

# The Practice of Performance Measurement in Small and Medium Enterprises: Empirical Evidence from a Developed Economy Perspective

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## Abstract

This paper examines the practice of performance measurement (PM) among Small and Medium Enterprises (SMEs) within the construction industry. The study was conducted by using a questionnaire survey with random, systematic and stratified sampling being employed to select respondents from a pool of different construction companies. The data was analysed by using descriptive statistical analysis. The results suggest that the majority of SMEs do not measure their performance. Respondents identified customers' satisfaction as the most appropriate reason for implementing performance measurement. Furthermore, most of the SMEs satisfy their customers by meeting project schedule. The study further indicated that limited human resources are a major barrier that prevents SMEs from implementing performance measurement systems.

**Keywords:** Performance measurement, Small and Medium Enterprises, Survey

## 1. Introduction

Small and Medium Enterprises (SMEs) have captured a weighty and snowballing attention from policy makers in both developed and developing countries (Dalrymple, 2004). This is because SMEs contribute significantly in generating employment, promoting innovation, creating competition and generating economic wealth (Bannock, 1981) in (Analoui & Karami, 2003). Hence, a number of researches tend to investigate SMEs performance and critical success factors (Wu, 2009).

All through the preceding two decennaries, a plethora of industries, predominantly manufacturing, have seen the need to introduce contemporary approaches and practices to move conventional paradigms with the view to enhancing their performance. This resulted in the establishment of new ideologies including concurrent engineering/construction, lean production/construction to name but a few. The principal motivator behind those ideologies is to improve an organisation's performance either internally or externally within its marketplace. This necessitated the need for the reconsideration of performance management systems by means of effective PM (Kagioglou, Cooper, & Aouad, 2001). A business enterprise may well measure its performance by means of financial and non-financial measures. The financial measures comprise of profit before tax and turnover whereas the non-financial measures centre on matters relating to customers' satisfaction and customers' referral rates, delivery time, waiting time and employees' turnover. That said, a few of the difficulties that SMEs face is that of aligning performance measures with business strategies, structures and enterprise culture, kinds and number of measures to adopt (Phihlela, Odunaike, & Durban, 2012).

Researchers have dedicated a reasonable amount of interest in the domain of PM, especially in the last two decades. The old proverb says: "You cannot manage what you don't measure." This is exclusively correct for innovations that precipitate the necessity to import focus intelligibility, openness and control, especially in the early, inventive phase of the innovative process (Zizlavsky, 2014, p. 211). In this regard,

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organisation performance seemingly impacts the activities that enterprises engage on for their future direction (Phihlela, Odunaike, & Durban, 2012). PM is seen as playing a fundamental role in the efficacious and effectual management, planning and control cycle of organisations (Folan & Browne, 2005; Kennerley & Neely, 2002). It plays a major role in mellowing strategic plans, assessing the achievement of enterprise objectives, and recompensing managers (Jean-Francois, 2006). Hitherto, several managers nurse the opinion that traditional accounting-based measurement is not able to perform these functions (Ittner & Larcker, 1998). As maintained by Merchant and Van der Stede (2007), performance measures permit enterprises to apportion economic duties and decision rights, set performance objectives in addition to rewarding objectives accomplishment.

PM may contribute significantly to the development and growth of SMEs, nevertheless, the use of PM among SMEs represents significant gaps in theoretical and empirical knowledge (Schmitz & Platts, 2004; Brem, Kreusel, & Neusser, 2008; Garengo, Biazzo, & Bititci, 2005). This is because SMEs do not put emphasis on PM when compared to their larger counterparts (Gulbro, Shonesy, & Deyfus, 2000; Anggadwita & Mustafid, 2014).

This study aims at examining the practice of PM within SMEs by looking at the construction industry in South East London. The paper is outlined as follow. Section one describes the introduction of the study. Section two reviews literature on the definitions of performance measurement and SMEs. It further describes performance measurement in general and specifically performance measurement in SMEs. Section three examines the methodology used within the study. Section four discusses the empirical results. The last section describes the conclusion, contributions to knowledge, policy implications, limitations and suggestions for further research.

### **Purpose and objectives of the Study**

This study seeks to examine the practice of PM amongst SMEs in the construction subsector. In pursuance of the purpose of the study, the following main and specific objectives would be met: The principal purpose of this study is to examine the PM in SMEs in the construction industry. The specific objectives are:

1. To investigate the types of performance measurement implemented by the SMEs
2. To investigate the reasons for implementing performance measurement.
3. To examine the ways owner/managers meet customer satisfaction.
4. To examine the barriers preventing SMEs from conducting performance measurement.

### **Research Questions**

The study aimed to answer four main questions

1. What performance measurement systems are implemented by the SMEs in the construction industry?
2. What are the reasons for conducting performance measurement?
3. How do the owner/managers meet customer satisfaction?
4. What are the barriers hindering the use of PM?

## **2. Literature Review**

### **• Definition of Terms**

#### **○ Definitions of Small and Medium Enterprises**

Within the SMEs landscape, it is problematic to decide on a single agreed definition of the term. This difficulty mirrors the nature of SMEs classifications which can be used differently to businesses including the manufacturing, agricultural and service sectors (Hammer, et al., 2010). Several criteria such as numbers

of employees, the volume of output or sales, the value of assets employed and the energy have been used to define SMEs (ILO, 1998 in Kanu, 2009).

According to Rhodes (2012, p. 2), SMEs in the UK are defined as follows:

- “micro business is one with less than 10 employees”;
- “a small business is one with less than 50 employees”;
- “a small or medium sized enterprise is one with less than 250 employees”.

#### ○ **Definitions of Performance Measurement**

In spite of the fact that PM has been used ever since the 1970s, there is no generally accepted definition of the term (Metawie & Gilman, 2005). Nevertheless, the definition of performance measurement is still the subject of debate.

As stated by Balridge (2011:2012) in Phihlela et al.(2012, p. 2), PM can be explained in the view of considering the definitions of the words 'performance' and 'measurement'

1. Performance refers to output results and their outcomes obtained from processes, products and services that permit evaluation and comparison in relation to goals, standards, past results and other organizations. Performance can be expressed in nonfinancial and financial terms.

2. Measurement “refers to numerical information that quantifies input, output and performance dimensions of processes, products, services and the overall organization outcomes”.

Bailie and McAdam (2002), defined PM as the development of indicators and the collection of data to describe report and analyse performance. Neely (1998, pp. 5-6) defined PM as “the process of quantifying the efficiency and effectiveness of past actions through acquisition, collation, sorting, analysis, interpretation and dissemination of appropriate data”

#### ○ **Performance Measurement: an Overview**

The importance of PM has grown exponentially, as clearly stated by many studies examining areas such as benchmarking, total quality measures and balanced scorecards (Hussain & Hoque, 2002) as innovative PM systems following several criticisms impelled a reassessment and development of performance systems (Khan, Baharun, Abdul Rahim, & Zakuan, 2011). The revolution of PM has stimulated many enterprises to implement the first-hand PM, in most cases at a significant cost (Kennerley & Neely, 2002). Effective PM practice for any enterprise is a major determinant of success in the modern day globalised market (Sharma, Bhagwat, & Dangayach, 2005). Today’s global competition precipitated the need for most organisations to improve performance by measuring it. For that reason, enterprises adopt several models to evaluate the PM that will yield the most attractive return on their investment. Several things are thought to be involved in organisations’ performance including activities needed to ensure that goals are consistently met in an effective and efficient manner. An example of this includes organisation structure, control and management with the aim to deliver the needs of their clients and stakeholders (Magnus & Fredrik, 2000).

PM points out the key factors of the organisation. Concurrently, it specified the manner employees work to achieve the maximum to the benefit of the organisation. Accordingly, it can be perceived as a compartment tool for the workforce (Neely, Adams, & Kennerley, 2002), in addition to using it as a motivating tool for the employees (Amaratunga & Baldry, 2002). As stated by Toni and Tonchia (2001) in Chmelíková(2011, p. 168),PM model includes “hierarchical/vertical (cost and non-cost performance measures on different levels of aggregation), balanced scorecard/tableaux de-board (several separate performances are considered independently), internal and external performances”.PM was much evident in large industrial organisations with a concentration on the accomplishment of a restricted amount of fundamental financial measures (Johnson & Kaplan, 1987). Nonetheless, in the 1980s the increased interest on PM in organisations became noticeable. This is followed by the development of several PM models.

The primary pathway of the evolution of PM consists of a) Operations to strategic; b) measurement to management; c) Static to dynamic, and d) shareholder values (economic-profits) to stakeholder focuses. This resulted in change and shift in competitive, social, environmental, organizational and managerial factors (Srimai, Radford, & Wright, 2011). In sharing this view, Ghalayini and Noble (1996) stated that PM consists of two stages. The first stage started in the late 1880s and ended in the 1980s. At this stage, the attention was focused on profit, return on investment and productivity. The stage revealed the change in competitive advantage from product quality to a marketing-and-strategy view. This enables organizations to move their focus from production to the strategic planning (Srimai, Radford, & Wright, 2011). The second stage started in the late 1990s which were as a result of the saturation of the marketplace with PM innovations. The previous authors added a third stage. This stage was followed by volatile and rapid changes in the 1990s and compelled senior managements to think and manage uncontrollable factors. It highlighted the need to understand and realize the significant of stakeholders in running the business.

- **Performance Measurement in SMEs**

Amir, Auzair, and Ismail(2014);Rezaei et al. (2011);Garengo et al.(2005) alluded that PM is a key tool in the decision-making process and management practices of SMEs. Yet, the review of literature had shown that little research had been conducted on SMEs with regards to PM when compared to large enterprises(Biazzo, Bitichi, & Garengo, 2005; Anggadwita & Mustafid, 2014; Hudson, Smart, & Bourne, 2001; Atkinson C. , 2007; Chmelíková, 2011)This view is shared by several researchers including Lynch and Cross(1991)who maintained that PM tools were designed primarily for large organisations. However, the growing competitive environment, tendency of growing in dimension and evolution of quality concept drew attention to perpetual improvement followed by the significant developments in information and communication technologies are vital changes in recent times that created an enabling environment for the use of PM within Small and Medium Enterprises (Taticchi, Cagnazzo, & Botarelli, 2008).

PM system does not only help SMEs to keep track of and reports previous performance but at the same time guides them in the strategic positioning of their enterprises(Garengo, Biazzo, & Bititci, 2005; Taticchi, Tonelli, & Cagnazzo, 2010).As intimated by Jamil and Mohamed(2011, p. 204), organisational performance measurement was set up particularly for SMEs and is premised on three main principles including: “alignment, process thinking and practicability”. Having said this, the following obstacles: shortage of time, inability of entrepreneurs to participate fully, restricted human and capital resources, absence of strategies prevent the effective implementation of PM in SMEs(Tenhunen, Rantanen, & Ukko, 2001; Noci, 1995; Ghobadian & Gallea, 1997; Brouthers, Andriessen, & Nicolaes, 1998; Manville, 2007).

As argued by Sharma, Bhagwat, and Dangayach(2005), SMEs entrepreneurs recognised the valuable contribution of PM in everyday business operations, yet they fail to give it the needed attention. Sharing this view, Barnes, et al.(1998) and Rantanen & Holtari (2000) maintained that aside from the afore stated barriers, SMEs hardly implement combined PM. Owing to the lack of information on the existence of PM models (Lynch & Cross, 1991).

PM among SMEs is informal, and unplanned and is used to solve particular problems (Barnes, et al., 1998). It is being used by SMEs owner/Managers to react to uncertainty, innovate products and services, improve their process as well as benchmarking against potential competitors (Garengo, Biazzo, & Bititci, 2005). In the mean, the successful implementation of performance measurement in SMES depends upon the selection and utilisation of the vital critical performance indicators (Hvolby & Thorstenson, 2000) coupled with clarification of corporate vision and strategy, support and commitment of the owner/managers, key employees as well as the main aim of the performance management system (Tenhunen, Rantanen, & Ukko, 2001).

Jamil and Mohamed (2011) explained that the development of an effective performance measure assessment tool for SMEs demands the recognition of the appropriate PM characteristics. This will enable SMEs to effectively and competently measure and manage their performance. As stated by Sapienza and Grimm (1997), it is very difficult and complex to measure the performance of SMEs. This is due to

numerous challenges comprising difficulties of collecting performance information and interpretation of financial data which is influenced by industry-related factors and possible source bias (Wang & Ang, 2004; Brush & Vanderwerf, 1992). The majority of SMEs prefer day –by- operations. This is because owner/managers lack the resources to undertake complete performance (Stephens, 2001).

Due to the stiff competition, firms including SMEs encounter in globalized and turbulent markets, the improvement in information and communication technologies in addition to the belief that PM tools are useful in identifying weakness, clarifying objectives and strategies, and improve management processes, there is need for SMEs to monitor and understand their performance (Amir, Auzair, & Ismail, 2014). This is because by monitoring, measuring and understanding their performance, Small and Medium Enterprises within the construction sector have the potential to compete in fluid environments and sustain competitive advantage (Jamil & Mohamed, 2011; Underdown & Tallury, 2002). Thus, PM system is vital in the day-to-day management of SMEs (Hudson, Bennet, & Bourne, 1999; Bassioni, Price, & Hassan, 2004). Also, competitiveness within the construction sector can be elevated only when contractors increase the usage of performance measurement tools as a way to support performance improvement programmes.

### **3. Research Methodology**

Following Kothari (2004), this study used a descriptive and interpretivistic survey design. It aims at investigating the practice of performance measurement in SMEs in the construction industry. With respect to the research questions and the purpose of this study, the study employed quantitative research method. Following Khan et al. (2011); Atkinson and Brown (2001), data were collected by means of structured questionnaires of predominantly Likert Scale type. This makes it possible for the researcher to copiously collect a considerable amount of information (Graveter & Forzano, 2006; Branine, 2008). The sampling techniques adopted were random, systematic and stratified sampling from a pool of different construction companies. The target population was the Small and Medium Enterprises within the construction sector in South East London. A sample of 200 Small and Medium Enterprises was obtained for the survey. However, 150 questionnaires were successfully administered to managers. This gives an effectual response rate of 75%. The data were analysed using Statistical Package for the Social Science (SPSS) software and by the same token presented in frequencies and percentage tables. The SPSS was employed for analysing the data because it is believed that it improves validity and reliability in analysing such data (Branine, 2008).

### **4. Empirical Results**

This section aims to present a summary of the empirical results. It includes the results of data collected empirically with the help of primary data employing questionnaires. Data were analysed and presented in figures and tables.

#### **• SMEs Performance Measurement Rate**

Studies have shown that the overwhelming SMEs rarely measure their performance (Barnes, et al., 1998). In relation to this, the study sought to find out if SMEs measure their performance. The findings in Figure 4.1 showed that 60% of SMEs do not measure their performance. This confirms the findings by Rantanen and Holtari (2000) and Khan et al. (2011) that the majority of SMEs do not implement integrated PM systems. However, 40% of the respondents measured their performance.

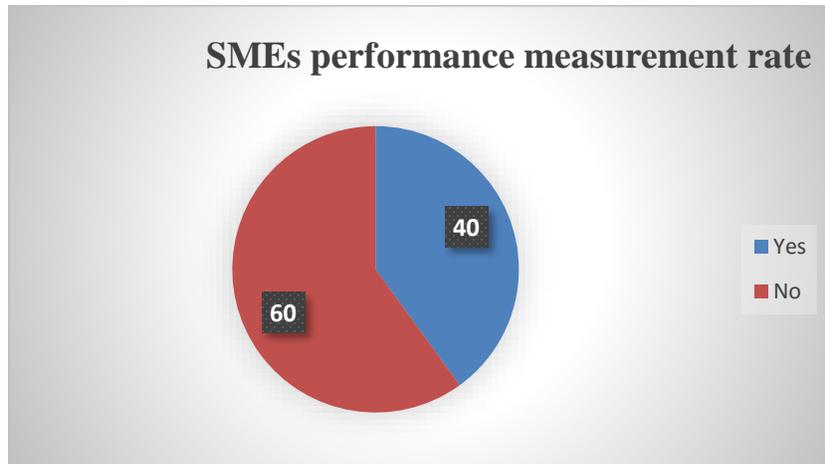


Figure 4.1: SMEs Performance Measurement Rate

- **Performance Measurement Time Span**

The study further sought to establish the PM time span. In Figure 4.2, the results indicated that 33.3% of the respondent measured their performance every 1-2 years, 30% every 2-3 years and 24% measured performance every 3-5 years. On the contrary, 12.7% of the SMEs never measured their performance.

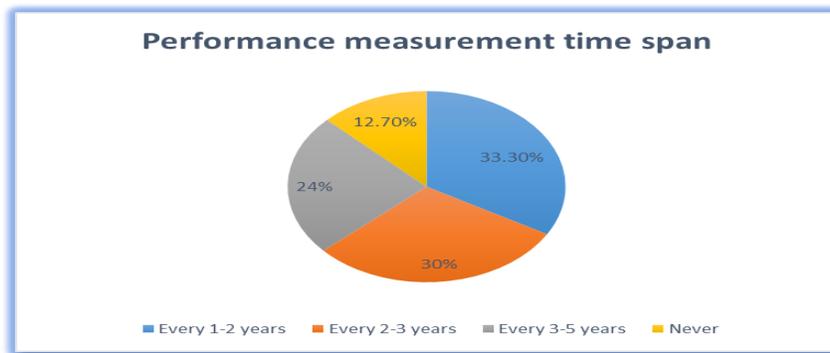


Figure 4.2: Performance measurement time span

- **Types of Performance Measurement**

The reason behind the analysis in Figure 4.3 below was to know the types of PM adopted by the SMEs. It is assumed that implementing the right performance measures will serve as a supporting mechanism to managerial development in SMEs. In that regard, 34% of the respondent indicated that they implemented customer satisfaction measurements. Some of the respondents (26%) employed financial performance measurement. This finding does not support the findings of Pooe (2007), who stated that financial measurements are the most popular and extensively used systems of PM. About 19% measured the performance of the human resources in the enterprises. More than 15% of the respondents had adopted process management measurement. Only 5.3% used strategy measurement. The implication here is that performance measurement systems influenced the respondents' behaviour and, as a result, affect the successful implementation of strategies (Skinner, 1971).

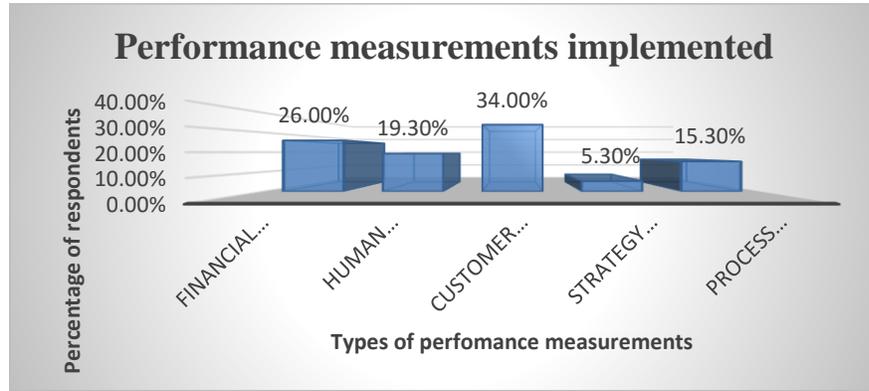


Figure 4.3: Types of Performance Measurement Implemented

• **Models use to Measure Performance**

There are various PM models that play a significant role in providing support to managerial development among SMEs (Garengo, Biazzo, & Bititci, 2005). On this subject, the study further investigated the PM models used by SMEs in the construction industry (Table4.1). The most popular model is the European foundation for quality management which was used by 61.3% of the respondents. The second most popular model was the balanced scored card. This was used by 20% of the respondents. Nevertheless, the performance pyramid system was used by 7.4 % of the respondents. Conversely, 4.7% of the respondents used the integrated performance measurement system while the service industries employed 3.3% of PM. About 2.0% stated that they used the performance prism model. Although the organizational PM was particularly developed for SMEs (Chennell, et al., 2000), it is the least popular model. It was used by 1.3% of the respondents. This is an indication that the organizational PM model attracts little attention in the SMEs construction industry.

Table 4.1: Models used to Measure Performance

| Attributes  | Frequency  | %          |
|---|------------|------------|
| Performance pyramid system                            | 11         | 7.4        |
| Performance measurement system for service industries | 5          | 3.3        |
| Balanced scorecard                                    | 30         | 20.0       |
| Performance prism                                     | 3          | 2.0        |
| Organizational performance measurement                | 2          | 1.3        |
| Integrated performance measurement system             | 7          | 4.7        |
| European foundation for quality management            | 92         | 61.3       |
| <b>Total</b>  | <b>150</b> | <b>100</b> |

**Reasons for Implementing Performance Measurement Systems**

The study further attempted to investigate the reasons Small and Medium Enterprises within the construction sector implement PM. Consequently, the respondents were asked to indicate their reasons for implementing PM (See Table 4.2). The results revealed that meeting customer satisfaction (42.6%) was seen as the most appropriate reason for implementing PM. This implies that customer satisfaction is very important to the success of SMEs. Nevertheless, the finding is in contrast to Wu (2009) findings which found that SMEs do not focus on customers. Specifically, 17.3% of the respondents implemented performance measurement in order to achieve alignment with organizational goals and objectives. The results also reveal that 8.7% of the respondents implemented PM in order to change business strategy. Regarding giving feedback to employees to monitor their performance levels as being a reason for implementing performance measurement, 6.7% of the respondents agreed with the statement. It can also be seen that 6.0% of the respondents are using performance measurement systems because they want to determine the vision and

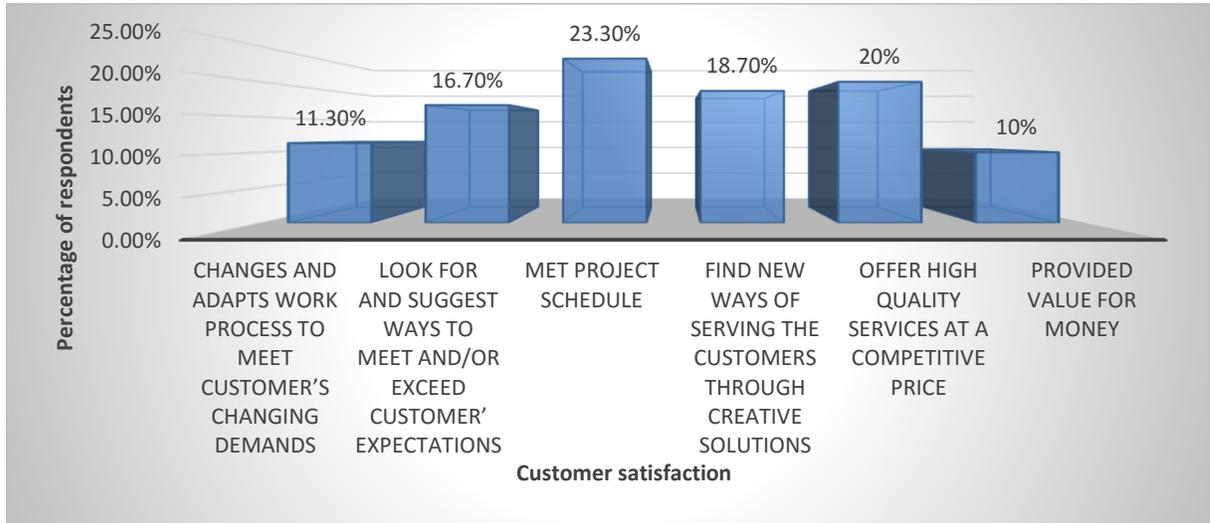
direction of their enterprise. In the same vein, 5.3% are employing performance measurement systems on the grounds that they wanted to emphasize on quality obstacles as well as identifying areas that require urgent consideration. On the subject of deciding on the reward to give workers and the key changes affecting the enterprise as the motives for employing PM systems, 4.7% of the respondents agreed. With regards to justifying the use of resources as a reason for implementing PM, 4.0% of the respondents supported the statement.

**Table 4.2: Reasons for Implementing Performance Measurement**

| Attributes  | Frequency  | %          |
|---|------------|------------|
| To meet customer desires  | 64         | 42.6       |
| Give feedback to employees to monitor their performance levels                                  | 10         | 6.7        |
| Emphasising on quality obstacles as well as identifying areas that require urgent consideration | 8          | 5.3        |
| To change business strategy   | 13         | 8.7        |
| Achieving alignment with organizational goals and objectives                                    | 26         | 17.3       |
| Establishing the usage of factors of production   | 6          | 4.0        |
| To decide on the reward to give workers   | 7          | 4.7        |
| To determine the vision and direction of the enterprise   | 9          | 6.0        |
| To determine the key changes affecting my enterprise  | 7          | 4.7        |
| <b>Total</b>  | <b>150</b> | <b>100</b> |

• **Customer Satisfaction**

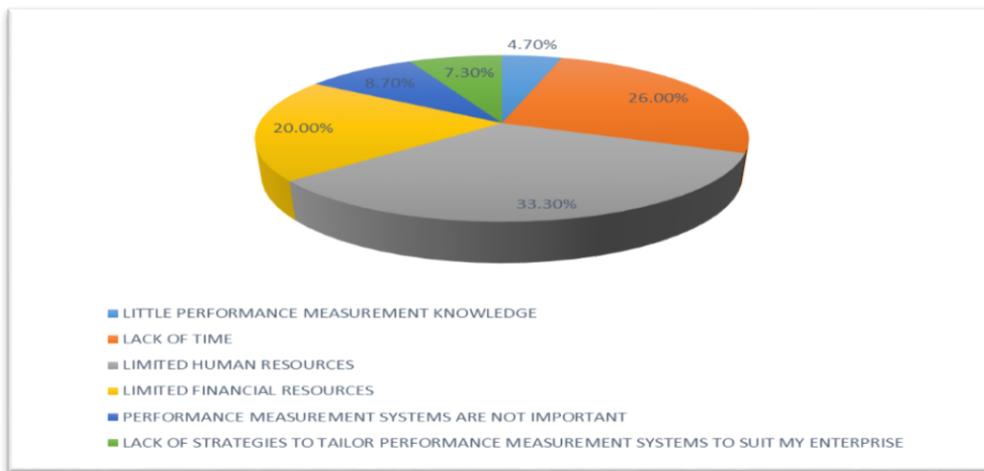
Customer satisfaction is a crucial element in determining the successful relationship between the enterprise and its customers. It is one of the main elements influencing customers’ loyalty (Kantsperger & Kunz, 2010; Yap, Ramayah, & Shahidan, 2012). With that said, the SMEs in the construction industry make significant contributions to a country’s economic development. Therefore, in order to compete and maintain business sustainability, SMEs in the construction industry have a duty to improve their customer satisfaction (Khojeh, Mohseni, & Samadi, 2013). In view of this, the study examined the ways owner/managers meet customer satisfaction. The results in Figure 4.4 showed that 11.3% of the respondents meet customer satisfaction by changing and adapting the work processes, 16.7% look for and suggest ways to meet or exceed customer satisfaction, 23.3% of the respondents meet customer satisfaction by working within the ambit of the project, 18.7% find ways of meeting customer satisfaction through creative solution, 20% specified that they satisfy their customers by offering high-quality services at competitive prices and 10% that they provide value for money. These results are significant because as stated by Bhave (2002) enterprise success is about customer retention which is based on customer satisfaction.



**Figure 4.4: Customer satisfaction**

**• Barriers to Using PM**

The study further sought to ascertain the barriers that prevent the use of PM within the SME sector. The results in Figure 4.5 revealed that 4.7% of the respondents mentioned that little PM knowledge prevented them from measuring the performance of their enterprises. Similarly, 26% of the respondents attributed the lack of time as a justification for not practicing PM. This finding is in tandem with those of Tenhunen et al. (2001) that shortage of time for non-functioning activities prevented SMEs from measuring their performance. Most of the respondents (33.3%) did not measure the performance of their enterprises as a result of lack of personnel. This confirms studies conducted by Hvolby and Thorstenson (2000), Tenhunen et al (2001) and Barnes et al(1998) that SMEs do not engage in PM practice because of lack of qualified employees. Moreover, 20% said they failed to measure their enterprises' performance because of limited financial resources. This finding is in agreement with those of Ghobadian and Gallear(1997), Hudson et al.(2001) and Tenhunen et al (2001) that lack of financial resources is a major barrier preventing SMEs from implementing PM systems. More than 8% failed to practice PM since they are not important. On the whole, the respondents expressed the lack of strategies to tailor PM systems to suit their enterprise with a frequency of 7.3% as an obstacle to measuring performance.



**Figure 4.5: Barriers to implementing performance measurement**

## **5. Conclusions, Contributions, Policy Implications, Limitations and Future Research**

Based on the analysis, the following conclusions are drawn from the study.

Most of the SMEs in the construction industry in South East London do not measure their performance. The results are in line with the conclusions of Barnes et al.(1998), Rantanen and Holtari (2000) that the majority of SMEs do not measure their performance. Also, the study indicated that more than 33% of the respondents measured their performance every 1-2 years. In addition, the study showed that most of the SMEs (34%) implemented customer satisfaction measurements. The European foundation for quality management performance is the most widely used PM model among the respondents. This finding is in contraction to the finding of Chennell, et al. (2000)who found that organizational PM was put forth particular for SMEs. Customer satisfaction was the most appropriate reason for implementing PM. Additionally, most of the SMEs satisfy their customers by meeting project schedule. The study also finds that the limited human resources area major barrier that prevents SMEs from implementing performance measurement systems(Hvolby & Thorstenson, 2000; Tenhunen, Rantanen, & Ukko, 2001; Barnes, et al., 1998; Garengo, Biazzo, & Bititci, 2005).

This study contributes to knowledge regarding PM within SMEs. It is believed that the study is significant to academics that have a heightened interest in SMEs. It is also believed that the findings of the study may be useful to the SMEs in the construction industry that has the intentions to implement PM systems. The study is one of the few researches that is ever conducted. Therefore, it fills a research gap regarding PM within the construction sector. This study employed a quantitative method approach not often seen in many SME studies in the construction industry.

Looking at the important of PM, there is a need for SMEs to promote PM since it contributes significantly to quality management. The findings from this study have shown that SMEs in the construction industry are resilient in meeting customer satisfaction. A number of studies have indicated that customer satisfaction is a major element in maintaining and retaining customer's loyalty (Kantsperger & Kunz, 2010; Yap, Ramayah, & Shahidan, 2012; Mostaghel, 2006) and have an impact on the enterprise. This is because the sustainability and profitability of any enterprise arecontingents on the good relationship with its customers(Hisaka, 2011).

The study has several limitations. First, the lack of money did not permit the study to cover all the SMEs in London. A second weakness of the study is individual reporting, single respondent nature of the survey. The sample consists of managers who indicated the PM systems of their enterprises. A third weakness of the study focused on the practice of PM in SMEs in the construction industry without comparing the practice of PM in SMEs with other cities in England.

Within this study, few performance variables were investigated. Therefore, future research should examine more performance measurement variables influencing performance. The study principally employed a quantitative method of data collection. Future research using mixed methods approach is required to determine the impact of PM on SMEs. The study focused on few SMEs, as a result, future research should draw randomly larger samples of SMEs within construction sector so as to examine the practice of PM.

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