as Bassioni *et al.* (2013) pointed out, performance measurement is a topic, which is often discussed but rarely defined, it can be an integral part of management and thus may have been exercised for as long as management has existed. Performance measurement is a task undertaken by most organisations using different approaches, different techniques have been employed globally to measure performance, and it has attracted attention of researchers in recent years (Molina *et al.*, 2016).

The field of performance measurement has long been dominated by the concepts of management accounting procedures and techniques as well as management control systems (Asuquo and Effiong, 2017). It started when Peter Drucker in 1954 suggested that balanced measurement systems should be developed to quantify performance and the unanticipated consequences of quantification, since then, throughout the 1980s and early 1990s, numerous authors suggested measurement frameworks that might be appropriate (Jenatabadi, 2013). The result was that a dominant research question was raised in the mid-1990s, among the management community on how to develop and deploy a balanced performance measurement system. A stream of research works followed on the design and deployment of such systems; this was resulted in a research report on development of processes for designing measurement systems and barriers to their successful implementation (Bassioni *et al.*, 2013). Performance measurement is seen as an opportunity to gain insight into the future of an organisation. It allows organisations to forecast its financial measures and to plan. The procedure is by simply looking at an organisation's current innovation and learning processes and its achievements in business (Latiffi 2012). Performance measures means that the term can be observed according to the different financial and non-financial types of objectives, which, in turn, are associated to a multiple number of indicators (Sarhan and Fox, 2013; Moullin, 2017).

According to Ryan (2018) the limitations of traditional performance measures based on costs some these limitations areas listed below:

- i. The exclusion of a strategic perspective;
- ii. The lack of focus on success factors; and
- iii. The poor consideration of stakeholders' needs and expectations.

Traditionally, the success of a company has been evaluated by the use of financial measures. Although financial measures can appear in several different forms, three of the most common ones can be explained as Profit Margins, Return on Assets (ROA) and Return on Equity (ROE) (Yang and Lu, 2013). For example, distinguishes five types of performance objectives that have on an operation system: cost, dependability, flexibility, quality and speed. In a perspective of traditional productivity, numerous measures can be found in the literature, but usually two traditional types of index productivity measures are distinguished: partial productivity and total productivity (Moullin, 2017; Ryan, 2018). Increasing number of organisations have been measuring performance areas that are not financial but could affect profitability, such as customer loyalty and employee satisfaction (Sigalas, 2015; Saunila, 2016).

Performance measurement in the construction industry

In construction industry, performance measurement is being used and implemented by most large construction firms. Its implementation can help to improve their business performance, which includes business processes, products and management of people for facilitating continuous improvement (Parida *et al.*, 2015). There is a growing awareness among organisations in the construction industry that measurement systems are important for monitoring and controlling their performance (Ryan, 2018). Sarhan, and Fox (2013) agreed on the same idea and state that performance measurement is developing in the construction industry. There are three reasons, the continuous rapid development of performance measurement in other sectors during the 1990s created a massive interest in its development for the construction industry, increasing complexity of construction projects requiring appropriate measurement tools and frameworks to improve performance and the development and challenges of construction project management as well as building technology in recent years (Yu *et al.*, 2017). Ryan (2018) concluded that, one of the six goals of Construction Best Practice is that the improvement and achievement of an organisation can be done and established through measurement. This shows that measuring performance is important and is recognised as one of the important criteria for Construction Best Practice.

The Theoretical Frameworks of Available Performance Measurement

Gutierrez *et al.* (2015) mentioned that the revolution in performance measurement that had happened since the late 1980s brought to the development of varieties of tools and frameworks that can be grouped into two categories: those emphasising self-assessment and those designed to help managers measure and improve business processes. Gambo and Said (2014) stated that self-assessment is a comprehensive, systematic and regular view of an organisation's activities and results against a model of business excellence. Its process allows the organisation to discern clearly its strengths and areas in which improvements can be made and culminates in planned improvement actions which are monitored for progress. Self-assessment implies the use of a model on which to base the evaluation and diagnostics. Some examples of self-assessment as mentioned above are the European Foundation for Quality Management (EFQM) Excellence Model (widely used in Europe) and the Malcolm Baldrige National Quality Award (MBNQA) in the USA (Mehralian *et al.* 2017; Yu *et al.*, 2017). Some examples for the second category are Capability Maturity Matrices, The Performance Pyramid, The Balanced Scorecard (BSC) (Paul *et al.*, 2016).

The European Foundation for Quality Management (EFQM) excellence mode

The EFQM Excellence Model is a national quality award to recognise deserving organisations which have excelled in quality management practices (Nalwoga and Van Dijk, 2016). It has been developed by EFQM based on the practical experiences of organisations across Europe (EFQM, 2017). Figure 1 shows all the essential management approach that need concentration so as to achieve effective performance. Since its launching in 1991, thousands of European organisations have used the excellence model as a framework for assessment of their performance (Gutierrez *et al.*, 2015).

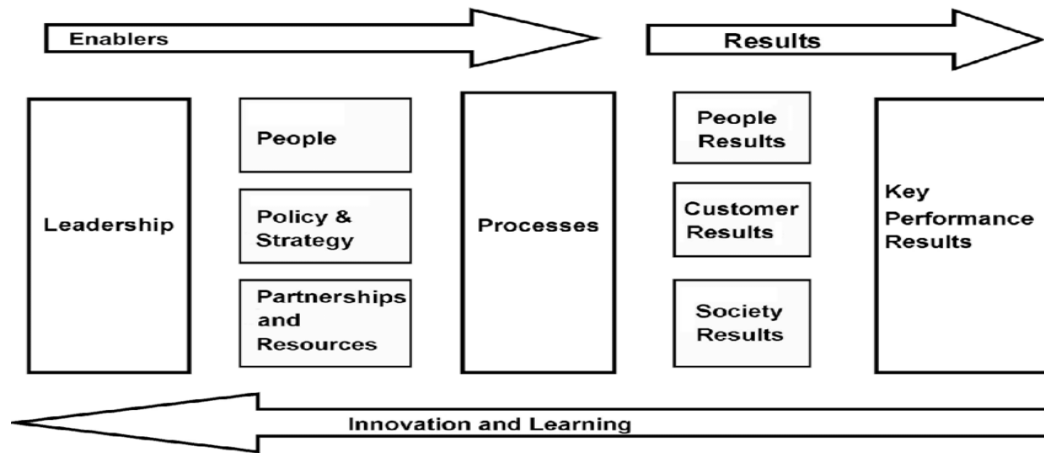


Figure. 1 EFQM excellence model

Source: EFQM (2017)

The Malcolm Baldrige national quality award (MBNQA)

The MBNQA is a National quality award used in the United States of America (USA). It was developed and used by organisations before 1997 to stimulate western organisations in other to compete better with the high levels of quality being attained by their Japanese competitors at that time. The Japanese developed the Deming Award to spur quality improvement (Ryan 2018). It is based on similar principles and methodologies of the EFQM Excellence Model which has been used in self-assessment, a technique supporting many different core values and a tool of TQM (Baird, 2017). Ryan (2018) stated that the most comprehensive list of actions needed to get to world-class quality is in the MBNQA. It consists of seven criteria: leadership, strategic planning, customer and market focus, information and analysis, human resource focus, process management and business results. These criteria of measurement using MBNQA are as show in figure 2.

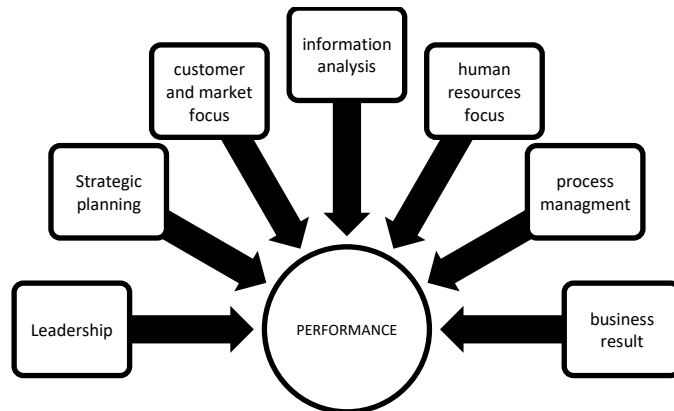


Figure 2 The Malcolm Baldrige National Quality Award (MBNQA)

Source: Ryan 2018

Sink and Tuttle model

This is a classical approach to a performance measurement system, which claims that the performance of an organisation is a complex interrelationship between seven performance criteria as follows (Kulatunga *et al.*, 2011). Effectiveness, which involves doing the right things, at the same time, with the right quality. In practice, effectiveness is expressed as a ratio of actual

output to expected output; Efficiency, which means, doing things right and it is defined as a ratio of resources expected to be consumed to resources actually consumed; Quality and it is measured at six checkpoints (to make it tangible); Productivity, which is defined as the traditional ratio of output to input; Quality of work life, which is an essential contribution to a system which performs well; Innovation, which is a key element in sustaining and improving performance; Profitability which represents the ultimate goal for any organisation.

Furthermore, Ryan (2018) states that although much have changed in industry since the model was first introduced, the seven performance criteria are still important. However, like other frameworks, it has several major limitations. For example, it does not consider the need for flexibility, which has increased markedly during the last few decades and it is also limited by the fact that it does not consider the customer perspective (Kulatunga *et al.*, 2011).

Balanced scorecard (BSC)

The BSC includes financial performance measures giving the results of actions already taken and also complements the financial performance measures with more operational non- financial performance measures, which are considered as drivers of future financial performance (Kulatunga *et al.*, 2011 and Ryan, 2018). The objectives and measures of the scorecard are derived from an organisation’s vision and strategy (Nuru *et al.*, 2017). It translates an organisation’s vision and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system.

The BSC allows managers to look at a business from four important perspectives, which are financial perspective, internal business perspective, innovation and learning perspective as well as customer perspective, this is demonstrated in Figure 5 (Soderberg *et al.*, 2011; Niven, 2014; Sigalas, 2015 and Mehranlian *et al.*, 2017). It is a framework for focusing the organisation, improving communication, setting organisational objectives and providing feedback on strategy (Ryan, 2018). Neely *et al.* (2001) clarify that although the BSC is a valuable framework and it suggests important areas in which performance measures might be useful, it provides little guidance on how the appropriate measures can be identified, introduced and ultimately used to manage business.

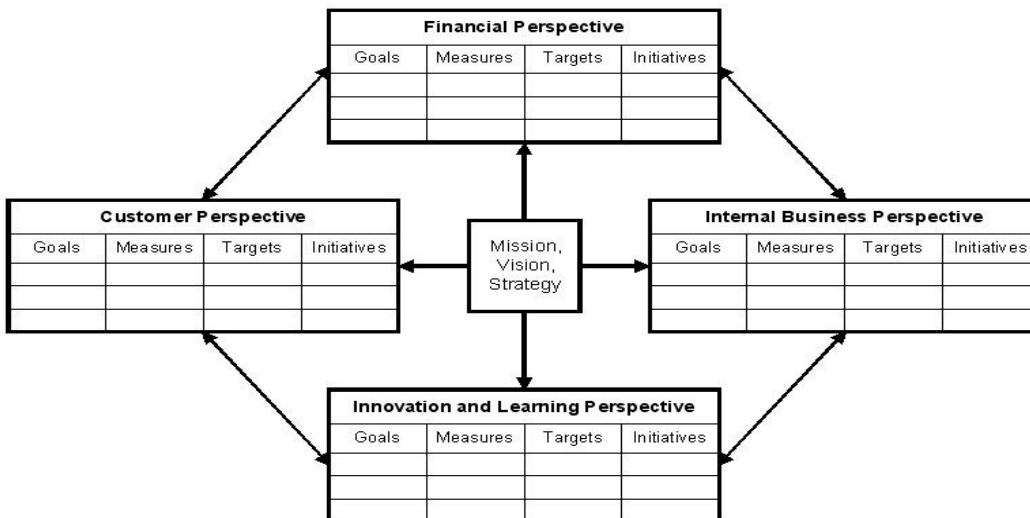


Figure 3 Balanced score card BSC

Source: Soderberg *et al.* (2011); Niven (2014); Sigalas (2015); and Mehranlian *et al.* (2017)

Performance Prism

The Performance Prism is a thinking aid and is known as a multi-faceted framework see Figure 4. It is a comprehensive measurement framework that addresses the key business issues to which a wide variety of firms, profit and not-for-profit, will be able to relate (Neely *et al.*, 2001). The performance prism was developed to overcome the shortcomings in the balanced scorecard approach. It purposefully takes a broader view of stakeholders and encourages organisations to address the following questions. Who are our key stakeholders and what do they want and need? What strategies do we have to put in place to satisfy these needs? What processes do we need to have in place to execute our strategy? Which capabilities do we need to perform our processes? What do we expect from our stakeholders in return? (Soderberg *et al.*, 2011; Niven, 2014; Sigalas, 2015 and Mehranlian *et al.*, 2017).

It consists of five-faceted performance framework, top and bottom facets are stakeholder satisfaction and stakeholder contribution respectively. The other three facets are strategies, processes and capabilities (Soderberg *et al.*, 2011; Niven, 2014; Sigalas, 2015 and Mehranlian *et al.*, 2017). The performance prism has a much more comprehensive view of different stakeholders (such as investors, customers, employees and suppliers) than other frameworks (Ryan, 2018). It includes a new dimension in identifying the stakeholders' contribution, required to maintain and develop these capabilities.

The performance prism enables a balanced picture of the business to be provided, significantly highlighting external and internal measures as well as enabling financial and non-financial measures, and measures of efficiency and effectiveness (Bititci *et al.*, 2012). It considers new stakeholders (such as employees, suppliers and alliance partners) who are usually neglected when forming performance measures (Ryan 2018).

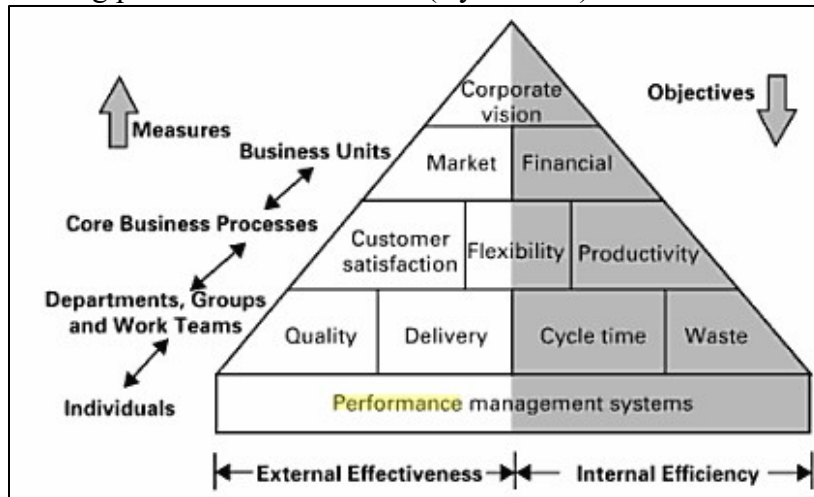


Figure 4. Performance prism

Source: Toor and Ogunlana (2010) and Upadhaya *et al.* (2014)

The choice of the appropriate tools for measuring firms performances is dependent on the understanding and the capability of the organisations that use the tools, it is advisable for firms to choose their own relevant dimensions and weightings rather than use any standard one-size-fits-all tool with more attention being paid to the process by which their own business frameworks and strategy are developed (Wu, and Liu, 2010). Furthermore, all tools developed have the same purpose and intention that is, to help firms identify areas in their organisations that need improvement for better future in business. The paper is limited to the above frameworks only because they are the major frame works available in Nigeria construction industry.

METHODOLOGY

The study covered construction firms (building and civil and heavy) that are into performance measurement, practising in Abuja, the Federal Capital Territory of Nigeria. The list of these construction firms was drawn from the Federation of Construction Industry (FOCI) directory. Abuja has been selected because it is one of the Nigeria cities that have the highest concentration of construction firms. Also, it has the highest concentration of on-going construction works. Abuja being Federal Capital Territory FCT has the highest number of constructions firms more than other cities in Nigeria, all these facts are all available in literatures (Oladimeji and Aina, 2018).

The paper used survey strategies approach with the use of survey questionnaires. The areas of study for the research are civil and building firms active and practicing in Abuja Nigeria. The survey strategies approach provides a focus for this research with the efforts to address the research problems. This provides stronger relevance in terms of the applicability of the research results and the impact that the consideration of the results could have on a specific firm.

The target population for the study were management members of construction firms practicing in Abuja Nigeria who are into performance measurement. The list of twenty (20) of these firms were drawn out from the Federation of Construction industry (FOCI). The respondents were professionals and non-professionals members who are management members of these firms. This is because they are the main people involved in performance measurement. The type of non-probability sampling adopted is purposive sampling techniques, this is because the research has interest in seeking the views and opinion of management staff of the firms under study in order to assess performances measurements practices. Therefore, the firms and the respondents were selected using purposeful sampling techniques. Simple percentage analysis and Mean Index Scores (MIS) were used to analyse the responses gotten from structured questionnaires

RESULT AND DISCUSSION

Table 1 shows the background of the respondents and the firms. The respondents have more of male (68%) than female, also the firms that had staff strength of 50 to 100 were also more (33%). This just confirms the previous studies that usually reported Nigerian construction industry as one of the employers of large labour force. The firms visited were highly experience because 42% of them have been in practice for 10 to 20 years. The majority of the respondents were degrees and higher national diplomas graduates 49%. More information on respondents' background and construction organisations profile is as shown in Table 1.

Table 1: Profile of the respondents

Gender of the respondents	Frequency	Percentage
Male	49	68
Female	23	32
Total	72	100
Age of the respondent		
20 -29	16	22
30 – 39	32	45
40 – 49	14	19
Above 50	10	14
Total	72	100
Year of firms in practice		
1 – 5	11	15
6 – 10	20	28
11 – 20	30	42
20 – 30	8	11
above 30	3	4
Total	72	100
Staff strength		
0 – 10	3	4
10 – 20	12	17
20 – 50	13	18
50 – 100	24	33
100 and above	20	28
Total	72	100
Qualifications of the respondent		
OND	28	39
BSC/HND	35	49
MSC/MTECH/MBA	3	4
PHD	0	0
Others	6	8
Total	72	100

Researchers' survey (2020).

Table 2 shows the results of the assessment of frameworks that are commonly used by the 20 firms under study. 60% of the firms were using basic score cards why none of the firms use performance prism, sink and turtle and any other performance frame works. Also 30 and 10 % use MBNQA and EFQM respectively. Many of the firms have less knowledge of any other frameworks apart from basic score cards they are using, this finding is in line with the finding of Paul *et al.* 2016.

Table 2. The performance measurement frameworks usually adopted when carrying out performance measurement in construction firms

Performance measurement frameworks	Frequency	% of Firms
Basic Score Card	12	60
Performance Prism	0	0
Sink and Tuttle Model	0	0
The Malcolm Baldrige National Quality Award (MBNQA)	2	10
European Foundation for Quality Management (EFQM) Excellence Model	6	30
others specify	0	0
Total	20	100

Researchers' survey (2020).

Table 3 shows the response on the effectiveness of the performance measurement in relation to firms' annual turnover. In the table 31% 38% and 6% agreed that the frameworks adopted by their firm's management are highly effective, very effective and effective respectively. The degree of the effective considering the percentages is very high and significant. Only 10% agreed that their frame works and the rate of returns are not significant. From the output of the result. From the result it can be concluded that if all the construction firms in Abuja carried out performance measurement there will be an improvement in their annual turnover.

Table 3. Effective is the performance measurement you adopted in relation to your firm's annual turnover

Response	Frequency	%
High effective	22	31
very effective	28	38
Effective	4	6
Rarely effective	11	15
Not effective	7	10
Total	72	100

Researchers' survey (2020).

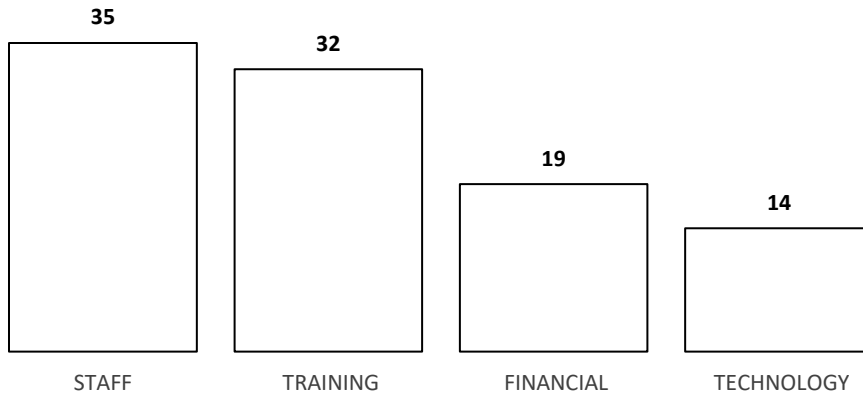


Figure 1. Resources allocated in percentage towards performance measurement in construction firms

Researchers' survey (2020).

The response on the resourced allocated towards performance measurement show in figure 1, agreed that their firms allocated staff (35%) as a resource than training, financial and technology. There is need to make these staff have adequate knowledge of performance measurement to enable then measure adequately and accurately. Training is also very important it has 32%. That shows that the construction firm have knowledge of resources that needed in carrying out performance measurement.

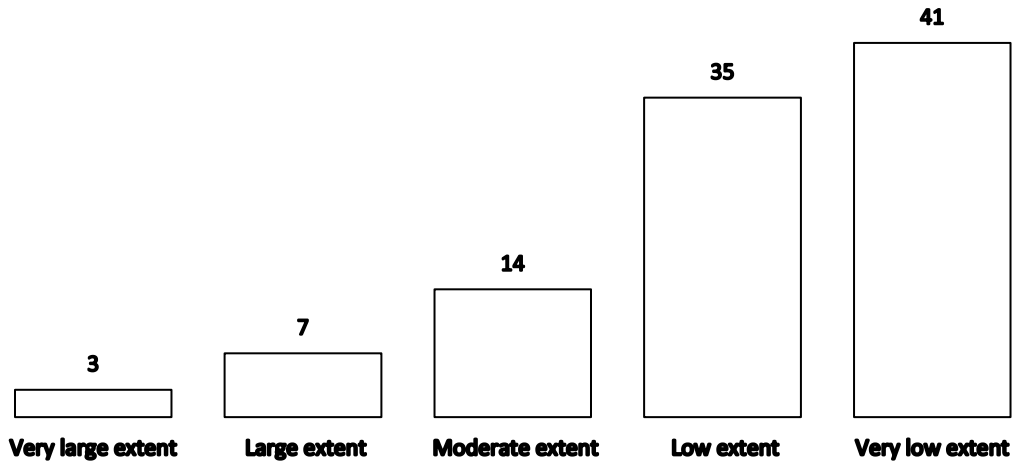


Figure 2. Response on the extent to which the construction firms used the performance measurement frameworks in measuring performance.

Researchers' survey (2020).

Figure 2 shows the responses on the extent to which these construction firms made use of performance measurement. The construction firms made use of performance measurement at a very low extent of 41%. This is highly unsatisfactorily, there is need to educate the management of the construction firms on the need to make use of performance measurement framework when carrying out performance measurement, this will enable the measurement to be accurate as indicated in the literature.

Table 4. Involvement of management members in performance measurement

Response	Frequency	%
Very high	22	31
High	14	19
Moderate	18	25
Low	12	17
Very low	6	8
	72	100

Researchers' survey (2020).

The responses on involvement of the management members in performance measurement show that the involvement of management members is very high (31%), the findings agreed with the literature on the management members being the people solely responsible for the performance measurement task.

Table 5. Factors that affect implementation of performance measurement in construction firms

Factors	MIS	Rank
Time and expense factors.	3.75	1 st
Lack of highly developed information system.	3.75	1 st
Concentration of feedback solely on short-term results	3.73	3 rd
Failure of senior management team to reach consensus on how to achieve a desired vision for their firms	3.73	3 rd
Lack of quantify results in areas that are more qualitative in nature.	3.73	5 th
Difficulty in decomposing goals for lower levels of the firms as they are not involved at the beginning of the performance measurement process	3.69	6 th
Lack of linking Strategy to resource allocation.	3.67	7 th
Striving for perfection and denying results of measurement if they conflict with those expected by the firm	3.65	8 th

Researchers' survey (2020).

The factors that affect implementation of performance measurement of the construction firms under study was as shown in table 5. Time and expense factors and lack of highly developed information system was ranked highest with mean index scores of 3,75 while striving for perfection and deny results of measurement if they conflict with the expected ones was ranked 8th with a mean index score of 3,65. This shows that time and financial power is very important when implementing performance measurement. these factors should be put into serious consideration in order to achieve a smooth and uninterrupted implementation.

Table 6. Steps taken for Implementation of performance measurement by the firms

Steps taken for Implementation of performance measurement by the firms	Frequency	%
Executive board formed performance measurement teams to run performance measurement	23	32
Executive board ensured that there is plans for implementing performance measurement	19	26
performance measurement teams have knowledge of performance measurement	10	14
performance measurement teams understand the tasks involve in carrying out performance measurement	8	11
Organisation has developed a policy for guiding the firm in implementing performance measurement activities	12	17

Total	72	100
-------	----	-----

Researchers' survey (2020).

Table 6 shows the response on the step taken by the firms on the implementations of performance measurement. Different firms take different steps. It is always advised to take the step that will suit the firms. Every firms can determine the steps that suit their firms through a thorough study by the management.

CONCLUSIONS

From the discussions of results the following conclusions were made;

1. Basic Score Card (BSC), European Foundation for Quality Management (EFQM) Excellence Model and The Malcolm Baldrige National Quality Award (MBNQA) are the three frameworks commonly used in Nigeria construction firms.
2. Carrying out performance measurement has a significant relationship with rate of return of a firm in form of annual turnover, it improves firm rate of returns since it helps in know where to improve in business.
3. Staff, training, financial and technology are the main resources that required to be committed by firms when measuring performance measurement.
4. The level at which construction firms carry out performance measurement is still very low and unsatisfactory.
5. The level at which construction firms made use of performance measurement frameworks is also very low and unsatisfactory.
6. Management members are very involved in carrying out performance measurement in construction firms.
7. Time and expense and Lack of highly developed information system are the major factors affecting the implementations of performance measurement in Nigerian construction firms
8. Executive board formed performance measurement teams to run performance measurement is the most commonly set used by the construction firms.

The use of performance measurement frameworks by Nigerian construction firms is very low. This is due to lack of adequate information system and knowledge by the management of these firms.

RECOMMENDATIONS

1. There is need for improvement on these three methods so as to provide a comprehensive framework that will be suitable for Nigeria market.
2. Management and all the stakeholders in the construction industry should enforce performance measurement among the construction firms so as to improve their turn over.
3. Adequate arrangement should be made by the management to ensure availability of the resources required for performance measurement.
4. There should be a policy by the stake holders on enforcements and implementations on the measurement of performance of construction firms.
5. The government and the stakeholders should provide adequate facilities for information system in Nigerian construction industry.
6. There is need for training and re - training of the management team to enable them handled the performance measurement frameworks adequately.

7. There is need for adequate understanding of performance measurement by all staff in construction firms.

REFERENCES

- Aje, I. O., Adedokun, O. A. & Ibironke, O.T. (2015). Analysis of project undertaken by quantity surveyors in Lagos state, Nigeria, *international journal of organisation technology and management in construction*. 7 (1), 1209 – 1216.
- Alquda, H., Poshdar, M., Rotimi, J. O., and Oyewobi, L. O. (2018). Determinants of construction organisations' performance: a systematic literature review. Proceeding of 42nd Australian Universities Building Education Association (AUBEA).
- Asuquo, C. F. & Effiong, E. F. (2017). Impact of payment problem on the performance of micro small and medium size construction contractors. *Journal of Contemporary Research in the Built Environment*, 1 (1): 35 – 46.
- Baird, K. (2017). The effectiveness of strategic performance measurement systems, *International Journal of Productivity & Performance Management*, 66(1), 3- 21.
- Bakotić, D. (2016). Relationship between Job Satisfaction and Organisational Performance, *Economic Research-Ekonomska Istraživanja*, 29 (1), 118-130, DOI:10.1080/1331677X.2016.1163946
- Bassioni, H. A., Hassan, T. M., & Price, A. D. F. (2008). Evaluation and analysis of criteria and sub -criteria of a construction excellence model, *Engineering, Construction & Architectural Management*, 15(1), 21– 41.
- Bititci, U.; Garengo, P., Dörfler, V. & Nudurupati, S. (2012). Performance Measurement: Challenges for Tomorrow, *International Journal of Management Reviews*, 14(3), 305–327.
- Etikan, I. & Bala, K. (2017). Sampling and Sampling Methods. *Biometric Biostatistics International Journal* 5(6): 00149. DOI:10.15406/bbij.2017.05. 00149
- Gambo, N. & Said I. (2014). A conceptual framework for improving cost and building contractor performances in developing countries. Paper presented at the 7th international real estate research symposium (IRERS) 2014. National institute of valuation (INSPEN) Selangor, Malaysia.
- Gutierrez, D. M.; Scavarda, L. F., Fiorencio, L. & Martins, R.A. (2015). Evolution of the performance measurement system in the Logistics Department of a broadcasting company: An action research, *International Journal of Production Economics*, 160, 1–12.
- Iheme, C. C. & Chiagorom C. F. (2018). Construction Industry and its Constraints in Nigeria *International Journal of Advanced Research in Social Engineering and Development Strategies IJARSEDS* Hard Print: 2315-8379 Online: 2354- 161X 5(1) 44 – 53.
- Jenatabadi, H. S. (2013). Impact of Economic Performance on Organisational Capacity and Capability: A Case Study in Airline Industry. *International Journal of Business and Management*. 8(17): 112.
- Kulatunga, U., Amaratunga, D. & Haigh, R. (2011). Structured approach to measure performance in construction research and development: Performance measurement system development, *International Journal of Productivity & Performance Management*, 60(3), 289 – 310.
- Latiffi, A. A. (2012). Performance Measurement For Construction Businesses A doctoral thesis submitted in partial fulfilment of the requirements for the

- award of Doctor of Philosophy of Loughborough University Publisher:© Aryani Ahmad Latiffi <http://creativecommons.org/licenses/by-nc-nd/2.5/>
- Mehralian, G., Nazari, J. A., Nooriparto, G. and Rasekh, H. R. (2017). TQM and organisational performance using the balanced scorecard approach, *International Journal of Productivity & Performance Management*, 66(1), 111-125.
- Molina, M. Á. C., Florencio, B. P., González, J.M.H. & González, J.L.G. (2016). Implementing the balanced scorecard: its effect on the job environment, *Total Quality Management & Business Excellence*, 27(1-2), 81-96.
- Moullin, M. (2017). Improving and evaluating performance with the Public Sector Scorecard, *International Journal of Productivity & Performance Management*, 66(4), 442-458.
- Nalwoga, M. M. & Van-Dijk, M. P. (2016). Organisational Performance Measurement Models for Poverty Alleviation. *International Journal of Water*, 10 (2/3): 122 -138.
- Neely, A., Adams, C., and Crowe, P. (2001), The performance prism in practice. *Measuring Business Excellence*, 5(2), 6-12.
- Niven, P. R. (2014). *Balanced Scorecard Evolution: A Dynamic Approach to Strategy Execution*, New Jersey: John Wiley & Sons, Inc.
- Nnadi, E. O. E. (2010). *Curbing corruption in public procurement Process in Nigeria*, Published MSc Thesis; Nnamdi Azikiwe University, Awka.
- Nnadi, E. O. E. (2015) *An Evaluation of Cost of Construction Projects On Nigerian Economy*. In: Ogunsemi, D. R, Awodele, O. A, & Oke, A. E (Eds). *Proceedings of the 2 Nigerian Institute of Quantity Surveyors Research Conference Federal University of Technology, Akure* 14 – 26.
- Nuru G., Llias S. & Ibrahim I. I. (2017). Client Financial Support for Mitigating Cost Factors Affecting Performance of Small Seate Contractors in Nigeria *ATBU Journal of Environmental Technology* 10(1): 119 -138
- Odediran, S. J., Adeyinka, B.F., Opatunji, O. A., & Morakinyo, K. O. (2012). Business Structure of Indigenous Firms in the Nigerian Construction Industry; *International Journal of Business Research and Management*; 3, 5, Malaysia.
- Oladimeji, O. & Aina, O. O. (2018). Financial performance of locally owned construction firms in southwestern Nigeria", *Journal of Financial Management of Property and Construction*, 23(1):112128, <https://doi.org/10.1111/JFMPC-01-2017-0003>
- Oladinrin, T., Ogunsemi, D. R. & Aje, A. O. (2012). Role of Construction Sector in Economic Growth: Empirical Evidence from Nigeria; *Federal university of technology Yola Journal of the Environment* (1).
- Olowa, O. W. (2018). Determinant of rural residential solid waste collection service in lagos state, *international journal of sustainable agricultural research , conscientia beam*. 7(1),1 – 7.
- Omolo, D. (2017). *Cost Quality And Organisational Performance In Sugar Manufacturing Firms In Kenya*. An Unpublished MBA Thesis, Submitted to The School Of Business, University Of Nairobi, Kenya.
- Oyelami, K. O & Oyedele A. J. (2015). An Overview of Performance Measurement and Productivity Improvement. In: Ogunsemi, D. R, Awodele, O.A, & Oke, A. E (Eds). *Proceedings of the 2 Nigerian Institute of Quantity Surveyors Research Conference Federal University of Technology, Akure* 332 – 341.

- Oyewobi, L. O., Abimbola, W. R. & Olabode, B. J. (2015). Measuring strategic performance in construction companies, *Journal of Facilities Management*, 13 (2): 55-65
- Parida, A., Kumar, U., Galar, D. & Stenström, C. (2015), Performance measurement and management for maintenance: a literature review, *Journal of Quality in Maintenance Engineering*, 21(1), 2 – 33.
- Paul, C. A., Zaki, Y. M., Kolo, B. A. & Adogbo, K. J. (2016). An Appraisal of Performance Measurement Practice of Construction Firms in Nigeria. *Proceedings of the Joint International Conference (JIC) on 21st Century Human Habitat: 21-24 March 2016, Akure, Nigeria*, 864-871.
- Ryan, A. (2018). Critical Realism, Performance Measurement and Management: Addressing Challenges for Knowledge Creation. *Management Research Review*, 14(3): 78-89. <http://doi.org/10.1108/MRR-05-2018-0202>.
- Sarhan, S. & Fox, A. (2013). 'Performance measurement in the UK construction industry and its role in supporting the application of lean construction concepts', *Australasian Journal of Construction Economics and Building*, 13 (1) 23-35.
- Saunders, M., R.; Lewis, P. & Thornhill, A. (2007) *Research Method for Business Students*. 4th Edition. Prentice Hall, London, UK
- Saunila, M. (2016). Performance measurement approach for innovation capability in SMEs. *International Journal of Productivity & Performance Management*, 65(2), 162-176.
- Sigalas, C. (2015). Empirical investigation of balanced scorecard's theoretical underpinnings, *Journal of Accounting & Organisational Change*, 11(4), 546 – 572.
- Soderberg, M., Kalagnanam, S., Sheehan, N. T. & Vaidyanathan, G. (2011). When is a balanced scorecard a balanced scorecard? *International Journal of Productivity & Performance Management*, 60(7), 688-708.
- Sonson, S. J, Kulatunga, U & Pathirage, C. (2017). Performance Measurement and Management in Construction: A Conceptual Framework, In 13th International Postgraduate Research Conference (IPGRC), 14 – 15 September 2017, University of Saliford UK
- Tunji-Olayeni, P., Mosaku, P. O., Fagbenle, O. I. Omuh, I. O. & Opeyemi, J. (2016). Evaluating Construction Project Performance: A Case of Construction SMEs in Lagos. *Journal of Innovation and Business Best Practices*, 20 (6): 67-87.
- Uguwu, O., & Attah, I. C. (2016) An Appraisal of Construction Management Practice in Nigeria *Nigerian Journal of Technology (NIJOTECH)* 35, (4), 754 – 760 Copyright© Faculty of Engineering, University of Nigeria, Nsukka, Print ISSN:0331-8443, www.nijotech.com<http://dx.doi.org/10.4314/njt.v35i4.9>
- Yang, H., & Lu, W. (2013) Niche comparisons: towards a new approach for analysing competition and organisational performance in the international construction market. *Construction Management and Economics*, 31(4), 307-321.
- Yu, I., Kim, K., Jung, Y., & Chin, S. (2017). Comparable performance measurement system for construction companies, *Journal of Management in Engineering*, 23(3), 131–139.