STRATEGIC MEASUREMENT SYSTEM DESIGN AND PERFORMANCE OF MEDIUM SIZED SERVICE FIRMS IN KENYA

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DOCTOR OF PHILOSOPHY

(Strategic Management)

JOMO KENYATTA UNIVERSITY

OF

AGRICULTURE AND TECHNOLOGY

2022

Strategic Measurement System Design and Performance of Medium Sized Service Firms in Kenya

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A Thesis Submitted in Partial Fulfilment of the Requirements for the Degree of Doctor of Philosophy in Strategic Management of Jomo Kenyatta University of Agriculture and Technology

2022

DECLARATION

This thesis is an original work and has not been presented for a degree in any other University.

Signature…… Date…….

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This thesis has been submitted for examination with our approval as University supervisors.

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DEDICATION

This work is dedicated to my entire family. To my mum Naomi and late dad Philip for their love and constant guidance through the journey of life and having taught me the importance of education. To my loving and ever supportive wife Glory and children, Kayla, Phil, Phoebe, and Stephanie for their love and understanding for the long hours I denied them while trying to balance family, work, and studies.

ACKNOWLEDGEMENT

I acknowledge my supervisors Dr. Agnes Njeru (PhD), and Dr. Esther Muoria (PhD) for their commitment and continuous guidance throughout the process of developing this thesis. They offered great insights, which shaped my view of research and the subject matter. It is with their leadership that this work has come to fruition.

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LIST OF ACRONYMS AND ABBREVIATIONS

AVE	Average Variance Extracted
BSC	Balanced Score Card
EFA	Exploratory Factor Analysis
D-W	Durbin-Watson
GDP	Gross Domestic Product
GOK	Government of Kenya
GVA	Gross Value Added
KNBS	Kenya National Bureau of Statistics
KMO	Kaiser-Mayer-Olkin
MSME	Micro, Small and Medium Establishment
PMS	Performance measurement System
ROA	Return on Assets
ROE	Return on Equity
RBV	Resource Based View
SCA	Sustainable Competitive Advantage
SME	Small and Medium Enterprises
SMS	Strategic Measurement System
SPMS	Strategic Performance Measurement System
SPSS	Statistical Packages for Social Sciences
UK	United Kingdom
USA	United States of America

VIF Variance Inflation Factor

WB World Bank

DEFINITION OF TERMS

Alignment	Extent to which two or more organizational dimensions meet theoretical norm or mutual coherence (Santa, *et al.,* 2010).
Breadth	Scope of activities and elements included in a performance measurement system (Bäuml, 2014).
Customer Value	Evaluation done by customers to assess the usefulness gained from products or services for the necessary cost (Prastiwi, Ridwan, Halik, & Kartika, 2018).
Depth	Level of detail to which performance measures and indicators are applied (Garengo, Biazzo, & Bititci, 2005).
Design	Composition and arrangement of elements that constitute a system (Bäuml, 2014).
Effect	Tangible and intangible impacts or influence or consequences of one factor or its action on another (Federation for the Humanities and Social Sciences [FHSS], 2014).
Firm Failure	A venture involuntarily ceasing its operations due to its inability to attract new debt or equity funding to reverse decline (Pretorius, 2009).
Medium Sized Firms	Enterprises having between 50 and 99 employees (Government of Kenya [GOK], 2005) and annual turnover of less than Kenya Shillings 2.5 billion (KRA, 2016).
Organizational Context	Situational factors that affect the occurrence and meaning of organizational behaviour as well as functional relationships between variables including its size, strategy, technology, structure, culture & environment (O'Toole & Meier, 2015).

Performance	The ability of an organization to utilize its resources to achieve organizational goals in an effective, efficient, and ethical manner (Sosiawani, *et al.*, 2015).
Sustainable Performance	Firm's ability to create a continued flow of benefits through application of unique value creation strategies asynchronously with potential competitors not being able to copy such strategies (Hakkak & Ghodsi, 2015).
Service Firm	An organization that employs productive resources to obtain intangible products, which are offered in the market with the aim of making a profit (Sosiawani *et al.*, 2015).
Strategy	An adaptive, joint means of deploying and using resources at the disposal of an organization for long term, legitimate and ethical benefits to the enterprise, its members, and other stakeholders (Landroguez, Castro, & Cepeda-Carrión, 2011).
Strategic Capability	Ability to effectively and successfully organize and deploy distinctive resources and capabilities to achieve sustainable competitive advantages for the organization's long-term survival and increase in value over time (Huikkola & Kohtamäki, 2017).
Strategic Measurement System	Process of collecting, analysing, and reporting of the performance information needed to manage processes and competencies that produce significant long-term organizational competitive advantages (Sousa, Aspinwall, & Rodrigues, 2006)
Strategic Measurement System Design	Composition and arrangement of the elements used in the process of collecting, analysing, and reporting of the performance information needed to manage processes and competencies that produce

significant long-term organizational competitive advantages (Sousa, *et al.*, 2006; Bäuml, 2014)

Value Added Value created by production process which is derived as the difference between the industry output at basic prices and the intermediate consumption of the industry at purchasers' prices within the accounting period (KNBS, 2016).

ABSTRACT

Strategic measurement systems (SMS) are essential management tools for operationalizing firm strategy. One of the obstacles to better performance of small and medium sized firms, is lack of adequate strategic capabilities linked to adoption of inappropriately designed SMS, which do not offer comprehensive information for the development and execution of sustainable competitive strategies. Studies on the subject have primarily focused on identifying the types of measures without examination of how properties of these measures influence performance. Moreover, most studies have focused on large manufacturing firms. The study sought to establish the effect of SMS design on performance of medium sized service firms in Kenya. Specifically, the study sought to determine the effect of breadth of SMS on performance of medium sized service firms in Kenya; establish the effect of depth of SMS on performance of medium sized service firms in Kenya; investigate the effect of strategic alignment of measurement system on performance of medium sized service firms in Kenya; examine the effect of flexibility of SMS on performance of medium sized service firms in Kenya; establish the mediating effect of customer value on the relationship between the SMS and performance of medium sized service firms in Kenya; and establish the moderating effects of organizational context on the relationship between the SMS and performance of medium sized service firms in Kenya. The study was descriptive and was guided by resource-based view, dynamic capabilities, organizational learning, and decision-making theories. The target population was 3,058 registered firms' employing between 50 and100 in the service sector in Kenya as at 2016. A sample size of 323 was derived using Krejcie and Morgan sampling table and stratified random sampling technique used to select participants. The units of observation were the chief executive officers while the units of analysis were the medium sized service firms. Unlike large, small and micro manufacturing firms, medium sized service firms have unique peculiarities which hinders effective application of models developed for other categories of firms. Primary and secondary data was collected using semi structured questionnaire with both closed and open-ended questions. Validities and reliabilities of the tools were established through exploratory factor analysis. Descriptive and inferential statistics methods were used to analyse quantitative data while qualitative data analysis involved categorizing responses into common themes. The study concludes that firms with broad, detailed, strategically aligned and flexible SMS seem to perform better. The findings were such that breadth of SMS had the largest single effect on performance followed by strategic alignment, flexibility, and depth in that order. Customer value was found to partially mediate the relationship between SMS and performance. Moreover, organizational structure moderates mediated relationship between SMS and performance. The contribution of this thesis is that it unravels in detail the extent of adoption and design of SMS in this less explored realm of the service sector in developing economies. Further it shows the comparative contributory effects of various design elements of SMS. Management of service firms can use the findings for re-engineering and re-designing of SMS for optimal benefits. Practitioners and other policy makers can also use the findings in formulation of policies that promote better strategic management.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Strategic measurement systems (SMS) are essential management tools for operationalizing firm strategy. The systems provide measures used to generate information that guides strategic decision-making. Specifically, strategic measurement systems provide information that stimulate learning and drives desired organizational adaptations (Yuliansyah & Khan, 2015). The systems are thus, critical in developing unique organizational capabilities for sustainable competitive advantages and enhancing overall firm sustainable performance (Kuuluvainen, 2012).

Research in the field of strategic measurement systems shows that most of the traditional strategic measurement system models in use such as the balanced score card, total performance score card and sustainable performance measurement systems were developed within the framework of large manufacturing firms in developed countries (Ferreira, Shamsuzzoha, Toscano, & Cunha, 2012; Garengo, & Bernardi, 2007; Searcy, 2011). However, manufacturing firms have idiosyncratic attributes different from those of service firms, which could support differentiated behaviours (Fernández, López-López, Carlos, & Iglesias-Antelo, 2022).

Further, use of SMS is not always guaranteed to show significant positive impact on firm sustainable performance (Gerrish, 2014a, 2014b; Heinrich, 2011; Hvidman & Andersen, 2013). Therefore, the accrued benefits from applying these models may not directly be transferable to medium sized service firms in developing countries. Moreover, in view of the contradictory results, together with the limited attention that has been paid to the services sector despite the fact that services provide about 70% of value added and employment in most economies (Fernández, López-López, Carlos, & Iglesias-Antelo, 2022), justify the need of additional research in medium sized service firms in developing economies like Kenya.

The effectiveness of any performance measurement system is partly dependent on its design, use (feedback & feedforward), firm environment, technology, firm strategy, and firm characteristics (Chenhall, 2003). The context of medium sized firms presents peculiarities with distinct unique characteristics. Unlike the large firms, medium sized firms are often faced with challenges of insufficient funds and inadequacies in management and employee capabilities (Hudson, Smart, & Bourne, 2001). Due to these inadequacies, research shows that extensive use of advanced strategic measures may in fact impede their growth. This is because extensive use of lengthy and detailed measures may tie up the limited resources the firms need to propel their growth (Bäuml, 2014).

Further lengthy and highly formal procedures for gathering and use of large, complex, long-term measurement data associated with advanced strategic measurement systems are not in tandem with the medium sized service firms' preference of informality, personalized engagement, flexibility, responsiveness and continuous innovation. However, medium sized service firms still adopt traditional strategic measurement systems albeit with modifications in designs to try fit their contextual circumstances. Nonetheless, little empirical evidence currently exists, which fully describes the actual effect of strategic measurement systems design on performance of medium sized service firms in Kenya. The purpose of the current study therefore, was to investigate the effect of strategic measurement system design on performance of medium sized service firms in Kenya.

1.1.1 Strategic Measurement System Design

A strategic measurement system is an information system which constitutes the process of collecting, analysing, and reporting of the performance information needed to manage processes and competencies that produce significant long-term organizational competitive advantages (Sousa *et al*., 2006). These systems play a critical role of triggering change in behaviour, influencing change in capability and favouring qualitative growth (Sousa *et al*., 2006). However, effectiveness of a strategic measurement system in achieving these goals lies on what data is collected, how data is analysed, and how data is reported.

The variability in this process embodies the concept of strategic measurement system design. Hence, strategic measurement system design defines the composition and arrangement of the elements used in the process of collecting, analysing, and reporting of the performance information needed to manage processes and competencies that produce significant long-term organizational sustainable competitive advantages (Sousa *et al*, 2006; Bäuml, 2014). For a measurement system to be considered strategic, its design needs to be comprehensive and incorporate the principle of multidimensionality covering long term and short-term measures.

The key distinctive feature of SMS is that they contain both financial and non-financial measures (Santos & Brito, 2012). The common forms of financial measures used in the service sector include, profitability, return on investments, annual earnings, return on assets, cost reduction, return on equity, market share and revenue growth (Zakaria, Abdulatiff & Ali, 2014). Whereas, the most common non-financial measures in the service sector include productivity, employee relations, innovation, supplier relations, operational efficiency, service quality and service flexibility (Islam & Yahanpath, 2013). Further, SMS target internal and external measures as well as leading and lagging performance indicators in a comprehensive framework (Neetu, Sushil, & Mahim, 2011).

1.1.2 Medium Sized Service Firms

According to Fernández, López-López, Carlos and Iglesias-Antelo (2022) service sector includes all economic activities whose outputs are not physical products or construction. They are generally consumed at the same time they are produced and create added value in ways that are essentially intangible and related to their first purchaser. From the study sampling frame, the service sector was classified into thirteen sub sectors of transport, warehousing, hotels, tourism, eateries, information communication and technology, media, finance, insurance, professional services, education, health, arts and entertainment.

Definition of a medium-sized firm widely varies to serve different purposes for different establishments. According to the European Union, medium sized firms have between 50 and 250 employees and annual turnover of between €10 million to €50 million Euros

(Ksh. 1.1 billion to Ksh. 5.7 million) (Berisha & Pula, 2015). However, according to the World Bank standards, International Finance Cooperation (IFC) reports that medium sized enterprises have between 50 and 300 employees and a total asset base or total annual sales of between USD 3 million to USD 15 million (Ksh. 300 million and Ksh. 1.5 billion) (IFC, 2008, Berisha & Pula, 2015).

In Kenya, according to sessional paper No. 2 of 2005, medium sized firms employ between 50 and 99 employees (GOK, 2005). Employment refers to the total number of people working in the business whether they are not paid, partially paid, or fully paid (KNBS, 2016). The Micro, Small and Medium establishment (MSME) basic report of 2016 showed that 25.78% of medium sized firms in Kenya have an annual turnover of less than Ksh. 600,000; 0.9% (Ksh. 600,000 to Ksh. 2.4 million); 11.7% (Ksh. 2.4 million to Ksh. 12 million); while 53.6% have annual turnover of above Ksh. 12 million (KNBS, 2016). The report also showed that 3.8% of licensed medium sized firms had a net worth of less than Ksh. 50,000; 14.6% (Ksh. 50,001 to Ksh. 200,000); 9.6% (Ksh. 200,001 to Ksh. 1 million); while 71.9% had a net worth of more than Ksh. 1 million (KNBS, 2016).

1.1.3 Performance of Medium Sized Firms

Organizational performance is viewed as the ability of an organization to utilize its resources to achieve organizational goals in an effective, efficient, and ethical manner (Sosiawani *et al*., 2015). Traditionally, organizational performance focused primarily on financial measures. These measures are however, backward looking and measures past outputs. There is need for incorporating forward-looking measures to evaluate the ability of the organization to tackle strategic issues. Strategic measurement is thus, anchored on firm's ability to gain and sustain performance over time (Rothaermel (2015).

Globally, medium sized firms are major players in economic development. However, their performance and significance vary from country to country, from region to region and from sector to sector. In Europe, medium sized firms constitute approximately 1.1% of all the business enterprises, generating about 17.1% of employment and 18.4% of gross value added (GVA) (Wymenga, Spanikova, Barker, Konings, & Canton, 2012).

Compared to large firms in Europe, which constitute approximately 0.2% of the enterprises and generate about 32.9% of jobs and 41.9% of GVA, marginal contribution of medium sized firms is considered to be low (Wymenga *et al*., 2012). In 2014, medium sized firms contributed about 46% of GVA to the service sector in Norway, 38% in Latvia, 35% in Denmark, 33% in Finland, 27% in Germany, and 7% in the Netherlands (Airaksinen, Luomaranta, Alajääskö, & Roodhuijzen, 2016).

In the global sphere, long term success of these firms has been a major concern. According to the United States Bureau of Labor Statistics (2016), together with their smaller counterparts, two-thirds (66%) of medium sized enterprises fail within 10 years in the USA. Only 80% survive the 1st year, 45.4- 51% survive past 5 years, 33% last 10 years and 25% last past 15 years. The failures vary across the economic sector with construction sector having contributed 13.7% of total failures in 2016. This was followed by the retail sector at 11.2%, transport at 4% and manufacturing at 3.5%. The statistics is mirrored by the situation in Canada where according to the Canadian Statistics Office, in 2019, 80% of this category of firms fail within the first 10 years. The failure rate also varies across economic sectors where in the goods producing industries 76% fail in the 1st year, 37% by the 5th year and 21% by the 10th year. For the service sector industries, 78% fail in the 1st year, 35% by the 5th year and 19% by the 10th year (Statistics Canada, 2019). Nearly 71% of the 71% failures attributed to management issues.

In South Africa, despite previously being regarded as a vital cog in the socioeconomic development agenda, contribution of medium sized firms to economic growth has been challenged. Small Business Institute (SBI) (2019) reports that contribution of medium enterprises to job creation is failing with large business adding more jobs at a much faster rate. The report indicated that only 12% of employment occurs in medium sized firms. In fact, nearly 56% of the jobs in South Africa come from only 1,000 larger employers. Further, a study by Rashid, Gregory, Thomas, *et al*., (2017) claims that medium enterprises sector is not only failing to assist in the alleviation of the chronic unemployment levels in South Africa but also is contributing to its occurrence given their

high failure rate. Thus, incidences of their high closures in the country raise critical questions on whether they are effective tools for job creation and poverty reduction (Makwara, 2019).

In Kenya, according to the census of business establishments conducted by Kenya National Bureau of Statistics (KNBS), as at 2016 there were approximately 10,920 registered medium sized firms in Kenya (KNBS, 2016). This represented 0.7% of all business establishments while large firms represented 0.5% of all business firms. The gross value added by medium sized firms in Kenya in 2016 was estimated at KSh. 440 billion compared to KSh. 5,668 billion for the whole economy representing a contribution of 7.7% (KNBS, 2016). Approximately 28% of the medium sized firms in Kenya are in the service sector where 418,600 of these firms closed their economic activities between 2011 and 2016. The long-term average annual failure rate is approximately 80,000 (56%). The highest peak observed in 2014 (97%) followed by 2012 (61%), 2011 (60%) and 2013 (6%) (KNBS, 2016). These closures have been linked to increased operating costs, declining income and losses incurred from the business.

Service sector in has been a major contributor to Kenya's economic growth in recent years. In 2016, the services sector accounted for half (50.7%) of the country's gross domestic product (GDP) (KNBS, 2016). World Bank (WB) figures indicated that between 2006 and 2013, 72% increase in GDP came from the service sector due to **e**xpansion in modern services, such as financial intermediation and mobile communications, which has stimulated growth in trade, and other sectors of the economy (World Bank Group, 2016). Nonetheless, a number of management inadequacies have undermined the sector's endeavour to achieve its full potential (Jamil & Mohamed, 2011). One of the major management inadequacies among the medium sized firms in Kenya has been identified as limited strategic capabilities linked to preference to short-term financial measures and limited use of strategic measurement systems (Chimwani, Nyamwange, & Robert, 2013). This limits the firms' ability to generate the necessary strategic information for successful deployment of competitive strategies for the firms' growth and sustainability.

1.1.4 Performance Measurement Systems for Medium Sized Service Firms

In the literature, there are numerous performance measurement systems which differ not only in scope, intensity, complexity, and construction, but also in many other characteristics. For small and medium sized firms, modified balanced score card; organizational performance measurement; integrated performance measurement; and Performance Measurement System Impact Reporting and Investment Standards (IRIS) have been proposed (Waśniewski, 2017). Nonetheless, these textbook designs have been faced with low adoptability due to poor applicability of the models in the business reality.

Medium sized forms apply different variants of these models in a non-generalized manner. The designs are highly modified at individual business level and are mostly influenced by environment of individual companies. Regardless, certain trends are observable. For instance, a study by Maduekwe and Kamala (2016) showed that for both small and medium sized businesses, financial oriented performance measurement systems are most preferred with the most popular indicators being sales growth, cash flows, operating income and net profit margin.

In Italy, a study by Garengo and Bernardi (2007b) Italy, attributed lack of sustainable competitive advantages among medium sized firms to focus on measuring operational and technological factors at the expense of strategic measures. In Malaysia, a study by Jamil and Mohamed (2011) linked low GDP contribution by the medium sized firms to over-reliance on short-term performance measures. In South Africa, a study by Maduekwe and Kamala (2016) observed that small and medium sized firms have high failure rates due to over-reliance on financial performance measures with little regard to the non-financial performance measures. Similarly, a study by Georgise, Thoben and Seifert (2013) in Ethiopia showed that medium sized industries are less likely to have formal performance measures and are still largely using financial and productivity performance measures while ignoring strategic measures.

In Kenya, a study by Chimwani, *et al*. (2013) established that the most common performance measures among the small and medium sized manufacturing firms in Nairobi

are financial in nature with measures for internal business process, innovation, and learning being less obvious. These limit the firms' from reaching their full strategic potential. These studies despite being very insightful only investigated relationships between the type of measure in use and firm performance. They did not examine the impact of the systems' design on firm performance. Further, most studies on strategic measurement systems have focused on manufacturing firms with limited emphasis on medium sized service firms in developing economies.

It is worth recognizing that for any performance measurement system (PMS) model to be effective, it must be designed to reflect firm characteristics, firm environment, technology, firm strategy, and culture (Chenhall, 2003). Moreover, a strategic measurement system should have a balanced set of measures that cover a wide range of financial and non-financial measures; considers the enterprise and customer perspectives; accommodates continuity and change forces; stimulate reactive and proactive actions; and consider both external and internal factors (Sushil, 2009). Meaning, strategic measurement systems are expected to have adequate breadth, depth, strategic alignment and flexibility to accommodate demands for contingency, customer orientation, systemic view and strategic alignment (Lima, Costa & Angelis, 2009).

Performance measurement systems for small and medium enterprises should be dynamic and flexible so as to be able to respond to the needs of these companies, but at the same time they must be structured to some degree, which promotes active planning (Waśniewski, 2017). It should also be a continuous and cyclical process to support continuous evolution of the performance measurement system over time due changes in the business environment to support the company in adapting to the changing conditions of its competitive environment. Fitzgerald, Johnson, Brignall, Silvestro and Voss (1991), determinant/results performance matrix was adopted to measure organizational performance in service businesses.

The model proposed that in the service sector, organizational performance should be evaluated at two levels. The first level being the determinants of performance (leading indicators) and the second level being the strategic outcomes (lagging indicators). The premise of the model is that strategic outcomes are realized from their associated leading indicators. The leading indicators therefore mediate long-term outcomes. The leading indicators include service quality, service flexibility, resource utilization, and innovation while lagging indicators include financial and sustainable competitive advantages (SCA).

The main strength of the model is that it specifies, in reasonable detail, what measures should look like and provides a useful development process (Hudson, *et al*., 2001). The study measured service quality (reliability, responsiveness and availability), service flexibility, resource utilization (efficiency) and service innovation as determinants of performance (customer value). The lagging indicators included SCA parameters (customer loyalty and sales growth) and profitability measures (net profits).

The distinctive differences in the structure and philosophy of medium sized service firms as well as unique contextual factors indicated a need for investigation into the use and effectiveness of strategic measurement systems' models on performance of medium sized service firms in developing countries like Kenya (Hudson, *et al*., 2001). Still, there was need to understand the design factors of strategic measurement systems and how they influence firm performance among medium sized service firms in developing countries. Moreover, it is worth remembering that medium sized service firms are critical players in the Kenyan growth agenda as the sector provides major employment opportunities, support and stimulates industrialization, trade, and wealth creation (World Bank Group, 2016). Thus, the need for an understanding on those factors that influence their performance.

1.2 Statement of the Problem

High failure rate among medium sized service firms has remained a major concern in Kenya. Statistics by Kenya National Bureau of statistics (KNBS) indicate that more than 90% of these firms fail to transition to large firms as expected (KNBS, 2016). This low

transition has been attributed mainly to inadequate strategic capabilities, a factor identified by research in strategic management disciple as a critical contributor to firm competitiveness, growth and sustainability (Chimwani, *et al*., 2013). Empirical evidence further suggests that strategic capabilities partly arise from use of appropriately designed strategic measurement systems, which provide the right, adequate and timely information that stimulates learning and drives desired organizational adaptations and performance (Yuliansyah & Khan, 2015; Maduekwe & Kamala, 2016).

Addressing this problem of low transition rate among medium sized service firms therefore lies on a firm's ability to develop strategic capabilities by adopting strategic measurement systems with adequate breadth to measure all-important aspects of the firm, adequate depth to generate critical information, adequate alignment to capture relevant information and adequate flexibility to capture emerging issues (Lima *et al*., 2009). This presents a complex set of issues on what measures to be included and to what extent. The complexity is further enhanced by variations in firm characteristics, environment, technology, strategy and culture (Chenhall, 2003). Hence, in order to clearly understand the complexities involved in designing strategic measurement systems and to offer appropriate recommendations for organizations on design and use of SMS, it is imperative that rigorous studies be conducted to determine the actual effects of SMS design and their properties on firm performance.

To this effect, several studies have been conducted, however, there still lack consensus on the actual effect of SMS and their designs on firm performance. On one side, there are findings showing positive relationship between the implementation of SMS and strategic outcomes (Cocca & Alberti, 2010; Salaheldin, 2009). However, on the contrary, there is also evidence showing that implementation of SMS does not always lead to significant positive effects on firm strategic outcomes (Heinrich, 2011; Hvidman & Andersen, 2013). It is worth noting that these contradictions have been contributed by variations in study conceptualization, methodology and contexts. For instance, most studies on the concept have focused on identifying the type of measures used without examining how properties

of these measures influence performance (Georgise *et al*., 2013; Jamil & Mohamed, 2011; Maduekwe & Kamala, 2016). Besides, few studies have identified key performance properties of SMSs without showing the relative importance of these attributes (Bäuml, 2014; Wasneiewski, 2017; Zizlavsky, 2014).

Furthermore, most studies have focused on large and small generic manufacturing firms in developed economies with limited emphasis on medium sized service firms in developing economies (Ferreira, *et al*., 2012; Fwaya, Odhuno, Kambona, & Othuon, 2010; Searcy, 2011). In addition, the inclusion of mediating and moderating variables in conceptualization of the effect of strategic measurement system on firm performance is not adequately explored. As well, majority of previous studies are cross-sectional and look at limited variables at a time without considering the interactive effects of several factors studied at the same time (Antony & Bhattacharyya, 2010b; Lee & Wong, 2015; McCann & Barlow, 2015; Saunila, Pekkola, & Ukko, 2014). Moreover, the use of financial measures as a variable of performance is predominant (McCann & Barlow, 2015).

Medium sized firms, which at first were underestimated, now represent the strength of every economy. They are the transitional cog signifying growth and development of a country. Unlike large firms which are highly decentralized, and demands a more formal, specialized and sophisticated management control system, the context of medium sized firms presents peculiarities with distinct unique characteristics. They often require high level of agility, have little influence on their environment, are faced with challenges of insufficient funds and inadequacies in management and employee capabilities (Hudson, Smart, & Bourne, 2001).

In the literature, numerous models of performance measurement systems are presented. They differ not only in scope, intensity, complexity, and construction, but also in many other characteristics. It is worth noting that these models were developed for and with the framework of large manufacturing firms in developed economies. There is therefore a need to determine the importance of existing SMS approaches in medium sized service

firms to identify the appropriate design, implementation processes and their effect on performance. This will bridge the gap between theory and practice as well as identify critical SMS design features for success in medium sized firms in the service sector.

Unless addressed, persistence of this knowledge gap will continuously hamper effective implementation of strategic measurement systems among the medium sized service firms in Kenya, which are plagued with nearly 60% annual average failure rate. Thus, limiting adequate development of firm strategic capabilities for firm competitiveness, growth and sustainability with potential adverse effects on performance of these firms as well as the overall actualization of the country's long-term socio-economic development goals. Therefore, to help address this problem of low transition rate associated with the implementation of inappropriately designed strategic measurement systems among medium sized service firms in Kenya, this descriptive research sought to fill the knowledge gap by examining the actual effect of strategic measurement system design on performance of medium sized service firms in Kenya.

The study also explored the relative importance of strategic measurement system's breadth, depth, strategic alignment and flexibility as well as the interactive effects these properties on firm performance. In addition, mediating effect of customer value and moderating effect of organizational context were explored. Further, use of a composite of non-financial and financial measures was adopted to measure performance. The findings from this study provides management teams of medium sized service firms with information relating to designing and implementation of strategic measurement systems.

1.3 Research Objectives

1.3.1 General Objective

The main objective of the study was to establish the effect of strategic measurement system design on performance of medium sized service firms in Kenya.

1.3.2 Specific Objectives

1. To determine the effect of breadth of strategic measurement system on performance of medium sized service firms in Kenya.
2. To establish the effect of depth of strategic measurement system on performance of medium sized service firms in Kenya.
3. To investigate the effect of strategic alignment of the measurement system on performance of medium sized service firms in Kenya.
4. To examine the effect of flexibility of strategic measurement system on performance of medium sized service firms in Kenya.
5. To establish the mediating effect of customer value on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya
6. To establish the moderating effects of organizational context on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya.

1.4 Research Hypotheses

1. **H_{01}:** Breadth of strategic measurement system has no effect on performance of medium sized service firms in Kenya.
2. **H_{02}:** Depth of strategic measurement system has no effect on performance of medium sized service firms in Kenya.
3. **H_{03}:** Strategic alignment of measurement system has no effect on performance of medium sized service firms in Kenya.

4. **H_{04}:** Flexibility of strategic measurement system has no effect on performance of medium sized service firms in Kenya.
5. **H_{05}:** Customer value has no mediating effect on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya.
6. **H_{06}:** Organizational context has no moderating effect on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya.

1.5 Significance of the Study

The study provided a basis for establishing the effect of strategic measurement system design on performance of medium sized service firms in Kenya. The study also provided basis for understanding the mediating effect of customer value and the moderating effect of organizational context on the relationship between strategic measurement system design and performance of medium sized service firms in Kenya. The findings of the study would be relevant to the following stakeholders.

1.5.1 Managers of Service Sector Firms

Strategic measurement system design was found to influence performance of medium sized service firms in Kenya. However, the study identified inadequacies in the systems. Particularly, the breadth of the performance measurement system, level of their detail, strategic alignment, and flexibility of the strategic measurement systems were shown to be unbalanced and sub-optimal. This information is crucial in re-engineering and redesigning the performance measurement systems for optimal benefits. Further, at individual variable levels, breadth, depth, alignment, and flexibility of strategic measurement systems have been found to positively influence performance. Moreover, customer value mediates the relationship, while organizational structure moderates the relationship between strategic measurement system design and performance. Management of these firms can use these findings to ensure that all parameters of concern

are adequately incorporated in the strategic measurement system design for optimal benefits.

1.5.2 Researchers and Academicians

The study contributed to empirical literature by providing empirical evidence on the effect of strategic measurement system design on performance of medium sized service firms in Kenya. The findings contribute to the body of knowledge by showing the role of SMS from the perspective of the resource-based view theory, Decision making theory, Organizational learning theory and Dynamic capabilities theory. The findings acknowledge that SMS can be a direct and an indirect source for competitive advantage through its ability to enhance organisational capabilities.

This study also adds to the existing body of empirical literature by confirming that breadth, depth, strategic alignment, and flexibility of strategic measurement system, separately and jointly significantly positively influence performance of medium sized service firms in Kenya. The study also enhanced empirical validation by use of inferential statistics, and application of flexibility strategy-game-card and determinants/results frameworks specifically designed for service sector to measure short-term financial, short-term non-financial and long-term strategic outcomes.

1.5.3 Policy Makers

Policy makers would also find significance in the findings. The results provided a pool of knowledge on the influence of strategic measurement system design on firm performance. This knowledge would be critical in stimulating above average performance in the entire industry. Particularly, the policy makers and other stakeholders can use the information in designing programmes for industry development. Further, the findings also inform on the characteristics of the medium sized service firms in Kenya. This is important in defining this class of firms.

1.6 Scope of the Study

The study was delimited to it conceptualization. The study sought to establish the effect of strategic measurement system design on performance of medium sized service firms in

Kenya. Specifically, the study explored the effect of breadth, depth, strategic alignment, and flexibility of strategic measurement system on firm performance. Determinant/results framework was used to evaluate firm performance. In addition, customer value was considered as the mediating variable while organizational context was evaluated on its moderating effect. Previous studies have identified 10 main dimensions that characterize contemporary performance measurement system models with specific reference to small and medium sized enterprises (Waśniewski, 2017).

The choice of the independent variables and the causal relationship was informed by their interactive association. That is, while the breadth of strategic measurement system defines the scope of all the measurement elements in the system, the extent of detail, strategic alignment, and flexibility (dynamic adaptability) directly influences the extent of the model's responsiveness to rapidly changing firm environment. As such, a study based on the interdependencies between these variables created an understanding of the complex interaction between these variables and firm performance (Zizlavsky, 2014). Moreover, understanding the relationship between results and determinants makes it possible to have periodic feedback on the measures used and incremental changes. Further, the other 5 dimensions including strategy development, balance, focus on stakeholders, process orientation, clarity and simplicity have been substantially researched through the balanced score card model (Waśniewski, 2017).

The study was also delimited to medium sized service firms. Focus on medium sized service firms was informed by two reasons. First, compared to large firms and firms in the manufacturing sector, there is inconclusive empirical evidence on the actual effect of strategic measurement systems on performance of medium sized firms in the service sector (Ferreira, *et al*., 2012; Fwaya, *et al*., 2010; Searcy, 2011). Secondly, unlike large firms which are highly decentralized, and demands a more formal, specialized and sophisticated management control system, the context of medium sized firms presents peculiarities with distinct unique characteristics. They often require high level of agility, have little influence on their environment, are faced with challenges of insufficient funds and inadequacies in management and employee capabilities (Hudson, Smart, & Bourne,

2001). Thus, SMS developed within and for large manufacturing firms may not wholly be applicable to medium sized service firms.

Exclusion of micro and small firms was informed by two perspectives. Literature shows that for micro and small enterprises, the approach to performance measurement is informal, not planned, not based on a predefined model, and is often of poor alignment to strategy and measures (Langwerden, 2015). Further, micro, and small firms have limited resources for elaborate measures and tend to focus on short-term goals. In fact, Hudson, *et al*. (2001) posit that most of the available performance measurement systems are designed to evaluate the performance of medium to large-sized companies, which have the necessary financial and management capabilities for their implementation. This meant that the micro and small enterprises would be constrained in providing adequate data required for this study. Thus, micro and small service firms were also excluded from the study.

The target population for the study was 3,058 registered medium sized service firms in Kenya as established by Kenya National Bureau of Statistics (KNBS) in 2016 in a study titled Micro, Small and Medium Establishments in Kenya (KNBS, 2016). Records from the Nairobi City County (NCC) in 2017 indicated that nearly two thirds, 66.7% (2,039) of these firms were either headquartered or were having branches in the City. Approximately 9% of these firms were licenced by Nakuru County, 6% by Kiambu County, 5% by Kakamega County while the rest of the Counties had less than 4% representation (KNBS, 2016). According to the report, apart from NCC all the other counties failed to have full representation of all the sub sectors in the medium sized service firms' category. However, since the Nairobi City County had the highest single representation of the medium sized service firms in Kenya, and because NCC had all the sub sectors of the service industry represented, it was practical to access all strata of the population in the City County. NCC was therefore, considered a fair representation of the entire medium sized service firms' population in Kenya. Hence, the study population comprised of 2,039 medium sized service firms registered in NCC. The firms were

identified through the Nairobi City County business register. The unit of analysis comprised of medium sized service firms, while the units of observation were the chief executive officers of the sampled firms.

Study collected both quantitative and qualitative data sets. The tool used also gathered both cross-sectional and longitudinal. The use of quantitative and qualitative data offered an opportunity for data corroboration. This also facilitated compensation of inherent individual approach weaknesses to provide a better understanding of phenomena under investigation.

1.7 Limitations

The study sought to establish the effect of strategic measurement system design on performance of medium sized service firms in Kenya. The study also evaluated the mediating effect of customer value and the moderating effect of organizational context. The units of observations were the chief executive officers of the sampled firms. There were difficulties observed in accessing the respondents due to their tight work schedules. This was mitigated by engaging a research firm with several research assistants to visit as many firms as possible within the study period to enhance response rate. Where they were completely unavailable, one top manager per firm was interviewed. Top managers were used as respondents because they are the ones who are knowledgeable about business strategy and the ones who use SMS (Mohamed & Rahman, 2010).

There were also some difficulties in gathering secondary performance data especially access to audited accounts from some firms due to policy issues. However, research authorization from Nairobi City County and the National Commission for Science, Technology, and Innovation was used to assure respondents of the nature and objective of the study. This helped in improving response rate. In addition, confidentiality statement included in the questionnaire was used to assure respondents by indicating that data provided would not be shared without express authorization. Neither was information that would directly identify a firm was to be published.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter covers a review of literature to provide a theoretical and empirical backing for the study. The chapter has five sub sections; theoretical framework; conceptual framework; empirical review; critique of the existing literature; and research gaps.

2.2 Theoretical Framework

This section presents a critical review of theoretical arguments upon which the study was conceptualized. The study was based on resource-based view theory, dynamic capabilities theory, organizational learning theory, and decision-making theory.

2.2.1 Resource Based View (RBV)

Resource based view theory was developed on the quest to explain the persistent differences in firm performance. It tries to establish why certain organizations are more effective and efficient in handling their businesses compared to others (Almarria & Gardinera, 2014). Like any other theory, RBV emerged based on prior theoretical underpinning. The three most important sources of RBV include the traditional study of distinctive competencies such as management capabilities that enable a firm to pursue a strategy more efficiently and effectively than others. For instance, according to the traditional understanding on the sources of competitive advantages, it was presumed that firms perceived to have “high quality” managers usually outperform firms perceived to have “low quality” managers (Barney & Arikan, 2001).

The second theory that influenced the development of RBV was the Ricardian economics, which postulated that it is possible for those that own higher-quality factors of production with inelastic supply such as land to earn an economic rent (Barney & Arikan, 2001). The third source is the Penrosian economics, which broaden the scope of inelastic resources from just a few such as, land to include other reproductive resources such as the management teams, top management and entrepreneurial skills (Penrose, 1959). The

underpinning of Penrose's argument was that firm growth is based on a bundle of internal resources and is limited by managerial resources used to coordinate the use of these resources (Barney & Arikan, 2001).

Penrose thus argued that a "firm's internal and subsequent external growth is due to the way in which the resources are exploited" (Almarria & Gardinera, 2014, p.440). According to Penrosean theory, organizational growth can be triggeted through two different ways. First, underutilized or excess resources can be put to productive and beneficial use. The second path is via redeployment of a resource meant for one purpose for new and more productive applications (Nason & Wiklund, 2018).

Based on these past theoretical underpinnings, it is clear that the development of the RBV theory has closely evolved mainly from two research perspectives. Strategic perspective, and organizational economics' perspectives. Strategic perspective is epitomized through the traditional study of capabilities and competencies as a source of competitive advantages (Barney & Arikan, 2001). The organizational economics perspective is strengthened through the Ricardian and Penrosian economics, which incorporate agency and transaction cost theories among others. While the Agency theory highlights idiosyncratic resources that have the potential to be sources of competitive advantage, transaction cost theory provides a better understanding of the functions and origins of different market structures for exchanging services with the external environment (Almarria & Gardinera, 2014). Thus, operationalization of RBV in explaining difference in firm performance may vary from the disciple's perspective.

Barney (1986), Rumelt (1984) and Wernerfelt (1984) initiated the resource-based view theory as it is known today in the mid-1980s. Since then, Resource-Based View (RBV) of the firm has become one of the most widely used theoretical frameworks in the analysis of sustained competitive advantages (Ferreira, Azevedo, & Ortiz, 2011). The central premise of the resource-based view is that firms compete based on their resources and capabilities (Bridoux, 2004). The RBV theory argues that firm performance is primarily influenced by resources and capabilities at the firm's disposal.

Definition of resources that the resource-based view evaluates have been viewed differently by different authors. One class of authors view firm resources collectively as tangible or intangible assets owned or controlled by a firm (Ferreira, Azevedo, & Ortiz, 2011). Here tangible assets include stock while intangible assets are further divided into two sets where one set contain among other assets, skills; human assets; information and organizational assets; and relational and reputational assets. All these represent what a firm has (Knott, 2009).

The other set of intangible assets include capabilities or competences that represent what a firm does. Prahalad and Hamel (1990) defined competences as the collective learning that gives firms the ability to deploy their resources productively. This makes them arguably more important to a firm's competitive performance than the resources on which they are based (Penrose, 1959), and hence worthy of particular attention when evaluating the basis of a firm's performance (Knott, 2009).

The second class of authors separate resources from capabilities or competencies. Resources are seen here as assets which can be used to conceive or implement strategies. Meaning resources are to be converted into value which contribute to competitive advantages. Capabilities on the other hand define firm's capacity to deploy resources, usually in combination, using organizational processes, to effect a desired end (Landroguez, *et al*., 2011). In this sense, capabilities are primary to the success of the firm's organization and management. The study adopts the latter definition with a distinction between resources and capabilities.

Nonetheless, the RBV theory aspires to explain difference in performances which are related to a firm's internal idiosyncrasies rather than those related to economic or industry conditions to drive a firm's sustained competitive advantage (SCA) (Ferreira, *et al*., 2011). Its central proposition is that if a firm is to achieve a state of sustainable competitive advantages it must acquire and control valuable, rare, inimitable, and non-substitutable resources and capabilities, plus have the organization in place that can absorb and apply them (Kraaijenbrink, Spender & Groen, 2009). The bundles of resources and capabilities

can be both tangible and intangible in nature and are considered to be heterogeneously distributed across firms for sustained creation of unique value and competitive advantages (Gor, Mummassabba, & Muturi, 2015).

Despite its wide application, the RBV has its own critics. Concerns have been voiced on the soundness of constructs' definitions, generalizability and construct validity. Firstly, critics point out the non- homogeneity and clarity in the definitions and use of principle terms such as capabilities, assets, resources and competences. While acknowledging the distinctive differences among the principle RBV constructs of capabilities, competences, assets and resources, Truijens (2003) proposes development of a clear criteria into which the constructs can be defined. Moreover, there should be explicit criteria into which assets should fit to yield competitive advantage, rather than using given asset categories on the basis of arbitrary selection (Almarria & Gardinera, 2014). The argument is that not everything associated with a firm can be considered as a resource. The critics thus argue against use of an all-inclusive definition of the resource-based view constructs.

Nonetheless these arguments of lack of universally agreed definition may be valid, it may not be the only criteria to hinder use and advancement of the RBV theory. In fact, lack of a standard definition across contextual variations should be perceived a strength indicating that the theory is not static and is not suffering from definitional ailment. Indeed, the strength of the theory should come from constructs definitions that are in line with context based competitive strategy criteria rather than focusing on universally accepted definition of the constructs.

Secondly, Barney, Ketchen, and Wright (2011) raised concerns on measuring and testing of intangible assets. Particularly, they raise questions on validity and empirical testing of RBV's intangible assets. Barney, *et al*. (2011) observes that in most studies, intangible assets assessment and construct validation is often a unidisciplinary and unilevel process rather than a multidisciplinary and multilevel process. Furthermore, the process is simply mechanical and empirical rather than a multiple approach with strong theoretical inclination. Limited research across different contexts, industries and samples has also

been sited as a major hindrance to validation and generalizability of the theory (Almarria & Gardinera, 2014).

Conversely argurments of lack of generalizability and construct validity of the resource based view theory should be indeed the main reason for more studies to establish the validity of the theory. Moreover, systems and conditions under which firms operate are open to the exent that isolating all factors affecting performamnce may not be practical. In addition, competitive advantage is not inherent in some resources and capabilities, but rather in a complex network of capabilities and resource interactions. Thus an attempt to isolate some key resources and capabilities from others represented a misunderstanding of resource-based view (Almarria & Gardinera, 2014).

Even though, the original version of RBV looked at internal resources held by the firm, business environment has changed and competitive resources can be acquired externally. For instance, through strategic alliances, outsourcing, partnerships, mergers and licensing. In this context, it is about how the firm acquires, organizes, and manages resources to gain sustainable competitive advantage (Gor *et al*., 2015). This study argues that well designed strategic measurement systems enhance an organization's capabilities by influencing employee behaviour; improving control; improving communication and organizational learning (Bäuml, 2014). That is, SMS acts a source of competitive advantage by eliciting critical information for development of strategic capabilities including innovation, organizational learning, market orientation and entrepreneurship. In this way, strategic measurement systems enable an organization to align its resources and to build capabilities which influence overall organizational performance.

The study argues for a direct relationship between a strategic measurement system design and organizational performance. Strategic measurement systems are proposed to create a positive influence on employee behaviour by aligning the employee behaviour to the desired organizational strategy. Moreover, strategic measurement systems are expected to stimulate learning frameworks, which enhance organizational capabilities such as innovativeness, flexibility, time to market, organizational responsiveness, and decision-

making. Therefore, strategic measurement systems can be a source of valuable, rare, inimitable, and non-substitutable capabilities unique to the firm that result in competitive advantages (Kraaijenbrink, *et al*., 2010).

Particularly, having a broad strategic measurement system would facilitate development of a wide range of vital and unique capabilities. That is, unique knowledge about internal and external state of the organization, which can be used as a source of sustainable competitive advantage. That is to say, broad strategic measurement systems stimulate widespread desired learning and necessary leveraging of resources to corporate strategy to enhance corporate capability for positive performance. Thus, broad strategic measurement systems influence firms' sustainable performance by enhancing organizational capability and competency in organizing and managing resources by providing information which make learning and adaptation processes possible.

2.2.2 Organizational Learning Theory

There are conflicting arguments as to who first conceptualized the term organizational learning. While some sources indicated that the concept of organizational learning was first introduced into management literature by Kurt and March (Saadat & Saadat, 2016), others like Hussein and Ishak (2006) point to Cangelosi and Dill as the key proponents. Regardless, organizational learning has been identified as a major source of competitive advantage as well as responsiveness to change (Odor, 2018). Other than the traditional factors of production, organizational knowledge and its application has become even more important in achieving competitiveness. The purpose it pursues is the comprehension of the dynamics through which organizations adapt to environmental complexity, uncertainty and change (Beauregard, Lemyre, & Barrette, 2015).

Generally, the concept of organizational learning is perceived as the process by which organizations accumulate knowledge through interactions between organizational members as well as through the interactions between organizational members and the organizational environment through socialization and practices considered as a collective achievement (Kuabara & Takahashi, 2017). In other words, the concept may be viewed

as a change in the organization's knowledge base that occurs due to experience (Odor, 2018). According to Argote and Miron-Spektor (2011), knowledge when shared among organizational members, can be embedded or institutionalized into the organization's systems, structures, and culture such that other members of the organization can have access to that knowledge, even when the source of the knowledge ceases to exist.

Kuabara and Takahashi (2017) explain that "organizational learning can be considered as a transformational change process involving the various levels of individuals, groups, and organization, through which the creation, utilization, and institutionalization of knowledge take place" (p. 173). This presents multiple and multilevel processes where members individually and collectively acquire, develop, interpret, use, retain, and share or transfer knowledge by acting together and reflecting together (Odor, 2018). Organizational learning is thus a collective process involving cognitive, behavioural, and cultural dimensions.

There are four main perspectives for organizational learning. Critical, structural functionalist, social constructivism and integrative perspectives. Firstly, in the critical paradigm, humans are considered to organize their reality according to cognitive interests that include producing technical knowledge to improve effectiveness (technical interest), achieving mutual understanding with others (communicative action), and emancipation (Popova-Nowak & Cseh, 2015). The perspective underscores the impacts of technical rationality or concern with improved effectiveness on human communication. According to Leavitt (2011), the cognitive school of thought reasons that learning occurs through our mental models, structures, or schemas, which enable us to understand events and situations and to interpret and respond to our environments.

Secondly, in the structural functionalist approach, organizational learning is perceived as a process of acquisition, diffusion, interpretation and institutionalization of critical knowledge necessary for achieving organizational goals through interactions between organization's sub units and at multi-levels consisting of both individuals and groups. However, the emergent properties of learning are at the organizational level. This

perspective is hinged on the social systems theory (Popova-Nowak & Cseh, 2015). For Beauregard, *et al*. (2015) social systems are composed of multiple interdependent sub-systems working towards the preservation of the systemic stability when exposed to environmental sources of variations.

Social systems' stability is realised through adaptation, goal attainment, integration and pattern maintenance. Where adaptation signifies adjustment of systemic needs to environmental sources of variations (Nuño-Solinís, 2017). In this sense, the external environment act as a source of information. Goals attainment signify attainment of systemic goals through strategic planning while integration is percieved as coordination of the subsystems in alignment with the adaptation and goal attainment functions of the global social system. That is, sharing of the information across different sub units within the organization (Basten & Haamann, 2018). Finally, pattern maintenance is viewed as dissemination of values to societal members in order to develop their motivation to participate in the sustainability of the global social system in place. That is, the institutionalization mechanisms which confer collective meaning, control and guidance for coherent organizational members' practices (Beauregard, *et al*., 2015).

Thirdly, social constructivism is based on cultural orientation where individual agency and inter-subjective exchange become the central focus for organizational learning. According to the social constructivism, reality is emergent, incomplete and consists of communities of micro-practices in social interactions (Popova-Nowak & Cseh, 2015). In this paradigm, learning takes place at the individual level through exchanges within the organizational environment. The social constructivist approach integrates the notion of social identity to organizational learning thereby linking individual learning agents' needs to purposively connect and anchor their daily activities within their organizational contexts of emergence (Beauregard, *et al*., 2015).

In this sense individuals learn by sharing common activities, norms, cultures, resources and social realities. Meaning, shared roles and resources such as in the case of work specialization provides a framework for shared community of practices which provide

meso-level structures for organizational learning (Basten & Haamann, 2018). This shared practices thus define their members behaviour as individual agents strive to create a shared understanding within their communities. This act of conformance to both the present and emerging realities around individual agents create a common organizational culture.

Fourth, the integrative perspective is an emerging approach which acknowledges multiple and complex sources of organizational learning. The perspective assumes multidimensional and multilevel nature of organizational learning ocurring at the individual, group and organizational levels (Beauregard, *et al*., 2015). While learning at the individual level is acknowldged just as in the structural functionality perspective, the individual agents' ability to influence their organizational environment is not unlimited, and remains contingent upon environmental opportunities for learning, and their own competencies to leverage them (Makabila, Iravo, WaitituGichuhi, & Kagiri, 2017).

At the macrolevel, organizational structures provide room for conceptual expansion by acknowledging to varying degrees the influence of political inequalities in resources, ideology and power, a point nearly non existance in the structural functionalist approach (Beauregard, *et al*., 2015). Regardless of the perspective, organizational learning has become imperative in the current business environment where turbulence and stiff completion has become the order of the day.

It is widely accepted that sustainable competitive advantage of business firms is largely influenced by the rate at which the firm picks cues from its environment. Where learning organizations are seen to adapt to unpredictable environments more quickly than their competitors (Makabila, *et al*., 2017). This makes organizational learning efforts a core necessity rather than an option for successful competition. To survive, an organization must not only have a system for data collection and analysis, but must develop capabilities for comprehending competition, customer demands, technological changes and other evolving environmental conditions so as reengineer themselves for long-term survival and success. Therefore, nurturing organizational learning should not be left to chance, as

learning is a key ingredient for achieving sustainable competitive advantage through enhanced organizational effectiveness and performance (Leavitt, 2011).

It is worth noting that unique knowledge takes time to replicate meaning that if an organization develops a unique pool of knowledge, this becomes a source of long-term competitive advantages. There are three distinguishable types of learning. First there is single-loop learning which refers to learning through corrective actions. It focusses on fixing errors in systems, strategies or products without questioning the policies procedures (Basten & Haamann, 2018). Meaning it only focuses on doing things the right way rather than question whether they are the right things to be done.

Second is the double-loop learning which connects and links knowledge with understanding and reasoning for action (Nuño-Solinís, 2017). It goes a level higher to question the policies and procedures rather than focusing only on error correction. This may lead to changes in rules and procedures and questioning of the underlying assumptions and principles that form the basis of the rules and procedures (Makabila, *et al*., 2017). Third is the triple-loop learning which is involved with learning about the learning process. Triple-loop learning thus involves challenging the organization's principles and assumptions.

This study perceives measurements systems as critical tool for actualizing organizational learning. Yuliansyah and Khan (2015) indicate that performance measurement systems provide information that stimulate learning and drives desired organizational adaptations. Strategic measurement systems form the basis for data collection, analysis, interpretation, storage, and sharing among members in an organization. In these respects, the systems are crucial in eliciting the necessary information for organizational learning. Thus, strategic measurement systems help in developing, retaining, usage, sharing unique organizational capabilities for sustainable competitive advantages (Kuuluvainen, 2012). Moreover, for the organizational learning to be fully effective and insightful, then the means of data gathering must be adequately detailed to provide in-depth information.

Meaning that strategic measurement systems should have adequate depth to ensure that learning is insightful and as robust as possible.

2.2.3 Decision Making Theory

The concept of strategic management is recognized as a complex and uncertain. In this context, it is important to foster the generation of knowledge among decision makers to the context and their ability to adapt accordingly to contextual variabilities. Performance measurement thus, acts a tool for "building knowledge in the decision maker about the specific context he/she proposes to manage, allowing him/her to visualize the impact of the status quo and others' actions in the aspects that he/she believes are important to support the management process, by means of activities that: identify; organize; measure ordinally and cardinally; and integrate the relevant criteria" (Azevedo, *et al,* 2014) .

The traditional approach to understanding individual decision making is based upon classical decision-making theory or the rational economic model, which integrates the concept of rationality and rational decisions within the whole process of discussions and prescriptions (Li, 2008). Diversity has characterized the approaches to understanding rational choice theory (RCT). However, while alternative versions of rational choice theory are undeniable, the economic approach is the most visible and influential example of rational choice theory and it has been a source of inspiration for rational-choice theorists in the other social sciences (Hedström & Ylikoski, 2014).

Ogu (2013) records that rational choice theory was early popularized by a 1992 Nobel Memorial Prize Laureate in Economics Science, Gary Becker, who was one of the first to apply rational actor models more widely. There theory makes a number of stringent assumptions. Hedström and Ylikoski (2014), presented a summary of the three most important assumptions. First is the assumption that an individul's desires or preferences are complete, transitive, and independent of irrelevant alternatives. Notwithstanding, it is worth noting that the rationality as presented here is limited to the choice process and does not question the rationality of the individual's desires or preferences. Second is the assumption that individuals have perfect information and they know everything relevant

that is there to know and all beliefs are true. Third is the assumption that individuals have the ability to determine the best possible action given his/her beliefs and desires.

Al-Tarawneh (2012) summarises the rational choice decision-making as "the moment in an on-going process of evaluating alternatives related to a goal, at which the expectation of decision maker with regard to a particular course of action impels him to make a selection" (p. 3). According to this definition, rational decision-making process assumes presence of goals, complete information, and the cognitive capacity of a rational individual to analyse a problem and come up with alternative solutions from which a solution with the highest possible gain or lowest possible loss under the circumstance is selected for implementation (Novicevic, Clayton, & Williams, 2011). That is, the process of rational decision-making or perfect rationality attaches numerical values or utilities to each of the alternatives during the "choice" phase and the alternative with the highest utility (or maximum subjective expected utility) is selected (Turpin & Marais, 2004). The goal is to optimize the choice selected.

This model has been criticized for its simplicity and the general assumption that decision-making is uniform. That is, rational, deliberate, purposeful action, beginning with the development of a decision strategy and moving through implementation and appraisal of results in all circumstances. This could never be far from the truth in practical sense. Organizations face different problems and information is never always symmetrical as assumed and depicted in the model. In fact, inadequate information and uncertainty may make it difficult for individuals to adopt rational decision making, thus resorting to other ways of making decisions.

Further, the theory assumes that at the organizational level, decision making can be modelled from an individual's social action. It is worth noting that aggregation of the model at the organizational level may not always be feasible due to complexities of interactions and at the organizational level (Ogu, 2013). Moreover, in reality norms, culture and habits are major guides to meaningful decisions making. In fact, there is a

growing view that under certain conditions, intuition may be as good as or even superior to analytical thinking in decision making (Julmi, 2019).

In addition, human decision-making process often involve complex set of facts and experiences which makes exclusive use of rational approach in decision making near impossible. That is, typically people have incomplete and sometimes even incoherent preferences. Furthermore, people often miscalculate risks and discount the future excessively, they are vulnerable to framing, anchoring, priming, and other effects, and they often behave in ways that are difficult to interpret as being exclusively motivated by self-interest and rationality (Hedström & Ylikoski, 2014). Besides, construction of criteria for separating rational and irrational actions is not absolutely explicitly.

The study argues that strategic measurement system act as a tool for enhancing strategic decision-making process by providing the necessary information upon which the decision maker weighs possible actions to select one with the best possible outcomes. Strategic measurement systems are used to gather data necessary for comparing the actual versus desired outcomes for problem identification. Strategic evaluation then examines the consequences of alternatives and choosing the most feasible plan (strategy) of action. Moreover, strategic measurement systems ensure a stream of continuous flow of information through its monitoring framework for rational decision-making.

Rationality, which is a key attribute of strategic decision-making process, reflects a desire to make the best decision possible under given circumstances. It is characterized by an attempt to collect the information necessary to form expectations about various alternatives, and then use of this information in selecting the most feasible and advantageous strategies and plans of action (Francioni, Musso, & Cioppi, 2015). Thus, rational decision-making requires the use of the right and complete information. The study further argues that provision of the right information for rational strategic decision-making is proceeded by use of strategically aligned measurement systems to provide the right information (information with strategic relevance). Similarly, detailed (deep)

strategic measurement systems would be critical in generating insightful and robust pool of information for rational strategic decisions making.

2.2.4 Dynamic Capabilities Theory

The creators of the theory endeavoured to develop a framework which explains how certain firms create wealth and how they build their competitive advantages in regimes of rapid change (Gorgól, 2017). The idea of dynamic capability first emerged in Teece, Pisano and Shuen (1990) working paper series and later formally published by Teece and Pisano (1994) before being elaborated by Teece, *et al*., in 1997 and Teece in 2007 (Kaur & Mehta, 2017). In the classical theory context, dynamic capabilities approach builds upon the theoretical foundations provided by Schumpeter in 1934 (Kitenga & Thuo, 2014). In the Schumpeterian world of innovation-based competition, price/performance rivalry, increasing returns, and the 'creative destruction' of existing competences, dynamic capabilities are stressed in exploiting existing internal and external firm specific competences to address changing environments (Teece, Pisano, & Shuen, 1997).

More recently, dynamic capabilities theory can be fitted within the realms of resource-based view of the firm (RBV) and Porter's market positioning theory (Collins & Anand, 2019). On one hand, the RBV theory aspired to explain differences in performances which are related to a firm's internal idiosyncrasies rather than those related to economic or industry conditions to drive a firm's sustained competitive advantage (SCA) (Ferreira, *et al*., 2011). The RBV has been criticised for assuming a perfect and static market conditions. The dynamic capabilities theory therefore emerged as an alternative approach to solve these perceived weaknesses in the resource-based view theory. Particularly, the theory was developed to compensate for the RBV's shortcoming in explaining sustainable competitive advantage in a dynamic environment (Barney, Ketchen, & Wright, 2011).

On the other hand, in Porter's market positioning theory, industry factors and external market orientation are the primary determinants of the firm performance. That is, a firm's profitability or performance are determined solely by the structure and competitive dynamics of the industry within which it operates (Wang, 2014). According to Porter

(1980), the sources of value for the firm are embedded in the competitive situation characterizing its end-product strategic position. Here, strategic position is defined as the firm's unique set of activities that are different from their rivals. Alternatively, the strategic position of a firm is defined by how it performs similar activities to other firms, but in very different ways (Wang, 2014).

In this perspective, in formulating strategy, firms commonly make an overall assessment of their own competitive advantage via an assessment of the external environment based on the five forces model (Porter, 1980). Porter's five forces which determine industry competition include, threat of new entrants, bargaining power of customers, bargaining power of suppliers, threat of substitute products or services, and rivalry among current contestants. The combined strength of these forces defines the ultimate profit potential of an industry. Pervan, Curak and Kramaric (2018) explain that when the industrial rivalry is not strong, companies have the ability to raise prices and hence earn higher profits. Likewise, the larger the bargaining power of customers/suppliers and the larger the threat of new entrants, the lower the firm's profitability. Finally, if the substitution of a company's products or services is fairly easy and of low cost, then the company's power can be weakened, and the firm's profitability can be reduced. Hence, according to Grigore (2014), awareness of these forces can help the company take a position in its industry that is less vulnerable to attack creating industry profitability in the medium and long term.

In the market positioning, a firm's relative performance is determined by its strategic power or position within the industry. According to the market positioning, generally for a firm to be competitive, it either occupies a position of a monopoly, have strong barrier to entry for competitors or have strong bargaining. Pervan, Curak and Kramaric (2018) posit that when a firm has a monopoly, it has a strong market position and therefore performs better, while high barriers to entry for new competitors in an industry lead to reduced competition and hence better performance. Still higher bargaining power within the industry relative to suppliers and customers also leads to better performance.

Dynamic capability theory is thus linked to the resource-based view to the extent that both theories argue that for a firm to gain competitive advantage, it must possess unique resources (capabilities). Likewise, dynamic capabilities theory is linked to Porter's market positioning to the extent that both argue that external industry conditions play a critical role in a firm's competitive advantage. However, resource-based view and market positioning theories have been criticized for being based on an assumption of a classic perfect market as well as static market structure, conditions which are most unlikely in present-day dynamic markets where change remains the only constant factor. Further, the theories ignore the complex multiple interrelations within and without the firms. The theories also take unidirectional view of firm competitiveness. That is, while resource-based view solely focuses on the internal resources, the market positioning view considers market condition as the sole source of competition.

Dynamic capabilities theory therefore emerged to address these shortcomings in both resource-based view and market positioning theories. According to Teece, *et al*. (1997), dynamic capability is "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing industry environments" (p. 516). This theory evolved with the realization that business environment is continuously changing. Therefore, the concern of most firms shifted from just possessing heterogeneous resources and capabilities as proposed by the resource-based view to maintaining a dynamic fit between what the firm has to offer and what the environment dictates (Kuuluvainen, 2012). The dynamic capabilities theory focuses on the firm's ability to face rapidly changing environments, in order to create and renew resources, and change the resource mix for sustainable competitive advantages (Landroguez *et al*., 2011).

Based on the RBV, the dynamic capabilities view was created with the realization that a firm can create economic value not simply due to mere possession of resources, but also based on effective and innovative management of resources (Gorgól, 2017). With this realization, Teece *et al*. (1997) postulated that competitive advantages can be drawn from the distinctive ways of coordinating and combining a firm's processes, which are created

and shaped by the specific positions of a firm's assets and the firm's path based on evolution (history and experience) (Teece *et al*., 1997). Therefore, competitive success is defined by a firm's ability to timely respond to changes in the environment through rapid and flexible product innovation and development coupled with the management's capacity to effectively coordinate internal and external redeployment of competences.

In this respect, dynamic capabilities presents path-dependent processes that allow firms to adapt to rapidly changing environments by building, integrating and reconfiguring their resource and capabilities portfolio (Bleady & Ali, 2018). Hence, the essence of this theory is that firms derive competitive advantage from the continuous development, alignment and reconfiguration of firm-specific resources (Kuuluvainen, 2012). According to Gorgól (2017) in explaining the dynamic resouces theory, a firm's competitive advantage lies in the firm's managerial and organizational processes, which are shaped by valuable, rare, inimitable and non-substitutable (VRIN) assets position and inherited firm evolutionary path. Managerial and organizational processes in this context are routines or patterns of current practice and learning whose major role is coordination/integration, replication, reconfiguration, cooperation and reconfiguration (Gorgól, 2017).

Nonetheless, reasonable criticism has been presented against the theory. First is the lack of clarity on what constitutes the core concepts and terminologies. Underestimating the linguistic definitions of major terms such as ability, capacity, capability and competency has been the theory's main undoing (Bleady & Ali, 2018). These words are often used interchangebly by the proponents of the theory without considering the fundamental differences created by their individual root meanings. That is, there is an absence of clear models to measure capabilities. It is of paramount importance for the theory to use consitent and approriate linguistic definitions of general terminologies.

Secondly, the theory does not make it explicit what exactly is the source of SCA. Is it the the potential for action (capability for action) or is it the introduced action (process) or is it the result of action (impact/change/outcome)? (Gorgól, 2017). That is, does the dynamic capability arise from organizational potential for change or process of changing, or

achieved change? Dynamic capabilities are actaully attributed to a wide range of resources, processes and capabilities. That is, the theory is ineffective in providing a complete answer regarding the nature of dynamic capabilities and how they operate (Bleady & Ali, 2018).

Thirdly, Bleady and Ali (2018) cited difficulty in determining the merits of the outcomes of the theory. In addition, the theory has been criticized for being repetitive. Moreover, while acknowledging that dynamic capabilities (of all types and levels) can be valuable, Collins and Anand (2019) note that they are not the ultimate source of sustainable competitive advantage. They posit that while developing such capabilities is desirable, there are important limitations to their effectiveness and cannot be generally assumed to automatically lead to sustainable competitive advantages.

Since, dynamic capabilities arise from experience and learning (Schweizer, 2015), this study argues that SMS create a continuous learning framework, which enhances organizational dynamic capabilities to respond to the changes in the environment. Particularly having a flexible SMS would be critical in adjusting to emerging issues to facilitate continuous acquisition of information for continuous development and reconfiguration of firm specific resources to effectively respond to emerging issues.

In this way, flexible strategic measurement system forms the basis upon which the organization dynamically gauges the differences between strategic targets and actual achievement to institute remedial measures to meet new requirements and situations. Hence, dynamic capability acquired by the adoption of flexible SMS enhances the firm's ability to change to match the changes in the environment.

2.2.5 Strategic Measurement Models and Frameworks for Medium Sized Firms

In the literature, several models and frameworks of performance measurement systems have been presented. They do differ not only in scope, intensity, complexity, and construction, but also in many other characteristics (Waśniewski, 2017). These models are divided into universal and specific models (implementable only in a specific sector or a characteristic environment). For the specific sub category, there are those well-

established and best suited for large firms with emerging literature striving to adapt them or develop new ones focusing on micro, small and medium sized enterprises.

There are about twenty-one common performance measurement system models that have been widely used and discussed in the literature for small and medium sized enterprises. Thirteen of these models are generic models and do not make reference to firm size while eight are created specifically for small and medium sized enterprises (Waśniewski, 2017). Some of the peculiarities exhibited by small and medium sized enterprise calling for specific model include the fact that decision making and management in SMEs are largely influenced by owners or direct business management; SMEs do not have clear understanding for the need of measurement of performance or the potential benefits; and that SMEs rarely implement integrated and SMS (Ahmed, 2017).

Further, salient characteristics of SMEs such as limited human resources; managerial inadequacies; limited capital resources; reactive approach; tacit knowledge and little attention to the formalization of processes; misconception of performance measurement are obstacles to the implementation and use of a complex performance measurement system (Ahmed, 2017). Thus, these fundamental differences between SMEs and large companies, result in low efficiency of performance measurement practices in micro, small and medium sized enterprises. Table 2.1 presents select models and frameworks of performance measurement systems for small and medium enterprises.

Table 2.1: ***Models of performance measurement systems for SMEs***

Model	**Author (s)**
Non-Size Specific Models	
Performance Measurement Matrix	Keegan, *et al.* (1989)
Performance Measurement Questionnaire	Dixon, *et al*. (1990)
Performance Pyramid System	Lynch & Cross (1991)
Performance Measurement System for Service Industry	Fitzgerald, *et al.* (1991)
Balanced Scorecard (BSC)	Kaplan & Norton (1996)
Integrated Dynamic Performance Measurement System	Ghalayini, *et al.* (1997)
Integrated Performance Measurement System	Bititci, *et al.* (1997)
Integrated Performance Measurement System	Medori (1998)
Quantitative model for performance measurement system	Suwignjo, *et al.* (2000)
Performance measurement for product development	Driva, *et al.* (2000)
Performance Prism	Neely, *et al.* (2002)
ECONGRAI	Ducq, *et al.* (2001)
Supply Chain Operations Reference (SCOR)	Supply Chain Council 2006

Specific models for SMEs	
Organisational Performance Measurement	Chennell, *et al.* (2000)
Improving control through effective performance measurement	Hudson, *et al*. (2001)
Theory and practise in SME performance measurement systems	Hudson, *et al*. (2001)
Integrated Performance Measurement for Small Firms	Laitinen (1996), (2002)
Adaptation of Balanced Scorecard for SMEs	Davig, *et al.* (2004)
Balanced Scorecard in non-profit SMEs	Manville (2007)
Measuring Performance of SMEs	Chong (2008)
Performance Measurement System IRIS	Chalmeta, *et al*. (2012)
The Circular Methodology	Garengo & Biazzo (2012)

Source: Waśniewski (2017)

Performance Measurement Matrix integrates financial and non-financial measures along the internal versus external dimensions in a two-by-two matrix. That is, it measures both internal and external financial and non-financial indicators (Waśniewski, 2017). The model is preferred due to its simplicity, flexibility, integrated approach on what measures should look like and strategic alignment but criticized for lack of detail in relation to making the links between different business dimensions, objectives and indicators. In addition, the model does not include customers or human resources as dimensions of performance; cannot give a truly balanced view of performance and consists of several different tools (potentially complicated to understand and use); and fails to provide an explicit process for developing the performance measurement model (Striteska & Spickova, 2012).

Performance Pyramid System also known as strategic measurement analysis and reporting technique (SMART) integrates the strategic objectives and operational performance dimensions through a four-level structure translating objectives from the top down (based on customer priorities) and measures from the bottom up (Taouab & Issor, 2019). The first level involves defining overall corporate vision, which is then translated into business unit objectives at the second level. At the business unit, short-term goals of cash flow and profitability are set as well as long-term targets of growth and market position are defined and tracked.

The third level contains day-to-day operational measures (customer satisfaction, flexibility and productivity) with the fourth level including four key performance

measures (quality, delivery, cycle time and waste). All these in an attempt to define internal efficiency and external effectiveness (Waśniewski, 2017). While the model has been hailed for its strong attempt to integrate corporate objectives with operational performance indicators; ease of understanding both the system and relations among the different indicators/process management; and in promoting management of performance measurement strategically, the model fails to provide any mechanism to identify key performance indicators. Further it fails to specify the form of the measures and does not explicitly integrate the concept of continuous improvement (Striteska & Spickova, 2012).

The performance measurement system for service industries also known as Results and Determinants Framework was developed by Fitzgerald *et al.* (1991) with focus on service business. The model has six performance dimensions classified into results and determinants. The measures related to results are competitiveness and financial performance measures which are outcomes of certain actions. The framework conceptualises these measures as lagging indicators that reflect the ultimate objectives of an organisation. Measures related to determinants of results are quality, flexibility, resource utilization and innovation conceptualized as leading indicators because they measure actions that lead to certain outcomes (Waśniewski, 2017).

The framework thus creates a link between present business performances as reflected by results with the business performance of the past as measured by the specific determinants. This helps in identifying the performance drivers of future desired future success (Khan & Shah, 2011). It also shows a strong specific measurement model for time-based competition that consider with any measures to follow the mission of time-based competition.

The greatest strength of the model being its ability to define with high degree of accuracy the performance indicators needed, it also establishes a reaction between the determinants and the results elements. Nonetheless, according both of these factors though suitable for service performance measurement, they just focus on the financial and organizational strategy (Sorooshian, *et al.*, 2016). Further, the framework fails to combine other non-

financial performance measurement such as stakeholders and behavioural aspects. Particularly, it does not include customers or human resources as dimensions of performance and cannot, therefore, give a truly balanced view of performance.

The Balanced Scorecard (BSC) is a tool used for describing, elaborating, and implementing a vision and the strategy of a firm into fixed targets and clear set of financial and nonfinancial performance indicators (Taouab & Issor, 2019). The roots of BSC are pinned to market analysis, understanding rivals, negotiations with suppliers, agilities in distribution and dealing with governments. It emphasizes the linkage of measurement with strategy (Rafiq, et al., 2021). The BSC has four different perspectives – financial, customer, internal business and innovation and learning. The BSC gives a holistic view of the organization by simultaneously looking at the four perspectives, thereby enabling companies to track financial results while simultaneously monitoring progress in building capabilities and acquiring the assets needed for future growth.

The strongest points of the model include clarity of vision and strategy adopted; promote consistent monitoring of strategy; cross-disciplinary and hierarchy traversing communication process; promote integration of performance measures for operational objectives at an appropriate level; uses cause/effect relationships as instrument for management (Striteska & Spickova, 2012). Nonetheless, the model does not express the interests of all stakeholders; lack long-term commitment and leadership for management; lack employee awareness or a failure to communicate information to all employees; constructed as a controlling tool rather than an improvement tool; no relationships´ quantification; and is inappropriate to benchmarking (Striteska & Spickova, 2012).

Integrated performance measurement system was developed by Bititci *et al.* (1997) and underscores two main facets of the performance measurement system. First is the integrity, which refers to the ability of the performance measurement system to promote the integration of various dimensions of the business (Ahmed, 2017). Viability of integrity is tested against five dimensions. That is, having performance measurement system, which objectively measure the performance of an individual business process; supervisory

system which coordinates the activities of operational units; tactical management system which deploys the strategic policies and priorities; developmental, external influence and sustainability of the firm; and prioritisation of observable gaps in line with the corporate and strategic objectives set by the higher level system.

Second is the deployment, which describes ability to transform the business objectives and policies into action throughout the five hierarchical structure of the organisation (Ahmed, 2017). These include operational measures; process measures; strategic measures; business objectives and environmental requirements and competitive positioning. The model develops a method of auditing based on the four organisational levels of corporate, business units, business processes and activities and analyses five key factors in each of them (Stakeholders, Control Criteria, Internal and External Measures, and Improvement Criteria).

For each of its four levels, the model takes into account five critical factors that make it possible to define the most appropriate type of performance measures. The model is also well integrated covering a wider aspect of the organizational key success factors. Its main drawback is the fact that strategic alignment is not totally integrated and the model seems to work best in a highly structured and vertically oriented manufacturing institutions. Further, its implementation is highly complex requiring robust knowledge from the management team.

The Performance Prism (Prism) is a comprehensive measurement system that addresses the main business issues. The tool is used by management teams to influence their thinking when the strategic questions that need to be asked are established and consists of five distinct but interrelated perspectives (Taouab & Issor, 2019). The perspectives prompt the following questions for organizations to address when defining a set of performance measures. Who are our key stakeholders and what do they want and need? (stakeholder satisfaction); what are the competences needed by the organization to be able to make the processes work? (capabilities); what are the processes we have to put in place in order to allow our strategies to work effectively? (processes); what are the strategies

we require to ensure the wants and needs of our stakeholders? (strategies); and what do we want and need from stakeholders to preserve and develop our capabilities? (stakeholders' contribution).

The strength of the model lies in its ability to reflect new stakeholders (such as employees, suppliers, alliance partners or intermediaries) who are usually neglected when forming performance measures; considers the stakeholders' contribution to performance; and ensures that the performance measures have a strong foundation (Striteska & Spickova, 2012). It thus allows a strategic performance measurement system to be obtained. However, the model offers little information about how the performance measures are going to be implemented; some measures are not effective in practice; short of logic among the measures, no sufficient link between the results and drivers; and does not provide consideration on the existing performance measurement systems that companies may have in place.

Organizational Performance Measurement was developed specifically for small and medium enterprises and is based on three principles. First, the model proposes that measures should strive to achieve alignment between people's actions and company objectives. That is, to encourage people to align their efforts with the strategic directions of the enterprise. Second is the process thinking perspective where performance measurement system should be linked appropriately with system and process monitoring, control and improvement. This seeks to create an understanding on the influencers and drivers of performance in all processes, without the constraints imposed by vertical organisational structures (Chennell, et al., 2000).

Thirdly, is the practicability perspective requiring that at any level in the enterprise, there is a consistent process for identifying the sorts of measurements that need to be collected, and for assuring the data quality and fitness for purpose, i.e. at any level in the company there is a consistent process for identifying measures that should be considered and for ensuring the quality and suitability of data (Ahmed, 2017). Despite being structured in easily identifiable levels, the model is weak in defining clear objectives. Further, the

model is in the dissemination phase and extensive tests have to be carried out for validation (Langwerden, 2015).

Integrated Performance Measurement for Small Firms was specifically designed for small and medium enterprises. The model is based on seven main dimensions of measures, classified as two external dimensions (financial performance and competitiveness) and five internal dimensions (costs, production factors, activities, products and revenues) that are connected by a causal chain (Waśniewski, 2017). The internal dimensions are used to monitor the whole production process, and the external dimensions are used to monitor the company's position in its competitive context (Waśniewski, 2017).

The model is conceptualized in a manner that is easy to implement and track performance parameters. However, the model lacks a defined methodological structure for its application. In addition, it does not take into account the alignment between the measures that are adopted and the strategy. Additionally, stakeholders are not taken into consideration (Langwerden, 2015).

Performance Measurement System IRIS: The model was developed by Integration and Reengineering Group (IRIS) of the Universitat Jaume I, Castellon (Spain), with the view of solving the problem of a lack of methodologies for the implementation of performance measurement systems focused on small and medium enterprises. The key objective was to create a simple, useful and practical framework rather than looking for an ideal, perfect methodology that probably cannot be used in small and medium enterprises owing to complexity (Chalmeta, Palomero, & Matilla, 2012).

The model is an eight-phase continual evaluation and redesign, to ensure enhanced competitiveness and business management. The first phase is the planning phase, which involves defining the activities to be carried out, the sequence they are to be carried out in and the resources needed, as well as the quality control mechanisms and planning of the management of change. The second phase is defining of enterprise environment. This entails analysis of the competitive environment from both an internal organisational perspective by reviewing and specifying its mission, vision, values, strategies and

policies, and an external perspective by analysing the competitive environment in which the organisation will have to act in order to compete in current or potential markets. This allows for identification of critical success factors (Chalmeta, Palomero, & Matilla, 2012).

The third phase involves a thorough analysis of all the objectives that are to be reached and their relationships to design the key performance indicators at the strategic level. The dimensions of developing this strategic map are customers and suppliers, processes, financial, technology, human resources and social responsibility. The fourth phase involves business process analysis for possible re-design so as to be able to fulfil the strategic objectives. The fifth phase entails development of measurement by levels. This seeks to link the proposed indicators by evaluating the strategic decisions with the indicators in order to measure the results at the tactical and operational level throughout the different business units or processes. The sixth phase is validation. Here, they are revised by comparing them with other indicators that were already being used for detection of possible shortcomings or irrelevance.

Seventh phase calls for design of information and communications infrastructure that is capable of extracting the data for calculating the indicators, processing them and communicating them. Finally, eighth phase aims at ensuring that all members of the organisation are familiar with the system, well equipped and motivated to implement it, have ownership and full support from the top management. Although the model is well defined into steps which are easy to follow, it does not take into account the nonformalized and unstructured strategy usage in small and medium sized enterprise. Further, the model was developed only for organizations in the manufacturing sector and still lack adequate validation data (Langwerden, 2015).

The Circular Methodology was developed by Garengo and Biazzo (2012) for the SMEs and involves four stages through which SMEs can translate their individual dashboards performance measures, ultimately, to a desired dashboard with desired key performance indicators. The model asks four circular questions defining the four phases of the model.

That is, what are the controlled performances? What are the controlled factors? What are the critical success factors? What are the key performance measures?

The first phase is the “Individual dashboard”, which is about gathering performance information from individuals consisting of all performance measures that each person uses to assess the activities one is responsible for. All the individual dashboards are then combined into one implicit organizational dashboard, which is the synthesis of all individual dashboards. The second phase is the “implicit strategy” where organizational dashboard is used as the basis for the subsequent identification of the implicit strategy map. That is, identification of critical success factors, which are then mapped into the four classic perspectives of balanced scorecard. What emerges is the picture of the critical success factors that are kept under and control and that the company implicitly supports (Langwerden, 2015).

The third phase is the “desired strategy map” where the future and desired strategy are designed from the implicit strategy map by eliminating non-strategic critical success factors and adding new strategy critical success factors. Measures are thus aggregated at the organizational level and shown based on the 4 perspectives of the balanced scorecard in order to highlight the existing balance. The fourth phase is the “desired dashboard” where the company would translate the key performance indicators into measurements required to achieve the predefined objectives. The model takes into account the non-formalized and implicit nature of strategy within SMEs. In this way, the model uses a bottom-up approach, not starting with generic formulations of the vision but instead starts with the actual operational reality managed by individuals. Nonetheless, no validating and refining tests of the methodology have been conducted (Langwerden, 2015).

Analyses of these models show that performance measurement is much more than just a collection of measures and should have certain salient features to be effective. The measures must be aligned to overall firm strategy (Performance measurement matrix; Balanced score card; performance prism; performance pyramid; results/determinant framework); have clearly defined targets and objective (Results/determinants

framework); comprehensive with multi-dimension facets (Balanced score card; Results/determinants framework; performance prism; Integrated performance measurement for small firms); ability for vertically and horizontally integration (Performance pyramid; Balanced score card); causally related (Balanced score card; Results/determinants framework); comparable and useful (Circular Methodology); and have mechanism for continuous improvement (Performance measurement system IRIS; Circular Methodology).

For SMEs, the model should also be relevant, simple and easy to maintain (performance measurement matrix; organizational performance measurement; integrated performance measurement for small firms; performance measurement system IRIS) (Waśniewski, 2017). Organizational performance measurement, integrated performance measurement systems for small firms, performance measurement systems IRIS and the circular methodology were purposely developed as performance measurement systems for SMEs (Amir, Auzair, & Ismail, 2014). Their inherent weaknesses and inadequacy of validation raises the question as to whether the models fully comply with the needs of small and medium sized enterprises (Langwerden, 2015; Ahmed, 2017; Waśniewski, 2017).

2.3 Conceptual Framework

For effective strategic management, performance measurement systems (PMS) play a critical role of gathering information, elaborating information, analysing information, triggering change in behaviour, influencing change in capability and favouring qualitative growth (Sousa *et al*., 2006). Thus, performance measurement systems help in achieving high organizational outcome standards by providing a framework for evaluating actual performance against pre-set targets to trigger appropriate changes for sustainable firm performance (Cocca & Alberti, 2010; Neetu, Sushil, & Mahim, 2013).

Although there are multiple models and frameworks of performance measurement systems that have been developed to attempt to suit the demands of contingency such as sectorial and firm size differences, most models developed specifically for small and medium sized firms are still few in number and in practice they have not proved to be

completely satisfactory (Chalmeta, *et al.*, 2012). The development and implementation of PMS that best suits specific contexts is a complex affair that has not been satisfactorily resolved by the common generic models currently in use. With a view to solving this problem, different methods have been proposed to construct or validate alternative models in existence. Therefore, there is need to first reconstruct the PMS by focusing on key drivers of its success in any given context then seek for validation (Langwerden, 2015).

Franco-Santos and Bourne (2005) present two dimensions of factors that influence the effectiveness of performance measurement systems. These include process factors and the contextual factors. The process factors include the design and use factors. The design factors are those factors that enable an organization to effectively develop a PMS with a clear measurement framework; strategy maps; measures; targets, and information infrastructure. On the other hand, the use factors influence the way performance measurement systems are implemented. These use factors include management agreement and support, employee empowerment and motivation as well as communication.

The last set of process factors include the effective use factors such as review and updates; data analysis, interpretation, decision-making and action taking; rewards; and performance measurement tools, which enable an organization to better manage through measures. The contextual factors are classified as internal and external factors. According to Franco-Santos and Bourne (2005), the internal factors include firm strategic focus, culture, organizational structure, and size, while the external factors include industry characteristics and environmental factors.

Table 2.2: ***Factor influencing Performance Measurement***

Factor	Sub-Factors
	Process
Design	Performance measurement framework and strategy map
	Measures & Strategy
	Alignment and integration
	Information infrastructure
Implementation	Top management agreement and commitment
	Employee empowerment, enable, encourage
	Communication
Effective Use	Review and update measures
	Data analysis, integration, decision making and action taking
	Rewards
	Performance measurement helping tools and management processes
	Context
Internal	Organizational structure and size
	Culture
	Firm strategy
External	Industry
	Environment

Source: Franco-Santos and Bourne (2005)

Taking into account the unique features of the SMEs and the service sector in general, this thesis formed the view that these unique characteristics form part of the requirement that a PMS has to fulfil to be considered effective for this category of firms. Thus, the evaluation was to establish the suitability of the SMS in use to be able to fit within the unique characterises of the SMEs. Particularly, scarce decentralisation of authority; limited resource base; lack of formalisation and alignment in terms of the Mission, Vision, Goals, Strategies and operational activities; and possibility of a low level of motivation and communication to adopt SMS (Waśniewski, 2017).

Further, it is worth noting that performance measurement systems for small and medium sized firms should be simple, dynamic and flexible, but at the same time must be structured to some degree, which promotes active planning and stability. In addition, the system should be broadly balanced to cover all facets of the organization, and with moderate detail to ovoid overburdening of the limited resources. In this view, the study examined how performance measurement system's design features of breadth, depth, alignment, and flexibility influence the system's impact on firm performance.

Moreover, in line with results/determinants framework developed to cater for the needs of the service sector, the study explored the mediating role of customer value on the relationship between strategic measurement systems and firm performance. The study also investigated the moderating effect of organizational structure and size on the relationship between strategic measurement systems and firm performance. Even though conceptualizing these design parameters as key drivers of the effectiveness of performance measurement system in SMEs have been proposed in theory, there is scarcity of literature evidence that the relationship of these design parameters of strategic measurement systems as presented has been tested among the medium sized service firms in Kenya. Therefore, this thesis, sought to highlight how the proposed model affect the overall effectiveness of the strategic measurement system and how it affects the overall performance of medium sized services firms in Kenya in general.

The proposed evaluation model is unique in that it involves identification of integrated measure indicators and mapping them along the SMS critical success factors of breadth, depth, alignment and flexibility. These perspectives are particularly significant for the service sector as they respond to the SMEs' salient features. The model also integrates causal effect (results/determinants framework), which acknowledges that the results obtained today are a function of past business performance in relation to specific determinants. An approach singled out to be most relevant for the service sector. This differs from most models such as organizational performance measurement, integrated performance measurement systems for small firms, performance measurement IRIS, and Circular Methodology, which only measure performance at the terminal level.

While specific objectives 1, 2, 3, and 4 explored the separate effects of breadth, depth, alignment, and flexibility of SMS respectively on performance, in reality these elements do not exist in isolation. The elements are normally interrelated and or interdependent. The study therefore, expected an observation of joint composite effects of the independent variables. Figure 2.1 illustrates the conceptual framework.

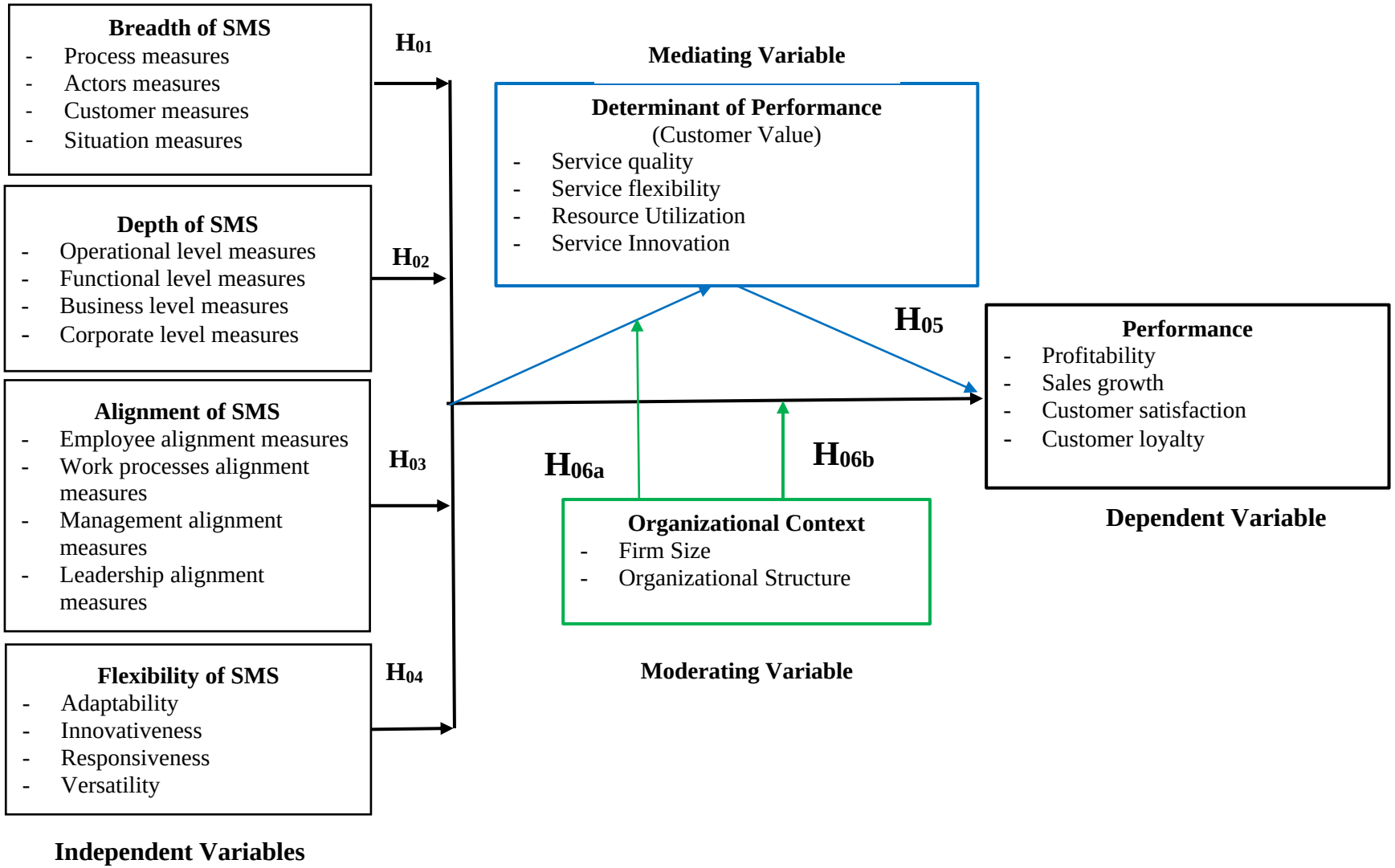


Figure 2.1: Conceptual Framework

2.3.1 Breadth of Strategic Measurement System

Breadth defines the scope of activities and measurement elements included in a performance measurement system (Wasneiewski, 2017). According to Garengo, *et al*. (2005) broad performance measurement systems seek to measure as many as possible performance of activities within an organization. Therefore, a broad system pursues a holistic assessment of the organization. Rasit and Isa (2014) observe that the wider the scope or comprehensiveness of measure used in the performance measurement system, the higher the quality of information produced by the system implying that as the company include more measures in the SMS, the better the quality of information produced by the strategic measurement system.

Flexible strategy game card model proposed for evaluation of breadth of strategic measurement system in this study is designed on the principle of integrating financial and non-financial measures; short and long-term objectives; leading and lagging performance indicators; and internal and external performance measures in a comprehensive framework (Neetu, *et al*., 2011). The model intends to support a whole cycle of strategy formulation and execution as well as to develop an integrated and dynamic view of performance management (Neetu, Sushil, & Mahim, 2012). To develop the model, Sushil (2010) re-classified the four perspectives of Balanced Score Card (BSC) model into two broad perspectives. That is, enterprise perspective and customer perspective. The enterprise factors include the first three perspectives of BSC (financial, internal process, and learning & growth factors); while the customer factors include the fourth perspective linked to customers.

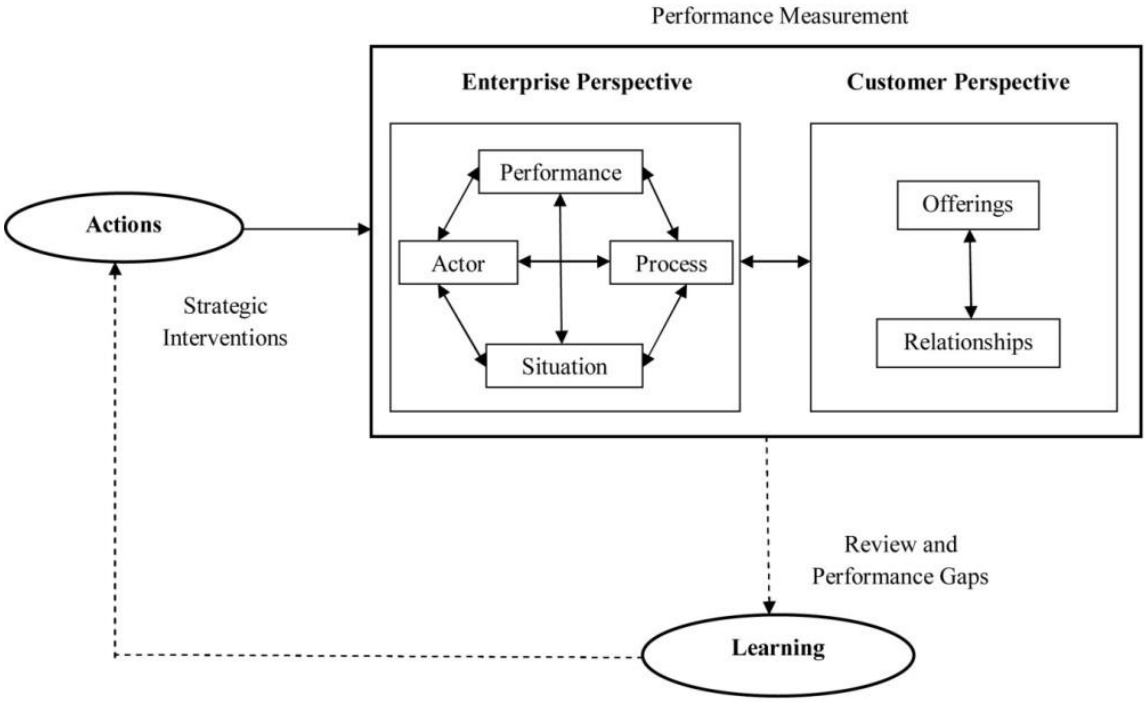


Figure 2.2: Flexible Strategy Game-Card

Source: Sushil (2010)

According to Sushil (2010), the situation (S) factors are dealing with proactive and reactive measures of strategic actions and comprises of external and internal situations. The internal situation is linked to the strengths and weaknesses of the enterprise while the external situation factors are linked to the opportunities and threats in the business environment. Actor (A) measures deal with internal actors (such as leadership and employees) and external actors (such as customers, distributors, alliance partners, investors, shareholders and society) (Sushil, 2010). Process factors are related to strategy execution, which deals with internal processes such as innovation, manufacturing, knowledge management, productivity, quality, and flexibility; and external processes such as supply chain, marketing, branding, managing strategic alliances, outsourcing or mergers and acquisitions.

Performance factors are treated as the lagging factors, which are the outcomes of the strategy. Sushil (2010) explains that these can be considered as financial as well non-

financial measures. They are the key result areas (KRAs) that are treated as 'lagging factors' in the BSC and are influenced by the 'leading factors' or critical success factors (CSFs). The significant financial performance factors are linked both to the top line and the bottom line, i.e. revenue growth and mix, market share, market value, profitability, risk and cost reduction. There are also non-financial performance factors such as cycle time, production turnover, inventory, and on-time delivery.

Customer factors related to flexible strategy game-card considers the performance of the enterprise from customer's perspective, which is linked, to value, offerings, and relationships to the customers. The customer factors are both generic and specific in nature. Some generic offers to customers could be cost, choice, delivery, connectivity, service, and speed. On the other side, there are contextual customer factors specific to each industry/enterprise/product/service and are to be identified to define the strategy in a given context (Sushil, 2010). The model therefore provides a broad and wholesome measurement framework. Bäuml (2014) argue that a broad system allows for a comprehensive assessment of firm performance.

Hence, having a broad system ensures that all facets of the organization are captured to give more accurate information usable in decision making to improve sustainable performance. It also involves inclusion of financial and non-financial measures which cover wider perspectives and provide understanding of the linkages between business operations and strategy (Rasit & Isa, 2014). The risk of having a system with a narrow scope is that, some factors that may be significant in defining the overall organizational performance could be omitted with negative consequences. The general preposition for this study was that variation in the scope of strategic measurement system causes a significant difference in firm performance. According to the flexible strategy game-card, for performance measurement system to be broad enough, it must assess the situation; actors; processes; and customer perspectives.

H_{01}: There is no relationship between the breadth of strategic measurement system and performance of medium sized service firms in Kenya.

Breadth of the strategic measurement system was evaluated based on whether its scope include measures of organizational situations; actors; processes; customer perspectives and performance. Table 2.3 outlines the dimensions as proposed by Neetu *et al*. (2015).

Table 2.3: *Breadth of Strategic Measurement Systems*

Scope	Dimension	Types of Performance Measures
	Internal	**External**
Actors	Employee satisfaction	Customer satisfaction
	Top management support	Stakeholders satisfaction
Situation	Technology base	Level of competition
	Financial health	Government regulations and policies
Processes	Service/market innovation	Supply chain
	Efficiency, satisfaction, competency, work place quality	Distribution
Customer perspective	-	Customer value index
	-	Customer relationship
	Financial	**Non-financial**
Performance	Net Profit	Customer Offerings (value)
	Average Return on Assets	Pricing
	Dividends (ROE)	Customer Relationship (Brand)
	Market share	-
	Average revenue growth	-

Source: Neetu *et al*. (2015)

2.3.2 Depth of Strategic Measurement System

Garengo *et al*. (2005) define depth as the level of detail to which performance measures and indicators are applied. That is, the level of detail of applied performance measures (Wasneiewski, 2017). In-depth performance measurement system not only measure strategic indicators but also cascade the indicators to all levels of the firm's operation. The focus is on implementing the performance measurement system in a highly practical manner. That is, each strategy level be it at the operational, functional, business or corporate strategy should have a high level of detail. For instance, at the functional level, there should be specific goals for each department, and the respective managers should have specific criteria through which the successes of the team are measured. However, it is worth noting that too much focus on depth may lead to concentrating on operational short-term goals at the expense of strategic objectives.

Moorthy and Polley (2010) liken depth to analytical sophistication a firm develops as it delves deeper into its current areas of expertise. The argument for the focus on depth is

that, it makes scientific performance measurement and evaluation process more efficient as it creates a good understanding for the firm on the pitfalls associated with the alternatives and past experiences. Therefore, one can expect a more objective, accurate, evidence based and sound decisions from the process. Firms build depth through exploitative learning where search for information and knowledge is localized to operational fields in which the firm is active.

Drawn from qualitative field of research, in-depth performance measurement systems target to expose more detailed understanding on the effects of specific performance factors rather than the general characteristics of these elements. An in-depth performance measurement system not only measure at the scope of performance factors but probes deeply to uncover new clues, open new dimensions and secure clear, accurate and detailed accounts. The general proposition for this study was that focus on the breadth of elements covered in the performance measurement system alone is not sufficient for an effective strategic measurement system.

While including different dimensions in the system is significant in ensuring that all critical determinants of firm performance are captured in the measurement, the level of detail of these measurements are equally important to ensure that the data gathered offers sufficient actionable information that forms strategic direction and performance. In-depth performance measurement creates understanding of the complex interaction between variables and firm performance and this becomes even more important in the conditions of the current changing environment and economic situation (Zizlavsky, 2014).

Emphasis on depth may work well for large firms with adequate resources but may be counter-productive for small firms since focusing on too much detail may end up tying up resources the small firms may not have (Bäuml, 2014). The general argument in literature according to Wasneiewski (2017) is that small and medium sized establishments should not use deep performance measures, because they focus on just a few aims and prolong the implementation of the system. Thus, the recommendation that SMEs should

use performance measurements systems focused on breadth, so that they could develop a simple model and an integrated approach to corporate management.

This presents a delicate situation where on one hand, little detail may not give sufficient information for sound decision making while on the other hand too much detail may demand too much resources thus negatively affecting the overall performance of the firm. According to Rogers, Plante, Wong and Evans (1991) a fundamental issue in the use of optimal models is the trade-off between the level of detail and ease of using the model. In determining the appropriate policies to employ for this trade-off, they identified aggregation and disaggregation techniques as valuable tools for manipulating data, solving large-scale optimization models, supplying a set of methodologies for studying the underlying structure of both univariate and multivariate data sets, and providing a set of tools for manipulating data for different levels of decision makers.

In simple terms, to aggregate data is to compile and summarize data from multiple sources, variables, dimensions, measures and or individuals to enhance examination and understanding of trends, making comparisons to reveal information and insights that would not be observable when data elements are viewed in isolation. On the other hand, to disaggregate data is to breakdown or separate compiled information into component parts of smaller units or perspectives to elucidate underlying trends and patterns. While summaries are crucial in examining overall trends, aggregation may equally lead to loss of contextual information leading to misrepresentation of facts. Thus, disaggregated data is crucial in generating valuable detailed information for progress measurement, real time decision-making, accurate situational analysis, enhanced understanding of contextual factors, early problem and pattern detection.

To achieve balanced detail, indicators for strategic measurement systems (SMS) can be disaggregated based on a number of dimensions including, time, staff output domain, value creation loci and strategy. Time based disaggregation seeks to determine whether periodicity such as hourly, daily, monthly, quarterly and annual reporting is adequately entrenched in the strategic measurement system. Secondly, employee task-oriented

disaggregation seeks to establish whether employee output units such as individual performance, operational units and regional performance is adequately measured and reported. Third, based on the value chain analysis framework, value creation loci disaggregation explore extent to which measures at various value creation nodes such as inbound logistics, operations, outbound logistics and support systems are measured and reported. Finally, strategy-based disaggregation looks at that incorporation of measures addressing the hierarchical categorization of strategy via functional, business and corporate level strategies.

In summary, literature review reveal that performance measurement systems can serve a range of purposes. There are those which are designed essentially to give strategic direction (through targets based on measures of strategic performance), others seek to enhance organizational capabilities (through "stretch targets" based on performance measures), and yet others seek to support evidence-based management (through providing performance indicators for benchmarking exercises) and organizational learning (through providing measures of "what works"). Further, the system may be designed to ensure control of organizational behaviour.

While, a good performance measurement system must also be able to help in all three phases of evaluation of the organization's activities of appraisal of options, monitoring of current activities, and review of past experience, the level of detail varies with the phase. For instance, the level of detail in monitoring is typically less than in appraising options, whereas review often uses the most detailed performance information, including data collected on a one-off rather than a regular basis. Nonetheless, in overall in medium sized firms, performance measurement systems are more often than not presented with the challenge of inadequate depth. Across the evaluation phase, the systems generally suffer from simplicity and inadequate interactions/integration of measures characterised by infrequent reporting, fewer number of measures, highly aggregated data, invalidity and inaccurate measurement matrices. This study presumed that more detail would positively influence firm performance.

H_{02}: There is no relationship between the depth of strategic measurement system and performance of medium sized service firms in Kenya.

The depth of the performance measurement system was evaluated based on whether the system used is characterized by detail. An index of depth was a proxy designed as a simple arithmetic mean of all answers to the questions about the detail of the SMS. The dimensions are as outlined in Table 2.4 as proposed by Petr, Jaroslav and Michal (2012).

Table 2.4: ***Depth of Strategic Measurement Systems***

Dimension	Characteristics of Measures
Disaggregation	Exhaustively measure operational objectives and performance
	Measure all objectives and performance of all departments
	Focus on practical implementation of the performance system
	Successfulness of strategy implementation is evaluated and reported
Cascading	Business level objectives and performance are adequately measured
	Measures are sufficiently cascaded down through the organizational structure and components
	Measures for evaluation of fulfilling strategic goals are well defined and used
	Concentrate only on important objectives

Source: Garengo *et al*. (2005); Petr, Jaroslav, & Michal (2012)

2.3.3 Strategic Alignment of Performance Measurement System

The concept of organizational alignment has been used in several instances to mean organizational fit, integration, harmony, fusion or linkages. However, in all cases, the term involves integration of firm strategies and its systems (Avison, Jones, Powell, & Wilson, 2004). That is, matching organizational resources, systems and operations to the organizational strategy. Santa, *et al*. (2010) explain that two or more organizational dimensions are in alignment when the dimensions meet theoretical norms or mutual coherence. This state of coherence is however not static but a dynamic process of continuous adaptation and change.

The importance of alignment to organizational performance has widely been recognized in literature. Basir and NorzaidI (2009), acknowledged the importance of alignment in assisting organizations to focus on critical areas that have significant influence on organizational performance. Newkirk and Lederer (2006) posit that alignment increases

the understanding of the organizational goals and objectives among managers. According to Avison *et al*. (2004), alignment assist firms in maximizing return on investment; helps to achieve competitive advantage; and provide direction and flexibility to react to new opportunities. For instance, functional strategies must align with business and corporate strategies. If the corporate approach is to improve the level of market share and the business strategy involves the improvement of brand identification, the functional strategy should include improving product quality.

These benefits are achievable because alignment increases the likelihood of developing systems more critical to the organization with top management support. Systems with the right fit between external positioning and internal arrangements and systems create synergies that facilitate increased profitability and efficiency (Avison *et al*., 2004). Further, alignment ensures that organizational systems support the goals and activities of the organization at all levels (Chan, 2002). Alignment helps in identification of critical operations for growth and allocation of sufficient resources to such processes. In addition, alignment ensures that operational planning and business planning activities are in harmony in order to ensure seamless integration so that organizational goals and objectives can be achieved. Kekwaletswe and Mathebula (2014) add that alignment can successfully speed up innovation processes to ensure that business is in harmony with the competitive needs in the business environment and trends.

Strategic alignment model is one of the proposed models for actualizing organizational alignment. The model defines alignment along two dimensions, strategic fit, and functional integration. Strategic fit recognizes the need for strategy to address both external and internal domains of the organization. The external domain in this case is the business arena in which the firm competes and is composed of business scope (such as markets, products/services, customers, location, competitors, suppliers, and potential competitors); distinctive competencies (brand, research, manufacturing processes, product development, cost, pricing structure, sales, distribution channels); and business

governance (governmental regulations; relations between stockholders, management, other strategic business partners) (Coleman & Papp, 2006).

The internal domain is concerned with choices pertaining to the logic of the administrative structure (centralization, decentralization, matrix, vertical integration, geographic coverage, and functional organization types); the specific rationale for the design and redesign of critical business processes (product delivery, product development, customer service, total quality); and acquisition and development of human resource skills necessary for achieving the required organizational competencies (Coleman & Papp, 2006). The logic of establishing a fit between the external environment and the internal environment for enhanced organizational performance is important and relevant to strategic measurement systems.

The second perspective of strategic alignment model is the functional integration. This dimension considers how choices made in the functional systems impact those made in the organizational strategy and vice versa. The model presents two types of functional integration between organizational strategy and functional systems. That is, the strategic integration and operational integration. Strategic integration links organizational strategy to functional system's strategy. This consists of the system's scope, systematic competencies, and system's governance and defines the system's capability to shape and support the organizational strategy. Operational integration on the other hand links organizational infrastructure to processes and skills. This defines the actual practices and activities that the personnel do to develop and maintain the operational system's infrastructure (Coleman & Papp, 2006).

In summary, the model defines four domains (organizational strategy; organizational infrastructure & processes; functional system's strategy; functional system's infrastructure & processes) with scope, unique competencies, governance, infrastructure, processes and skills in each domain (Kekwaletswe & Mathebula, 2014). The strategic alignment model framework suggests that the above components should be in harmony in order to improve alignment. This study therefore argued that the strategy, infrastructure,

and processes of performance measurement systems must be in coherence with the strategy, infrastructure, and processes of the organization for enhanced sustainable performance. This means that for any performance measurement system to positively influence strategic outcomes, its design and implementation processes must be in line with the organizational strategy.

Specifically, the design should be such that it links the organizational strategy to the operational aspects of the system. This is particularly important because it shows the system's capability to stimulate desired actions both at the strategic and process levels towards the desired strategic objectives (Cocca & Alberti, 2010). This study presumed that the more aligned to organizational strategy the performance measurement system; the more effective it will be at enhancing firm sustainable performance. According to Cocca and Alberti (2010), alignment of performance measurement system, is evidenced when the system is derived from strategy; links operations to strategic goals; and is balanced/ multidimensional.

H_{03}: There is no significant relationship between strategic alignment of measurement system and performance of medium sized service firms in Kenya.

Table 2.5 outlines the dimensions for strategic measurement system proposed by Cocca and Alberti (2010). The dimensions include basis of the system, alignment of the system, multidimensionality of the system, and clarity of the system.

Table 2.5: ***Strategic Alignment of Performance Measurement System***

Dimension	Strategic Elements
Basis	Derived from organizational strategy
	Has top management support/commitment
Alignment	Link operations to strategy
	Connected with the main focus of long-term objectives
	Encourage employees to focus on important activities
Multidimensional	Provide integration
Clarity	Strategic objectives clearly identified

Source: Cocca & Alberti (2010)

2.3.4 Flexibility of Strategic Measurement System

There are several common connotations to the concept of flexibility. According to Sushil (2015), they include, "openness in thinking, adaptiveness to the environment, responsiveness to change, versatility of action, contingency, non-rigidity, variability of parameters and specifications, multiplicity of process setting, freedom, liberalization, informal attitude, adjustment, compromise, autonomy of function, agility in action, resilience in systems, elasticity, looseness, customized solutions, and broadening of mind' (p. 4). These varied terms are epitomized on the need for choice, speed, and change, which gives the system an opportunity to drive both proactive and reactive changes in the system itself as well as the organizational strategy. Thus, flexibility forms the basis for responding to potential internal/external changes in a timely manner (Garg & Kumar, 2013).

The need for flexibility in organizational systems has been emphasized in theory and practice. From a philosophical point of view, the two main ways of solving problems are either through isolation or through situational evaluation. Isolation approach involves development of a solution that suffices in all possible problem situations while situational philosophy believes in developing a unique approach for each problem situation with the belief that every problem situation is unique in its own right, and needs a unique solution (Sushil, 2015). The former approach is constrained in developing an ideal and unrealistic grand strategy that fit all situations, while the later approach demands for huge resources and time for developing solutions for all possible situations. These challenges have favoured the implementation of flexibility philosophy.

Sushil (2015) indicated that flexible philosophy does not advocate for the invention of a new approach for each problem situation, rather selection of an approach out of the existing well-researched ones, or a suitable combination of them to match the requirements of the problem situation. The belief here is that there are multiple ways of reaching to the same end and the suitability of the way or a combination of ways will depend upon the nature and attributes of the problem situation at hand (Sushil, 2015).

Sharma, Sushil and Jain (2010) considered flexibility as major survival and competitive strategy in the current dynamic business environment. Garg and Kumar (2013) support this by indicating that flexibility determines the level of competitiveness and provides an organization the ability to match actions to the changing requirements. Sushil (2015) elaborate by indicating that the growing need of flexibility in organization is linked to the need for reactive and proactive perspectives of management. That is, organizations are supposed to have reactive flexibility (adaptiveness and responsiveness) to cope with the changing and uncertain business environment as well as endeavour to intentionally create flexibility as a strategic change through leadership change, re-engineering, innovation in products and processes, use of information communication technology (ICT) and learning orientation.

However, flexibility if not well managed could lead to total confusion, lack of organizational focus and instability (Sushil, 2015). An organization should accommodate appropriate levels of flexibility and yet function in a coherent and cohesive manner. Therefore, the design and use of strategic measurement systems should be flexible enough to reflect the situational demands while at the same time have some level of stability to the ultimate organizational vision (Henri, 2004).

This study argued that the use of flexible strategic measurement systems enables an organization to acquire capabilities that influence desired outcome by improving control, communication and organizational learning (Yuliansyah & Khan, 2015). In this way, flexible strategic measurement systems enable an organization to achieve unique dynamic capabilities that help in effective detection of variations in performance and environmental changes for effective adaptation. Therefore, with unique dynamic capabilities, the organization will be in a position to make sound decisions that enhance competitiveness and firm sustainable performance.

In this study, the level of flexibility was measured by the level of adaptability, innovativeness, responsiveness and versatility. Firstly, adaptability defined the ability to re-align internal propositions due to change. That is, re-focusing the resources for the right

tasks in order to drive impact for the business. Secondly, responsiveness defined the ability to accommodate time pressure demands. That is, the ability to react quickly and positively especially to customer demands. Third, innovativeness defined the ability to come up with new methods for actualizing tasks where existing methods are not adequate. Finally, versatility defined the ability to be adapted to many different functions or activities.

H_{04}: There is no relationship between the flexibility of strategic measurement system and performance of medium sized service firms in Kenya.

Table 2.6*: Flexibility of Strategic Measurement System*

Dimension	Strategic Elements
Adaptability	System for continuously monitoring internal development and changes
	System for continuously monitoring external development and changes
Responsiveness	System for instituting changes in critical parts of the system (business units/processes/activities in response to changing circumstances
Innovativeness & versatility	System for reviewing objectives, targets, standards and strategic assumptions
	Systems for providing information of alternative resource use
	System for reviewing measures

Source: Garengo *et al*. (2005)

2.3.5 Measures of Performance

Firm performance defines the ability of an organization to utilize its resources to achieve organizational goals in an effective and efficient way (Sosiawani *et al*., 2015). Equally important has been the question of what should be used as an indicator of firm performance. Traditionally, firm performance measures have focused on financial measures. These measures are however, backward looking and measures past years' outputs. The general acceptance that financial performance measures alone are inadequate in expressing firm's ability to survive in today's dynamic, complex and hyper-competitive environment has driven research for understanding competitive advantages and sustainable competitive advantages. This has broadened the definition of firm performance to include future looking parameters such as customer loyalty, firm reputation, innovation and strategic assets (Hakkak & Ghodsi, 2015).

The concept of competitive advantages has attracted various definitions. From a firm's ability to implement a strategy which allows it to produce products that are not producible by its competitors (Porter, 1985), to a firm's ability to employ a strategy for creating an imperfectly competitive market (Barney, 1991), to a firm's ability to retain earnings higher than normal (Peteraf, 1993), to a firm's ability to gain higher economic profit than the average rate of profit in the same market (Besanko, Dranove, & Shanley, 2000), to a firm's ability to produce products that customers perceive to be more valuable than other competitors' products (Garth, Shepard, & Podolny, 2001), to whatever causes revenue increase over expenses (Rumelt, 2003). These definitions take into account firm's capabilities and the external situation. Therefore, to gain a competitive advantage an organization must pay attention to its external position as well as internal capabilities (Hakkak & Ghodsi, 2015).

The benefits of gained competitive advantage however would be very limited and short lived if the capability can easily be copied and reproduced by other competitors in the same market. This expanded the view of firm performance to include how to achieve and retain competitive advantages over longer periods. This brought the concept of sustainable competitive advantages (SCA) to the fore. SCA defines the firm's ability to create a continued flow of benefits through application of unique value creation strategies asynchronously with potential competitors not being able to copy such strategies (Hakkak & Ghodsi, 2015). Therefore, to achieve SCA, an organization must acquire and control valuable, rare, inimitable and non-substitutable resources and capabilities and have the organization in place that can absorb and apply them (Kraaijenbrink, *et al.*, 2010). These heterogeneous resources and capabilities are both tangible and intangible. According to Hakkak and Ghodsi (2015) creation of SCA, require focus on firm's relational structure, reputation, innovation, and strategic assets.

In line with the concept of SCA, a common message in strategic and operational management field is that performance measurement should be less functionally focused and more focused on the management of value creation processes to achieve SCAs

(Rothaermel, 2015). According to Bititci, Mccallum, Bourne, Macbryde and Turner (2002), the common performance measurement frameworks, such as Balanced Scorecard, Results/Determinants Matrix, Performance Prism, Integrated Performance Measurement System, Strategic Measurement Analysis & Reporting Technique Pyramid, and Integrated Dynamic Performance Measurement System are designed to facilitate the development and deployment of appropriate performance measures through the operations of the organisation.

However, although, the operationalization of processes is critical in value creation, it is the capability and competence in management of these value creation processes that determine how well that value is sustained. Hence, SCA can only be achieved by recognising and responding to changes in firm's internal and external environment either through maintaining and developing a winning formula or through identifying and changing to a winning formula (Bititci, *et al*., 2002). The role of PMS in providing information that guides the development of SCA cannot be over emphasized (Chytas, Glykas, & Valiris, 2011). However, with financial measures being considered a one-dimensional and retrospective as they represent the past history of a company (Hakkak & Ghodsi, 2015), non-financial issues must be taken into account in addition to present a holistic performance of the firm.

This thesis adopted the use of results/determinants framework to capture both non-financial and financial measures. The model was particularly important in capturing leading and lagging performance measures and indicators, which would objectively assess the capability of the management of the value creation processes to sustain competitive advantage (Bititci, *et al*., 2002). Both these dimensions are highly suitable for service performance measurement (Sorooshian, Aziz, Ahmad, Jubidin, & Mustapha, 2016). The framework thus creates a link between present business performances as reflected by results with the business performance of the past as measured by the specific determinants. This helps in identifying the performance drivers of future desired future success (Khan & Shah, 2011). This model was chosen to highlight the mediating

precursors of strategic performance. The assumption being that end results is an accumulation of outcomes at the mediating level.

Fitzgerald *et al*. (1991) specifically developed the determinant/results performance matrix for the service sector. The model is structured around six dimensions classified into two categories of determinants and the results. The determinants category (leading indicators) covers performance measures for service quality, flexibility, resource utilization, and innovation while results category (lagging indicators) covers financial and competitiveness related performance measures. The main strength of the results and determinants matrix is that it specifies, in reasonable detail, what the measures should look like and provides a useful development process (Hudson, *et al*., 2001).

Even though, the original model has been criticized to present a less balanced view of performance since it does not include customers or human resources as dimensions of performance (Hudson, *et al*., 2001), the study included measures, which are directly attributable to customer and employee satisfaction in the measurement scales to address these shortcomings. For instance, customer loyalty was measured to determine the level of customer satisfaction while employee efficiency, quality of work life, and employee involvement were measured to determine the level of employee capacity, motivation and satisfaction.

Since the core competency in achieving SCA is the firm's agility i.e. the ability to detect the need for change as early as possible and change as quickly, as efficiently and as effectively as possible in an uncertain environment (Bititci, *et al*., 2002), measures of flexibility, employee efficiency, innovations and customer loyalty were important in painting a futuristic and long term view of the organization. The study measured customer value/determinant of performance as a composite of service quality, service flexibility, resource utilization, and service innovation. Customer value represented the mediating variable. Overall, firm performance (defined as sustainable competitive advantages) was measured as a composite of competitiveness (customer loyalty, customer satisfaction, sales growth) and profitability (net profit).

H_{05}: Customer value has no mediating effect on the relationship between strategic measurement system and performance of medium sized service firms in Kenya.

Table 2.7*: The Results and Determinants Framework*

Dimension of Performance	Types of Measures
Results Lagging Indicators	
Competitiveness	Relative market share and position
	Sales growth
	Measure of the customer base (Satisfaction & Loyalty)
Financial performance	Profitability
	Liquidity
	Capital structure
	Market ratios
Determinants Leading Indicators	
Quality of service	Reliability responsiveness
	Aesthetics/appearance
	Cleanliness
	Comfort friendliness
	Communication
	Courtesy
	Competence
	Access
	Availability
	Security
Flexibility	Volume flexibility
	Delivery speed flexibility
	Specification flexibility
Resource utilization	Productivity
	Efficiency
Innovation	Performance of the innovation process
	Performance of the individual innovations

Source: Fitzgerald *et al*. (1991)

2.3.6 Moderating Effect of Organizational Context

Franco-Santos and Bourne (2005) divided the factors that influence the impact of strategic measurement systems on firm performance as either process or contextual. The effects of process factors, which include the design factors, implementation factors and the effective use factors, are moderated by the contextual factors such as firm strategic focus, culture, organizational structure, size, industry characteristics, and other situational environmental factors.

The current study explored the moderating effect of firm size and structure on the relationship between the use of strategic measurement systems and performance. Several

studies have drawn from contingency theory to suggest that firm size and structure affect how firms design and use performance measurement systems. Firm size has been identified as the single most influencer of strategic measurement systems. There is vast literature suggesting measurement systems developed within and for large firms do not necessarily comply with the needs and context of their smaller counterparts (Mashingaidze, Phiri, & Bomani, 2021).

In fact, this has led to development of alternative strategic measurement systems geared towards addressing the peculiarities of SMEs (Ahmed, 2017; Chalmeta, Palomero, & Matilla, 2012; Khan & Shah, 2011; Sorooshian, Aziz, Ahmad, Jubidin, & Mustapha, 2016; Waśniewski, 2017). Nonetheless, the alternative measurement systems such as organizational performance measurement, integrated performance measurement systems for small firms, performance measurement IRIS, and The Circular Methodology approaches do not create a distinction between micro, small and medium sized enterprises. Contextualization of medium sized enterprises is totally different from micro and small firms. Thus, the need to understand how this size difference would affect the effectiveness of the performance measurement system in the proposed models.

The study also sought to establish the most prevalent organizational structure in the medium sized service firms in Kenya. To determine this, four indicators were evaluated. These are method of organizing tasks; number of management levels; communication channels; and employee inclusion in decision-making. For the first dimension, use of functional and divisional work arrangement are characterized by clearly specified job descriptions, inflexible boundaries between jobs and units, centralized decision making and higher number of management levels depicting a vertical organizational structure (Rishipal, 2014). However, matrix, specialized and changing structures promote flexibility between jobs and units, changing job descriptions, decentralized decision making and fewer number of management levels depicting horizontal structure (Rishipal, 2014).

The second dimension of firm structure was the number of management levels. According to Yildizel (2017), comparatively vertically structured firms have more management layers than horizontally structured firms. Further, Rishipal (2014) noteed that horizontally structured organizations have relatively fewer layers or just one layer of management. The third dimension of organizational structure was the channels of communication within the organization. Use of formal communication systems characterizes vertically structured organizations (Marija *et al*., 2014). The last dimension of organizational structure was the level of employee inclusion in decision-making (employee empowerment) where low inclusion signified vertical structure. Cumulative score of these measures were used to define the overall orientation of the firm.

$H_{06(a)}$ Organizational context has no moderating effect on the relationship between customer value and performance of medium sized service firms in Kenya.

$H_{06(b)}$ Organizational context has no moderating effect on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya.

$H_{06(c)}$ Organizational context does not have a moderating effect on the mediated relationship between strategic measurement system and performance of medium sized service firms in Kenya.

2.4 Empirical Literature Review

This section reviews empirical literature in line with the study objectives. It discusses previous empirical findings to highlight research contributions and knowledge gaps for further investigations.

2.4.1 Breadth of Strategic Measurement System and Firm Performance

It has been argued that broader measurement systems covering all key activities within the organization and provides a much better view of an organization with the potential of influencing performance (Garengo *et al*., 2005). Further, the breadth of strategic measurement system should be multidimensional considering both financial and non-financial measures, leading and lagging measures as well as strategic and functional

measures. Despite this, empirical evidence showing use of narrow measurement systems by SMEs is very much common in strategic management literature. A study by Sousa *et al*. (2006) based on SMEs in England, established that despite SMEs recognizing the importance of performance measurement system, adoption of strategic performance measurement systems is very low and limited to very few functionally oriented measures.

Using the BSC model, Sousa *et al*. (2006), indicated that financial measures were the most widely used measures, followed by internal business process perspective measures, customer perspective measures while innovation and learning measures were rated less important and were less used by SMEs. This narrowed the breadth of performance measurement systems used by the SMEs. On specific type of measures, Sousa *et al*. (2006), revealed that manufacturing quality was the most important performance measure adopted by the SMEs followed by price, product reliability, wider product range, ability to manufacture customer specialities, on-time delivery, and delivery lead-time. The study suggested that SMEs should use more productivity, employee training and customer requirement measures to enhance the level of use of innovation and learning measures to create balance in the measurement system. Interestingly, the study findings suggested that there are no significant differences in the use of performance measures between manufacturing industry and service enterprises. The major limitation of the study was its very low response rate; thus, generalization of these findings can only be done with caution.

In an attempt to develop a framework for information systems' performance measurement among SMEs in India, a study by Kumar and Bhagwat (2006) examined how Indian SMEs measure performance in the implementation of information systems in normal routine business operations. The study showed a positive relationship between performance measurement and operational efficiency of the information system function, down time of information system, responsiveness of information system, timeliness of information, accuracy of information and overall competitive position of the firm. The study revealed limited use of strategic measures. The study however suggested that information system

performance measurement framework can be the foundation for SMEs' strategic growth in the era of globalization.

In Italy, Garengo and Bernardi (2007b) sought to establish the role of performance measurement systems in supporting company development. The study was based on manufacturing SMEs in Veneto region. Even though the study showed limited adoption of broad-based performance measures by SMEs, the study also showed that implementation and use of performance measurement systems could offer a key support for the improvement of organizational capability in SMEs by offering tools to support the decision-making process by gathering, elaborating and analysing information. In this way, performance measures act as triggers to radical change in organizational capabilities and favour qualitative growth.

Hinton and Barnes (2009) sought to identify features of an effective performance measurement for SMEs e-businesses in United Kingdom. The study showed that SMEs primarily use a mix of measures with their performance metrics focusing on financial measures such as sales values and volumes. The other process metrics include measures such as speed, cost and quality. Customer metrics included customer conversion rate, retention and satisfaction. The study was of the view that no single effective e-business performance measurement system does exist. Therefore, organizations based on their context can continue through their evolving practices to discover the steps that may constitute an approach to developing more effective e-business performance measurement systems.

Saunila *et al*. (2014) conducted a web-based survey in Finish firms to establish whether performance measurement moderates the relationship between innovation capability and firm performance. The study showed that measurement partly moderates the relationship. Firms that measure the determinants of innovation capability, especially through active exploitation of external knowledge, are more likely to engage in a higher level of innovation capability, which in turn has a positive impact on their performance. This

placed measure of determinants of innovation capability as a critical element to be included in performance measurement systems to develop future strategic outcomes.

Rasit and Isa (2014) investigated the influence of comprehensive performance measurement system towards manager's role ambiguity. The study hypothesised that more comprehensive PMS provide formal goals which are set in advance and in a written format, which help in reducing role ambiguity, consequently leading to enhanced job and firm sustainable performance. The study established a negative relationship between comprehensive performance measurement system and role ambiguity. Implying that comprehensive performance measures may reduce role ambiguity of managers as its informational effect may provide positive effects on managerial behaviour and performance. Similar to other researches, the study had a few limitations. The study was cross-sectional and could only enable examination of relationships only at a particular point in time without the possibility of assessing causality or development of the relationship. Further the study had a low response rate (20%) and was limited to single firm type (manufacturing sector) in Malaysia. Moreover, the study focused on large firms with more than 150 employees. Its genrally recognized that comparatively larger companies are more likely to use a contemporary PMS, since larger companies have more resources to respond to the need for a deeper and more sophisticated pool of knowledge and expertise to implement the more innovative 'contemporary' performance measurement systems.

A study by Silvi, Bartolini, Raffoni and Visani (2015) explored the practices of strategic performance measurement systems among the Italian medium sized firms by focusing on models, drivers and information effectiveness. The study found out that 88% of the sampled companies, financial indicators are included in their reporting but very few include other dimensions especially the external dimensions and forward-looking indicators such as innovation and human resources management. Despite the study focusing on medium sized enterprises, its scope was limited to Italian firms.

Contradicting results on the impact of performance measurement systems on firm performance include a study by Hvidman and Andersen (2013) which while comparing performance management between private and public schools in Denmark found out that the impact of performance measurement systems is contingent on the sector and scope of the system. The study showed that performance measurement systems constituted effective means of improving performance in private schools without having negative effects on equity unlike in the public schools where performance measurement systems did not improve performance. The difference was attributed to variability in the scope of the systems where less developed (narrow) systems fail to cover all aspects of the organization to stimulate strategic outcomes.

Further, due to performance measurement system scope limitations, a study by Heinrich (2011) evaluated performance standards of employment and training programs in the US and concluded that the performance measurement systems are weakly related to the true long-run impacts of the programs. Moreover, a study by Gerrish, (2014b) evaluating child support programmes in the USA provided additional evidence that measuring (and rewarding) performance may not improve performance when the scope of the performance measurement system was too narrow and focused on mainly on operational achievements.

Studies carried out in Kenya also extend the argument that the impacts of performance measurement systems are influenced by the scope of the system. A study by Fwaya *et al*. (2010) exploring performance measurement systems in the hotel industry in Kenya showed that the relationships between performance measurement system's dimensions are complex and vary over time according to the system's scope, type of hotel, stakeholders and strategies which should be aligned to the capabilities and processes, which in turn determine the results.

A study by Kihara (2013) sought to establish whether strategic performance measurement influences the overall performance of operations at Kenya Rural Roads Authority. The study established that the use of strategic performance measurement systems is not

guaranteed and is influenced by its scope, availability of finance, commitment of top management, employee capacity and technology. The study indicated that a sound strategic performance measurement system, which fits well into the operational system of the organizational activities, is a key factor in the success of strategic performance measurement system. Similarly, a study by Chimwani *et al*. (2013) using balanced scorecard model explored the application of strategic performance measurement systems in small and medium-sized manufacturing enterprises in Kenya. The study established limited use of strategic measures among the Kenyan manufacturing SMEs with preference of short-term financial measures. The study was however, delimited only to the manufacturing sector.

2.4.2 Depth of Strategic Measurement System and Firm Performance

A study by Hudson, *et al*. (2001) evaluated the appropriateness of performance measurement system development processes for SMEs. The study identified limited focus on detail by SMEs and concluded that sound performance measurement systems must provide reasonable detail, which shows how measures should look like and provide a useful development process. Further, despite managers being fully aware of the importance of detail on effectiveness of performance measurement systems, none of the organizations had initiated redesigning of the systems probably due to limited resources and the more dynamic and emergent strategy styles found in SMEs. However, the study had some major concerns in that it utilized a case study approach that focused on qualitative data and was based on a very small sample size of eight SMEs.

Similarly, while acknowledging rarity of the use of performance measurement systems at appropriate level of detail, a study by Bourne, Kennerley and Franco-Santos (2005) conducted a case study on a UK based company providing repair services to examine the use of performance measures and how performance measurement systems affect performance. The study showed that the manner in which data is acquired, analysed, interpreted, communicated and acted upon has an impact on business unit performance. The study further showed that application of most performance measurement systems is

often simplistic and the intensity of engagement and interaction is inadequate. However, being insightful, the study was based on a case study of one organization with different business units. This raise concerns on implications for wider validity.

Another study by Rompho and Boon-itt (2012) based in Thailand sought to identify what managers involve in the design of a performance measurement systems. The findings suggest that success of performance measurement systems lies in the adequacy of it detail completeness, validity, and accountability. The study recommends not too few or too many measures. Even though the study was comprehensive by including all major sectors of the economy, the firm size was not defined. Konjer (2015) examined alignment between strategy and performance and concluded that balanced score card should be updated to follow the strategy without giving too much operational detail. Based on 7 cases, the study revealed that performance measurement systems mostly lack crucial detailed information to help enhance performance.

Kaminskaite (2017) examined the factors that influence performance of SMEs. The study identified use of inaccurate metrics, particularly measures whose application lack detail. The study was based on qualitative research method using a case study of one start-up company in Helsinki. This limits the extent to which the findings can be generalized. As similar study by Wasneiewski (2017) investigated properties (characteristics) of performance measurement system suitable for small and medium enterprises. The study concludes that small and medium establishments should not use deep performance measures, because they focus on just a few aims and prolong the implementation of the system.

2.4.3 Alignment of Strategic Measurement System and Firm Performance

Several features of effective strategic measurement systems have been suggested in literature with strategic alignment being very prominent. Wu (2009) observes that effective performance measurement system should help the companies to formulate right strategies that can especially manage the uncertainty of the external environment in their development. Hence, such performance measures should be constructed in a manner,

which aligns the systems with the SMEs' daily processes such as ordinary planning, budgeting and reporting processes. Further, Cocca and Alberti (2010) opine that good performance measurement system is derived from strategy; link operations to strategic goals and promote integration.

According to Taticchi, Cagnazzo and Botarelli (2008), a performance measurement system must be designed and implemented in accordance with a company's business strategy in order to link the strategy to the objectives of functions, groups of people, and individuals, as well as to operational aspects. Similarly, a study by Hudson, *et al*. (2001) to develop a strategic measurement system for SMEs recommended that the systems must be derived from strategy, have clearly defined and explicit purpose, relevant as well as link operations to strategic goals, and stimulate continuous improvement.

Empirically, a study by Fauske, Busi and Alfnes (2008) sought to identify the actual state of performance management systems in SMEs. The study revealed lack of knowledge to performance measurement concepts, theories and tools resulting into imperfect strategic measurement systems, which are unbalanced, static, not aligned to strategy, sub-optimal or in some cases no system at all. The study indicated that in cases where the company had a system, the use of the system were often limited to control and not used in day to day management and lacked collaborative design. This was aggravated by lack of a technological infrastructure for automatic data collection and visual presentation of the results of performance measurement system use in SMEs. The study was an indepth inverview and observation of five manufacturing SMEs employing less than 250 people.

A study by Cocca and Alberti (2010) investigated performance measures' maturity level and driving forces among Italian manufacturing SMEs revealed lack of strategic alignment of systems since most SMEs suffer from financially based systems and from the lack of adequate IT infrastructure (66%), as well as lack of effective information management processes (66%). The study was however too specific to Italian manufacturing SMEs. Ahmed and Sun (2012) examined the state of strategic alignment

of PMS by SMEs in Sweden. The study which was based on a case study of three firms found out that despite the firms having limited and basic key performance indicators (KPI), one third of the firms had developed clear and appropriate performance measurement systems that lead to achievements of strategic goals. The study argues that strategic alignment of PMS ensures development of clear strategies that are translateable into accurate key performance indicators (KPI) for their effective implementation at operational level. However, lack of strategic alignment leads to deviated KPIs and their poor level of implementation.

Another expressive single case study by Carlyle (2013) in New Zealand identified presence of vision without strategic measurement systems to monitor that vision. The study also showed that business plans contained a small list of static high-level measures that are mostly financial. The study recommends all possible performance measures for each strategy to be articulated in each business plan and activities to improve strategic alignment, as the measures would go beyond the strategic level to operational levels. Langwerden (2015) examined performance measurement system development among Polish SMEs. The study observed that SME's approach to strategic measurement systems is informal, not planned, not based on a predefined model and is often of poor alignment to strategy and measures. The study further observed high amount of tacit knowledge and little attention to process formalization. Further, since knowledge is mainly tacit and context-specific, the information required to implement and use a strategic measurement system is difficult to gather (Langwerden, 2015). Despite this, the data collection method was limited to observations, discussions and interviews, which were largely subjective.

A study by Alexandra (2015) acknowldges the significance of aligning all performance indicators to organizational strategies and recommends that any target must be connected to the chosen strategy. However, poor alignment in most traditional strategic measurement system models has been the main obstacle to successfully implement a performance management espacially in SME where strategic components of performance are mostly missing. A study by Akpabot and Khan (2015) recommends that a strategic

measurement system as a whole should be strategically aligned. The study observed that the implementation of strategically aligned and efficiently managed strategic measurement system does significantly enhance organisational performance, and helps to align organisation strategy in accordance with the business mission and vision.

In a quest to highlight status of performance measurement system's in Finish Service SMEs, a study by Virtanen (2017) established that performance measurement systems are rarely aligned with strategy because there is no strategy, even though the value of strategic planning is recognized. The study was however delimited to descriptive analysis of one small Finish company employing only 10 people. Felizardo, Félix and Thomaz (2017) conducted a diagnostic study in twelve SMEs with industrial activity in Portugal on what is to be measured and how to measure it. The study revealed lack of explicit strategies and methodologies to support the control process leading to a reactive approach. According to Felizardo *et al*. (2017), this was extremely problematic because the development of a strategic measurement is necessarily long-term and explicitly requires that the resulting measures should be strategically focused. The major shortcoming of the study was its low response rate, which limited information gathered, range and depth of the theme exploration and precludes the generalization of the findings.

2.4.4 Flexibility of Strategic Measurement System and Firm Performance

Most scholars generally agree that for continous improvement to be achieved, measurement systems should be able to incorporate any changes to either the internal or external environment with inflexibility being considered to deter improvement to the system (Masri, 2013). In a study to investigate performance measurement systems in Small and Medium Enterprises in the Information & Communication Technology Industries in Australia and South China, Wu (2009) found out that most of the SMEs employed KPIs and bench-marking systems as their main performance measurement tools since they were the most flexible approaches intandem with the SMEs changing environment. The study concludes that performance measurement systems should involve

a flexible frameworks that can be adapted dynamically to suit the changes in the processes and environment.

A similar study by Jamil & Mohamed (2011) indicate that even though the ability for keeping the performance measurement systems continuously updated is a challenge for every firm, but particularly for SMEs which need to be extremely flexible and reactive to market changes while being characterized by a lack of resources and managerial expertise, the significance of flexibility on performance can not be underestimated. A study by Raymond, Marchand, St-Pierre and Cadieux (2012) to invetigate re-conceptualization of small business performance from the owner to manager perspective observed permeability of small businesses owners to their environment, hence the need for strategic flexibility when the issue of measuring the small firm's performance is raised.

A study by Masri (2013) investigated performance measurement systems of SMEs in the service sector operating in Brunei. Based on results from 4 case studies, the study showed that performance measurement systems from 75% of the cases did not seem to be flexible enough to take into account any changes in the environment. Worth noting was that for 50% of the firms, any changes in their top KPI need prior approval from the board of management, while at the departmental level performance indicators were easy to change as the mangers were the creators of the unofficial, operational measures. This showed that the lower level of indicators where more flexible than the corporate level indicators. However, having unofficial metrics posses a major risk of misalignment in the organization. Only one company (25%) which indicated that lower level managers are able to initiate changes by directly informing the top management. This quite allows flexibility while maintaining strategic alignment of the corporate.

A study by Virtanen (2017) revealed that performance measurement systems used by SMEs are often static rather than dynamic models and fails to recognize changes in internal and external environments. The study recommends that performance measurement systems for SMEs should provide accurate and timely information about organizational environment and should be flexible and rapidly changeable to address

dynamism in the SMEs environment. Conclusions by Wasneiewski (2017) indicate that performance measurement systems for SMEs should be dynamic and flexible so as to be able to respond to the needs of these companies, but at the same time they must be structured to some degree, which promotes active planning. This is to guard against excessive fluidity in the system which woudld actually erode the essence of strategic management.

2.4.5 Organizational Context and Firm Performance

A study by Hoque and James (2000) based on a survey of 66 Australian manufacturing companies' reports a positive relationship between firm size and use of performance measurement systems. The study explains that large firms are likely to make use of performance measurement systems since as firm size increases, the firm finds it more practical and useful to place greater emphasis on the performance measurement systems that supports their strategic decision making. Further, Hoque and James (2000) indicated that firms with higher proportion of new products have a greater tendency to make use of measures related to new products. The study was however, confined to manufacturing firms, used measures with no clear link to strategic focus, and had a small sample size.

Similarly, a UK based case study in multiple business units of the same organization by Bourne *et al*. (2005) reports that performance measurement is easier in larger organizations and more problematic in smaller firms due to difference in human, systemic, as well as financial capabilities. Comparatively, large firms are more likely to have the necessary capability for designing and implementing of the performance measurement systems (Bourne *et al*., 2005). Generalization of these findings would only be done with caution as the results were based a single company case study with data collected in different branches. This single organization approach raises concerns of wider validity of the findings. Further, in most branches the systems were similar providing repetitive data.

Tapinos, Dyson, and Meadows (2005) conducted an online survey to investigate the impact of performance measurement in strategic planning process among Warwick Business School alumni. The study used strategic development process model to compare

SMEs and large organizations and to compare organizations operating in slowly and rapidly changing environments. The study identified performance measurement as one of the main factors characterizing strategic planning. It showed that performance measurement has a significant influence in supporting the achievement of an organization's goals and the effectiveness and efficiency of its strategic planning process. However, its impact was not significant in the adoption of successful strategies or making strategic planning a successful process. The study by Tapinos *et al*. (2005) further established that organizational size and rate of change in the sector creates variation on the impact of performance measurement. The study observed that large organizations and organizations operating in rapidly changing environments predominately adopt the use of performance measurement. However, the study was concentrated in United Kingdom and had very low response rate with large firms dominating. Further, the study was based on subjective data.

A study by Cocca and Alberti (2010) investigated contextual factors influencing strategic measurement system's adoption by Italian manufacturing SMEs. The study which was based on 87 manufacturing Italian SMEs considered regular measurement of at least one financial and one non-financial indicator to show adoption of strategic measurement system. The study revealed that when the owner manages the company and the number of managers is very limited, a strategic measurement system is rarely used, probably because there is less need to share information and the decision making process is based on entrepreneur's knowledge and experience (Cocca & Alberti, 2010). Further, the study revealed that larger companies and companies having advanced information management practice, operating in wider markets, usually at an international level and are having quality-oriented organizational cultures, which are more likely to implement strategic measurement systems. The study concludes that adequate management information systems provide structured and reliable data to evaluate the different metrics while quality-oriented organizational culture, usually demands for certification process and this is likely to lead to the implementation of strategic measurement systems (Cocca & Alberti, 2010). Although the study provided very compeling evidence, global generalization of

the findings can only be done with caution since the study was based on Italian manufacturing SMEs and used a small sample size of 87 firms and simple categorical scale for data analysis. Further, the study did not show interactions or interdependencies between the single contingency factors.

Further, a study by Ahmada and Zabria (2016) based on a sample of 118 Malaysian manufacturing firms reports that firm size which is measured by annual sales turnover and number of employees are the most likely to increase the extent of use of performance measurement systems. The study also demonstrated that there is high extent use of non-financial performance measures related to internal efficiency, product development and growth and corporate social responsibility. Further, the findings indicated that the use of non-financial performance measures has a positive effect on firm performance within the manufacturing sector. The study, which was based on Malaysian manufacturing firms, was too general in that it included all types of firms from micro, small, medium to large.

The other internal contextual factor that has been shown to influence the implementation of performance measurement systems is the organizational structure. Yang (2012) writes that organizational structure has significant impact on the extent and types of financial or non-financial performance measures to be included in a performance measurement system. For instance, decentralized structures require detailed performance measurement system that measures diversified decision-making requirements in the various organizational dimensions.

Similarly, a study by Lee and Yang (2011) investigated the effect of organizational structure and competition on designing of PMS and their joint effects on performance. Data was collected from 168 Taiwanese firms listed on the Taiwan Stock Exchange. The study found a significant association between organizational structure and design of PMS. The study indicated that compared to mechanistic organizations (centralized), organic (decentralized) organizations make greater use of integrated measures and higher developmental stages of performance measurement systems. However, use of integrated measures is more relevant with respect to organizational performance in mechanistic

organizations than in organic ones (Lee & Yang, 2011). The study however was focused on large firms. Furthermore, the Taiwanese context may not be applicable to Kenyan firms in the service sector.

A study by Bäuml (2014) based on 90 Swiss and Singaporean SMEs asserts that flexible organizational structures promote tactical and context-specific knowledge, which promotes adaptability of strategic measurement systems. However, highly formal structures may impede this flexibility and reduce performance measurement system's agility and performance. Despite providing useful information on the effect of firm structure, the study was limited in that it was based on Swiss and Singaporean manufacturing SMEs. This erodes potential for generalization of the findings across industries with different management practices. Further, a small sample size of 90 puts a caveat to the findings. Moreover, firm performance was based on perceptions of key informants rather than objective estimates of performance.

2.4.6 Customer Value and Firm Performance

Customer value seen as the evaluation done by customers to assess the usefulness gained from products or services for the necessary cost, has been considered a key success factor because many companies can increase their sales with focus on customer value and price (Prastiwi, Ridwan, Halik, & Kartika, 2018). Therefore the mediating role of customer value on performance has attracted quite some attention in literature. Utama, Kosasih and Trisnawati (2021) opined that customer value plays an important role in winning business competition by being a leading factor in enhanacing both finanacial and non-finanacial performance.

An empirical study by Iskandar, Wibowo and Subagja (2017) investigated customer value as a precursor of customer satisfaction among users of motorcycle taxi, 110 GO-JEK in Jakarta Malaysia. The study concluded that the better the customer value and service quality, the better the customer satisfaction achieved. However, the study was domiciled in Jakarta and in the motorcycle taxi sector. Further, the study employed accidental sampling, which eliminates the benefits of random sampling. Nonetheless, finding is

consistent with previous theoretical views about the factors that affect customer satisfaction, where variable customer value and service quality significantly influence customer satisfaction.

Bakare and Fetuga (2017) investigated how customer satisfaction an indicator of customer value affect business performance in Nigeria. The study revealed a positive relationship between customer satisfaction and customers retention and profitability. Nonetheless, the study used a non-validated self-constructed questionnaire on mobile telecoms industry in Nigeria. Further, the study only focused on customer retention and profitability as measures of business performance. This narrowed the scope of the definition of performance and limits use of sustainable performance indicators.

Zulfikar (2018) explored the impact of market orientation to marketing performance through customer value creation in small and medium enterprises (SMEs) of knitting industry in Bandung, West Java. The study established that market orientation has no direct impact on marketing performance but has a positive and significant indirect impact to marketing performance with value creation as intervening variable in small and medium enterprises (SMEs) of Binong Jati in Bandung. This means that customer value is a crucial mediator to enhanced organizational performance. The study was too specific in its context to be generalized.

Prastiwi, et al. (2018) conducted a survey among 100 owners of small and medium enterprises in Surabaya city to assess extrinsic and intrinsic cues customer value such as visual appeal, excellence, efficiency, and price satisfaction on SMEs performance. The research results showed that excellence, and price satisfaction significantly influence customer value, while visual appeal and efficiency do not significantly influence customer value. Even though the study was instrumental in showing how the effect of these cues are mediated through customer value creation and the influence business overall performance, the survey was carried using a small sample size (100) and focused only on firms aged between 20 and 40 years. This left out majority of SMEs in their formative stages.

Lestari and Ardianti (2019) investigated the role of customer value in the relationship between innovation and firm performance on Small and Medium-sized Enterprises (SMEs) food industry companies in Malang City, Indonesia. The study established that customer value partially mediates the relationship between innovation and firm performance. Moreover, the findings provide evidence that SMEs can achieve competitive advantage through improved innovation encouraged customer value. Further, Methammem (2020) examined the mediating role of customer value on the relationship between customer knowledge management and performance in the Tunisian hotel industry. The study used a questionnaire survey and established that good knowledge management is related to perceptions of value, which in turn significantly enhances both financial and non-financial performance.

Zakari and Ibrahim (2021) viewing customer satisfaction as an indicator of customer value, explored the impact of customer satisfaction on business performance of small and medium sized enterprises in Nigeria. The study concludes that customer satisfaction has a positive relationship with business performance among SMEs in Nigeria. The study showed that customer satisfaction positively correlates with profitability of the firms. Majority of these studies despite being insightful were conducted in regions outside Kenya. They also did not take into account the unique characteristics of the service sector industry. Moreover, conclusions based under broad category of small and medium enterprises is too general to specifically apply to medium sized enterprises.

2.4.7 Measures of Firm Performance in Small and Medium Enterprises

Literature shows that small and medium enterprises use a blend of short term and long-term measures, financial and non-financial measures as well as internal and external measures. However, empirical evidence shows variability on the level of emphasis laid on various performance measures. In one such study in Asia, Ahmad (2014) investigated the adoption of management accounting practices in Malaysian small and medium sized enterprises in the manufacturing sector. On a scale of 1 to 5, the study showed that the SMEs use both financial and non-financial measures with more emphasis on financial

measures. The study identified sales growth as most used financial measure followed by operating income, cash flow, profitability and return on investment. The most used non-financial measure was on time delivery followed by customer complaints, lead-time, defect rate, employee turnover, customer satisfaction, employee absenteeism and guarantee claim. Despite this, the study recorded a very low response rate (16.1%). Mugenda and Mugenda (2003) recommends that at least 50% response rate for the findings to be generalised. The study was also limited to the manufacturing firms in Malaysia.

In another study, Maduekwe and Kamala (2016) investigated performance measurement among 92 small and medium enterprises in Cape Metropolis, South Africa and established that 82.6% of the respondents indicated that their businesses prepare performance measurement reports. However, financial performance measures were more frequently used than non-financial performance measures. Maduekwe and Kamala (2016) indicated that sales growth (85.1%) was the most frequently used financial measure of performance, followed by cash flows (85.1%), operating income (79.7%), net profit margin (79.7%) and return on investment (52.7%) while the response time to customers (71.1%) was the most frequently used non-financial measure followed by customers' satisfaction (69.7%), percentage of repeat customers (67.1%), customers' complaints (59.2%), employees' turnover ratio (57.9%), staff competency rate (51.3%) and average hours of employees' training (51.3%). Although insigtful, the study adopted non probablistic sampling technique (convenient sampling method/ accidental-sampling technique) since there was no comprehensive sampling frame. Further, the findings were based on basic counts with no inferential statistics. Therefore, the findings cannot be readily generalized.

In Kenya, a study by Wadongo, Odhuno, Kambona and Othuon (2010) sought to identify key performance indicators in the Kenyan hospitality industry. The study which was based on 6 five-star hotels based in Mombasa Kenya gathered data using a survey tool form a sample of 160 hospitality managers. The study showed that hospitality managers in Kenya were focusing on financial and result measures of performance while ignoring

non-financial and determinant measures. The hotel managers highly monitored financial performance using measures such as total revenue, food and beverage sales, and total operating cost. The customer perspective of performance was moderately measured through customer satisfaction surveys, customer profitability, and market share. However, little attention was being paid to the measurement of internal business processes such as resource utilization and supplier performance. Similarly, innovation and learning perspectives were disregarded (Maduekwe & Kamala, 2016). Although enlightening, the study acknowledged violating assumptions of homogeneity of variances, which reduced the validity of the factorial univariate analysis of variance results exhibited. Since, several managers were interviewed from the same firms; there was high risk of redundant results. Further, the study was limited to only 6 five-star hotels in Mombasa, Kenya. Hence, its findings may not be generalized to the hotels or the entire service sub sector in Kenya.

In yet another Kenyan study, Chimwani *et al*. (2013) investigated the application of strategic performance measures in small and medium sized manufacturing enterprises using the BSC. The study established that the method of measuring performance in SMEs was focused on financial metrics. The most common financial measures included changes in sales (93%), cash flows (90%), sales figures (88%), measure of unit of production (88%), cost of production (88%), and cost versus budget (85%). Internal business process measures included relevant product attribute (92%), incoming material quality (88%), continous process improvement (88%) and measures of clear business strategy (84%). On the customer perspectives, 67% carried out customer surveys regularly and 59% routinely or regularly measured customer service. On innovation and learning, 67% regularly carried out employee satisfaction surveys and 75% indicated that performance measures provided adequate information for improvement in programmes. However, only 48% provided training to employees measures on product quality. The study was however focused on manufacturing sector and its findings may not be applicable to the general SME sector including the service sub sector.

Given the inadequacy and inconsistence on what constitutes performance indicators, it was imperative that the strategic measurement in medium sized service firms in Kenya be investigated. The study adopted results/determinants framework to measure firm performance. The study measured service quality (as reliability, responsiveness and availability), service flexibility, resource utilization (as efficiency) and service innovation (as performance of innovations and innovation processes) as the determinants of performance. The lagging indicators (or sustainable competitive advantage) included competitive parameters (customer loyalty, sales growth) and profitability measures. Appendix D illustrates summary of the empirical literature review. The summary presents the authors and date of publication, study topic, study findings, and research gap, which require further studies.

2.5 Critique of the Existing Literature Relevant to the Study

The reviewed literature showed a number of grey areas on the subject of strategic measurement systems. There lacks consensus on the effects of strategic measurement systems on firm performance. On one side, there are findings, which show a positive relationship between the implementation of performance measurement systems and strategic outcomes (Bititci & Garengo, 2007; Cocca & Alberti, 2010; Salaheldin, 2009; St-Pierre & Delisle, 2006). However, the other stream of findings show that this may be misguided and use of performance measurement systems do not always show significant positive effect on firm strategic outcomes (Gerrish, 2014a, 2014b; Heinrich, 2011; Hvidman & Andersen, 2013).

Secondly, there is major concern in literature about performance measurement system's use by medium sized establishments. There is lack of clarity on what exactly constitutes a medium sized establishment across regions. Further, conclusions about use of performance measurement systems by medium sized establishments has mostly been generalized on a wide range of scope including micro, small, medium and sometimes even large enterprises. A study by Gimbert, Bisbe, and Mendoza (2010) on the role of performance measurement system on strategy formulation in Spanish medium to large

firms defined medium sized firms to having a minimum annual turnover of 10 million euros (Ksh. 1.1 billion) and minimum of 50 employees. Similarly, a study by Silvi *et al*. (2015) in Italy made conclusions on use of performance measurement system by medium-large sized firms and defined medium sized firms as generating annual revenue exceeding 10 million Euros (Ksh. 1.1 billion). In Nigeria, a study by Akpabot and Khan (2015) made conclusions on small and medium enterprises employing 11 to 200 persons; while a study by Langwerden (2015) draws a general conclusion on small and medium enterprises to include firms with fewer than 250 employees. This shows a lot of ambiguity, which limits making conclusions about medium sized firms' use of performance measurement systems based on studies conducted in different jurisdictions.

Thirdly, the most common strategic measurement models including, Balanced Score Card (Kaplan & Norton, 1992); Simon's four levers of control (Simons, 1995); performance measurement and control framework (Ferreira, & Otley, 2009); and Flexible Strategy Game Card (Sushil, 2010) were developed within the framework of large firms. Medium sized firms by their very nature may lack the necessary capabilities, resources and structure to fully support and successfully implement these frameworks (Wong & Aspinwall, 2004).

Fourth, literature on the influence of performance measurement systems on firm performance predominantly focus on the manufacturing sector with limited emphasis on the service industry (Ferreira, *et al*., 2012; Garengo, & Bernardi, 2007b; Hudson, *et al*., 2001; Kumar & Bhagwat, 2006; Sohail & Hoong, 2003). Moreover, the few studies based on the service industry do not explicitly focus on the medium sized service firms (Hinton & Barnes, 2009; Hudson, *et al*., 2001; Lee & Wong, 2015; McCann & Barlow, 2015; Rompho & Boon-itt, 2012).

Fifth, majority of the empirical studies reviewed only focused on limited number of variables and are therefore not comprehensive and holistic enough for generalization. Majority of the studies only looked at singular or limited variables at a time and did not consider the interactive effects of several factors studied at the same time (Antony &

Bhattacharyya, 2010b; Hinton & Barnes, 2009; Lee & Wong, 2015; McCann & Barlow, 2015; Saunila *et al*., 2014; Tapinos *et al*., 2005; Thakkar, Kanda, & Deshmukh, 2009). Moreover, the use of financial measures as a variable of performance is predominant and this brings another challenge in that different organizations use different approaches for performance calculation (Antony & Bhattacharyya, 2010b; Hinton & Barnes, 2009; McCann & Barlow, 2015).

Moreover, studies that attempt to explore and develop strategic measurement systems in the smaller and medium sized firms are predominantly based in the developed countries and developing countries in Asia. African context especially Kenya has not been factored sufficiently in literature. Since performance is highly context based, limited scope in terms of geographical coverage, economies and regional blocks restrict the generalizability of results even if the setting is in another developing country. Most studies to evaluate the relationship between performance measurement systems and firm performance are based outside Kenya (Antony & Bhattacharyya, 2010b; Garengo, & Bernardi, 2007b; Hinton & Barnes, 2009; Hudson, *et al*., 2001; Kumar & Bhagwat, 2006; Lee & Wong, 2015; Rompho & Boon-itt, 2012; Saunila *et al*., 2014; Sohail & Hoong, 2003; Sousa *et al*., 2006; Tapinos *et al*., 2005; Thakkar *et al*., 2009). Hence, additional research is required to examine if the findings could be extended to medium sized service firms in Kenya.

The other observation is that there seems to be confusion and contradictions among scholars on the true position of strategic measurement systems on performance of medium sized firms. On one side there is evidence of lack of strategy in SMEs and formalization of strategic choices (Virtanen, 2017) or simply the view that SMEs have a hard time rationalizing their operational practices and strategic processes. Thus, consider strategy mainly as emerging (Bititci, Garengo, Dörfler, & Nudurupati, 2012) and do not require the implementation of strategic measurement systems. On the other hand, literature provides alternative performance measurement systems for SMEs (Lee & Wong, 2015; McCann & Barlow, 2015; Rompho & Boon-itt, 2012), where

implementation of strategy so far considered by others as non-existent or at best rudimentary or not given much importance.

2.6 Research Gaps

The empirical literature review identified several conceptual, contextual and methodological gaps in the study of strategic measurement systems and performance of medium sized service firms in Kenya. Contextually, most studies on the influence of performance measurement systems on firm performance predominantly focus on the manufacturing sector with limited emphasis on the service industry. The few studies based on the service industry not explicitly focusing on the medium sized service firms (Hinton & Barnes, 2009; Hudson, *et al*., 2001; Lee & Wong, 2015; McCann & Barlow, 2015; Rompho & Boon-itt, 2012). Further, studies that attempt to explore and develop strategic measurement systems in the smaller and medium sized firms are predominantly based in the developed countries and developing countries in Asia (Garengo, & Bernardi, 2007b; Hinton & Barnes, 2009; Lee & Wong, 2015; Rompho & Boon-itt, 2012; Saunila, *et al*., 2014). African context especially Kenya is not sufficiently captured in literature. Since performance is highly context based, limited scope in terms of geographical coverage, economies and regional blocks restrict the generalizability of results even if the setting is in another developing country. Peculiarities of medium sized service firms and contextual factors demands for evaluation of performance based on their context. Hence, additional research would be required to examine if the findings could be extended to medium sized service firms in Kenya.

Conceptually, Majority of empirical studies reviewed only focused on limited number of variables and are therefore not comprehensive and holistic enough for generalization. That is, majority of the studies only looked at single or limited variables at a time and did not consider the interactive effects of several factors studied at the same time (Antony & Bhattacharyya, 2010b; Hinton & Barnes, 2009; Lee & Wong, 2015; McCann & Barlow, 2015; Tapinos, *et al*., 2005; Thakkar, *et al*., 2009; Saunila, *et al*., 2014). Moreover, the use of financial measures is predominant. Hence, the need to conceptualize a study which

looks at the interactive effect of variables. This study investigated the combined effect of SMS's breadth, depth, strategic alignment and flexibility on the performance.

Methodologically, empirical literature review revealed inconsistency on the results due to methodological differences especially with regard to sample adequacy (Ahmed & Sun, 2012; Carlyle, 2013; Cocca & Alberti, 2010; Kihara, 2013); sampling methods (Felizardo, *et al*., 2017; Maduekwe & Kamala, 2016;Masri, 2013), data collection and analysis procedures (Akpabot & Khan, 2015; Alexandra, 2015; Kaminskaite, 2017; Konjer, 2015; Virtanen, 2017; Yang, 2012). In addition, most empirical studies have been anchored on traditional PMS models developed within the framework of large firms (Ahmada & Zabria, 2016). Moreover, the use of short-term financial measures is predominant.

This study extended conceptualization of the relationship between SMS design and firm performance through the integration of breadth, depth, alignment and flexibility variables, as well as customer value as mediating variable and organizational context as a moderating variable to fill these knowledge gaps. This integration is particularly important to practitioners and researchers since in practical scenarios, these variables do not act in insolation but in a complex web of interrelation. Thus, the findings presented a more practical combination of the factors and their effects. The study also sought to fill the knowledge gap by enriching empirical validation by use of adequate sample size, inferential statistics, and application of flexibility strategy-game-card and determinants/results frameworks specifically designed for service sector to measure short-term financial, short-term non-financial and long-term strategic outcomes.

2.7 Summary

In summary, for organizations to meet their short term and long-term objectives, the organizations need a continuous stream of information that guides rational decision-making. The information must be in line with the organization's objectives for the information to be useful. Strategic measurement systems provide sets of measures used to gather, analyse, and report performance that operationalize firm strategy. Specifically, in the strategy implementation process, organizations use strategic measurement systems to

acquire information and knowledge that stimulate organizational learning and adaptation. In this way, the systems are critical in developing unique organizational capabilities for sustainable competitive advantage and profitability.

Theoretical propositions show a link between strategic measurement system and firm performance. Based on RBV and organizational learning theories, the link between strategic measurement systems and firm performance is stressed to the extent that strategic measurement systems stimulate organizational learning frameworks and enhances accumulation of valuable, rare, inimitable, and non-substitutable capabilities. Thus, strategic measurement systems are vital for development of competitive advantages and strategic performance. Particularly, having a broad strategic measurement system increases the chances of developing a large pool of competitive capabilities and advantages. Further, the link between detailed/strategically aligned measurement system and firm performance has been stressed in the decision-making theory's proposition for the right and complete information for rational decision-making. Moreover, dynamic capabilities theory proposes a link between flexibility of strategic measurement system to the extent that flexible strategic measurement systems adjusts the emerging issues so as to facilitate continuous acquisition of information for continuous development, and reconfiguration of firm-specific resources.

As depicted by Franco-Santos and Bourne (2005), research on performance measurement systems has conceptualized factors affecting PMS effectiveness around two main dimensions. The Process dimension, which include design factors (strategy map, measures, alignment, ICT), implementation factors (management support, employee empowerment, communication) and use factors (flexibility, data analysis, rewards, management process). The second dimension is the context fact, which include internal context (strategy, culture, structure, size) and external context (industry, environment). This formed the basis of conceptualization in this study.

Many empirical studies have been carried out on performance measurement systems. However, while some studies prove a positive link between performance measurement systems and firm performance, other studies conclude that this may be misguided and PMS may not always positively influence performance. In fact, as observed by Bäuml (2014), lengthy and advanced strategic measurement systems may impede firm growth especially in smaller and medium sized enterprises where the complex strategic measurement system may end tying up the mush needed resources for organizational growth. Empirical evidence also shows that most studies have been conducted in the context of large manufacturing firms in the developed countries. However, compared to large firms, mediums sized firms have unique distinctive characteristics.

Unlike the large firms, medium sized firms are often faced with the challenges of insufficient funds and inadequacies in management and employee capabilities. They also prefer informality, personalized engagement, flexibility, responsiveness and continuous innovation. Moreover, they are often faced with the problem of inadequate strategic capabilities due to limited use of advanced strategic measures. This problem results in high failure rates and low marginal contributions by these firms. Adoption of strategic measurement systems by mediums sized firms to address this problem has been characterized by use of strategic measurement systems developed within, and for, large manufacturing firms in the developed countries. Conversely, due to structural and philosophical differences, the models are not directly transferable to medium sized service in developing countries. Meaning, models in use may not be adequately serving the intended purpose for the medium sized service firms in developing economies.

For the systems to be effective, they are expected to be appropriately designed taking into consideration firm characteristics, firm environment, technology, firm strategy and culture. This study attempts to address the problem of limited use of appropriately designed strategic measurement systems by investigating the influence of the strategic measurement system design on performance of medium sized service firms in Kenya. The study specifically explored the impact of the systems' breadth, depth, strategic alignment,

and flexibility. The study also looked at the mediating effect of customer value as well as the moderating effect of organizational context (size and structure) on the relationship between strategic measurement system and firm performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter discusses the study's plan of action. It offers justification on the choice and use of particular research methods in this study. In particular, research philosophy and design; study population; sampling design; data collection methods; research procedure; data analysis; and presentation methods applicable to this study are presented.

3.2 Research Philosophy

The study adopted a pragmatist research philosophy. Pragmatist philosophy combines both positivism and constructivism paradigms to produce quantitative and qualitative information. Proponents of the paradigm argues that pragmatism has the potential to offer an organizing framework for social research. That is, unlike more positivistic or constructivist models of research, a pragmatic model allows for a plurality of views and methods to be a part of its overall research plan (Kaushik & Walsh, 2019). Several studies have adopted pragmatism as the research paradigm as a principle deeper understanding of constructs and offering effective practical strategic insights into phenomenon (Aiken & Talisse, 2016; Ansell & Boin, 2017; Gross, 2018; Paulus, 2017).

Pragmatist philosophy was appropriate for this study because while the study developed the hypotheses based on existing theories and intended to test the hypotheses using inferential statistics, this study also sought to explore detailed meanings and insights. Hence, pragmatist philosophy was helpful in deducing and inducing meaning for theory testing, modification and generalization (Saunders, Lewis, Thornhill, & Bristow, 2015).

In this study, positivist paradigm entailed use of optional choice questions and parametric tests, while holding an ontological assumption that knowledge is real and is external to the researcher. Therefore, the process of acquiring and communicating knowledge (epistemology) focused on facts, numbers and observable phenomena (Krauss, 2005; Scotland, 2012; Saunders *et al*., 2015). Further, value free engagement between the

researcher and the respondents was emphasized (MacIntyre, 2006). This was vital to avoid bias and ensure objectivity in drawing conclusions. Theoretical review, hypotheses development, empirical modelling, operationalization of variables and hypotheses testing (deduction) characterized the positivist paradigm.

On the other hand, constructivist paradigm entailed use of open-ended questions to gather qualitative information from the respondents. Constructivism held an ontological assumption that there are multiple realities, which are flowing and can be constructed (Saunders, *et al*., 2015). Hence, epistemologically, the paradigm recognized the respondents' opinions, insights, attributed meanings, and individual contexts.

3.3 Research Design

A research design is a type of inquiry within qualitative, quantitative, and or mixed methods approach that provides a specific direction for procedures in a research (Creswell, 2014). The research design presented the overall plan for connecting the conceptual research problems to the empirical research. Specifically, the adopted research design articulated purpose of inquiry; what data was required; methods of data collection; methods of data analysis; and how all these sought to answer the research questions.

In line with pragmatist philosophy, the study adopted a descriptive research design with a mixed research approach for collecting quantitative and qualitative data. Descriptive research design has been widely used in management research (Rillo & Alieto, 2018; Sileyew, 2019; Osodo, Osodo, Mito, Raburu, & Aloka, 2016; Turnbull, Chugh, & Luck, 2021) to describe the existing phenomena as accurately as possible to provide practical solutions to real issues facing the organization (Atmowardoyo, 2018).

The use of quantitative and qualitative data offered an opportunity for data corroboration (Creswell, 2014). This also facilitated compensation of inherent individual approach weaknesses (Greene, 2007). This approach therefore, provided a better understanding of phenomena under investigation (Ihuah & Eaton, 2013). Since the objective of the study was to investigate the effect of strategic measurement system design on performance by exploring the characteristics of a sample, the design provided appropriate data for

describing the sample characteristics as well as for drawing inferences to the entire population on why and how of the study.

3.4 Study Population

A population is a set of items or members of a group that conform to a set of specifications (Cooper & Schindler, 2014). According to a study by Kenya National Bureau of Statistics (KNBS), there were 3,058 registered medium sized service firms in Kenya (KNBS, 2016). This constituted the target population. Records from the Nairobi City County (NCC) in 2017 indicated that 2,039 (66.7% of the entire target population) of these firms were either headquartered or were having branches in the City. Approximately 9% of these firms were licenced by Nakuru County, 6% by Kiambu County, 5% by Kakamega County while the rest of the Counties had less than 4% representation (KNBS, 2016).

According to the report, apart from NCC all the other counties failed to have full representation of all the sub sectors in the medium sized service firms' category. However, since the Nairobi City County had the highest single representation (66.7%) of the medium sized service firms in Kenya, and because NCC had all the sub sectors of the service industry represented, it was practical to access all strata of the population in the City County. NCC was therefore, considered a fair representation of the entire medium sized service firms' population in Kenya. Hence, the study population comprised of 2,039 medium sized service firms registered in NCC. The sampling frame was thus the Nairobi City County businesses register firms.

The unit of analysis comprised of medium sized service firms, while the units of observation were the chief executive officers of the sampled firms. Where chief executive officers were completely unavailable, one top manager per firm was interviewed. Top managers were used as respondents because they are the ones best placed in understanding the intricacies of firm operations and overall performance. That is, top management are the persons who are mostly knowledgeable about the business strategy and the ones who drive strategic measurement systems (Mohamed & Rahman, 2010). Data was collected from only one member of the top management team. Managers or chief executive officers

have been repeatedly used as key informants in other studies in the same field to provide data consistency (Kamboja, Goyal, & Rahmanc, 2015).

3.5 Sampling Frame

A sampling frame is a listing of all population elements that are available and are accessible at the time of conducting a study (Cooper & Schindler, 2014). In this study, the sampling frame consisted of a list of all the 2,039 medium sized service firms licensed by the Nairobi City County (NCC) in Kenya as at December 2017 (NCC, 2018).

3.6 Sample and Sampling Technique

Sampling defines the process of selecting a representative sub section of a population for data collection and analysis (Lameck, 2013). The study used Krejcie and Morgan (1970) table to select a sample size of 323. The table estimates are based on a formula for determining finite population as provided by Tabesh, Saki, & Pourmotahari (2013).

$$S=\frac{X^2NP(1-P)}{d^2(N-1)+X^2P(1-P)}$$

Where:

S = Required Sample size

X = Z value (1.96 for 95% confidence level)

N = Population Size

P = Population proportion (assumed to be 0.5 or 50%)

d = Degree of accuracy (5%), expressed as a proportion (.05); (margin of error)

Hence; S = $\frac{(1.96*1.96)*2{,}039*0.5*(1-0.5)}{(0.05*0.05)*(2{,}039-1)+(1.96*1.96*0.5*(1-0.5))}$ = ***323***

Since service firms are identifiable through distinct sub sectors, the study adopted stratified random sampling technique to draw a representative sample to participate in the study. Each distinct sub-category formed specific stratum considered as an independent sub-population, out of which individual elements were randomly selected by use of the random selection tool in excel. This method was considered appropriate to ensure that

every unit in every stratum had a chance of being selected. The method also ensured proportionate representation of each stratum by use of sampling fractions for all strata and adequate representation of minority sub-groups. Table 3.1 illustrates the stratification of the sample size.

Table 3.1: ***Sample Size Distribution***

Category	Sub Category	Population	Sample Size	Sample Proportion (%)
Transport & Warehousing	Transport	181	29	8.9
	Warehousing	223	35	10.8
Tourism & Hospitality	Hotels	226	36	11.1
	Tourism	559	88	27.2
	Eateries	445	70	21.7
ICT & Media	ICT	38	6	1.9
	Media	18	3	0.9
Financial & Insurance	Financial	167	26	8.0
	Insurance	13	2	0.6
Professional services	-	48	8	2.5
Education	-	39	6	1.9
Health	-	35	6	1.9
Arts & Entertainment	-	47	8	2.5
Total		**2,039**	**323**	**100**

Source: NCC (2018)

3.7 Data Collection Instrument

Quantitative (numeric) and qualitative data was collected by use of a survey questionnaire. The tool was used because as indicated by Creswell (2014), surveys are appropriate for eliciting data usable in describing trends, attitudes, or opinions of a population by studying a sample of that population. The questionnaire collected both cross-sectional and longitudinal data from where inferences were drawn to the population. A questionnaire was preferred because the instrument provided an opportunity to explore various concepts and variables within the same instrument.

To collect quantitative data, the instrument used multiple option choices and 5-point Likert scales where, 1= strongly disagree, 2=disagree, 3=somehow agree, 4=agree and 5=strongly agree to measure degree of variable existence (Creswell, 2014). The study adopted the use of ascending order scale to avoid the inflated data associated with descending-ordered scales. According Chyung, Kennedy and Campbell (2018), in self-

administered surveys, response order effects leads to four major concerns. First survey respondents have a tendency to select the options that are presented (written) at the beginning of the response option list (primacy effect). Second, survey respondents, who are accustomed to reading text from left to right, have a tendency to select what on the left side of the option list (Left-side selection bias). Third, survey respondents tend to agree with the statement provided to them, rather than disagree with it (Acquiescence bias/yea-saying bias). Fourth, survey respondents tend to select an option that is more socially desirable (likely a positive option) than not socially desirable (Social desirability bias).

Hence, for a descending ordered Likert scale, all the four biases are more pronounced at the extreme left of the scale. For an ascending ordered Likert scale, primacy effect and left-side selection bias will be pronounced on the extreme left and acquiescence and social desirability bias will be more pronounced on the right. This creates a balance on the ascending scale. Thus, use of ascending-ordered scale was preferred to reduce the response order effects manifested through the tendency for participants to choose response options that are closer to the beginning of a list and the tendency to agree with a statement.

The use of actual numbers alongside the anchors at each measurement point of the scale was considered appropriate because as suggested by Harpe (2015), the use of actual numbers in the presentation of a rating scale is useful in treating Likert scale responses as interval-level measures rather than as ordinal data. This is based on the concept of mental number line. A study by Cohen and Blanc-Goldhammer (2011) suggested that when humans are presented with numbers, in either numeric or verbal form or relative magnitude, they have mental representation of numbers that seems to resemble a mental number line. This mental number line according to Harvey, Klein, Petridou and Dumoulin (2013) is physiologically mapped onto the human brain itself. Thus, the intervals between numbers are precieved as equal since they appear to be mapped to this internal number line (Harpe, 2015).

The study therefore presumed the original Likert's assumption of equidistance between the numbers in the reponse scale suggesting an interval measurement (Harpe, 2015). Arithmentic means of the items in the scale were used for evaluation and interpretation. Considering that the use of arithmentic means resulted into real numbers with decimals, the results were re-scaled to cater for values between the anchors. Since, between 1 and 5 there are four whole units, the measure between two successive anchors was considered to be equal to 4 divided by 5 or 0.8. Therefore, values between 1 and 1.8 approximated strongly disagree (1) while values between 1.8 and 2.6 approximated disagree (2); values between 2.6 and 3.4 approximated somehow agree (3), values between 3.4 and 4.2 approximated agree (4) and values between 4.2 and 5.0 approximated strongly agree (5).

This approach assumed that variables measured differ in extent and that values are continuous (Bäuml, 2014). Findings by Sullivan and Artino (2013); Norman (2010); Owuor (2001); Zumbo and Zimmerman (1993) show that parametric statistics can be used with higher order Likert data, with small sample sizes, with unequal variances, and with non-normal distributions, without compromising accuracy provided the scale has more than four Likert points. Further, Rasmussen (1989) demonstrates that Type I and Type II errors are not seriously compromised by the use of a 5-point Likert scale.

To collect qualitative data, the questionnaire used open-ended survey that focused on discovering and understanding different perspectives, and opinions of the respondents to explore deeper meaning, purpose and reality (Harwell, 2011). The open-ended questions did not have predetermined responses. This offered an opportunity to gather varied qualitative information from the respondents to check the accuracy (validity) and help give meaning and establish cause effects to the quantitative data (Creswell, 2014).

The questionnaire was arranged into six sections. The first section explored the general organizational information. This section captured information regarding the organization's size, structure, and use of strategic measurement systems. Part two of the questionnaire explored the breadth of the strategic measurement systems. The third section sought to identify the depth of the strategic measurement systems. Fourth section

explored the strategic alignment of the measurement system while the fifth section explored flexibility of the strategic measurement systems. The last section sought to identify level of performance.

3.8 Data Collection Procedure

Research authorization was sought from the National Commission for Science, Technology, and Innovation (NCSTI) and Nairobi City County. Copies of the authorization documents were used to introduce the researcher to the respondents. This was necessary to assure the respondents that the research was purely for academic purpose. A statement assuring confidentiality was also included in the questionnaire to improve response rate.

The study adopted a drop and pick strategy to collect data. The services of research assistants were sought to distribute the self-administered questionnaires to the respondents during official working hours at their offices. Phone calls were used as a measure of improving response rate by prompting the respondents to fill the questionnaire before the collection date. The research assistants revisited the respondents after one week to collect the duly filled questionnaires.

3.9 Pre-Testing

Pilot testing was conducted to try out the effectiveness of the research techniques, methods, and instruments. Pilot testing was used to help detect whether the instructions were comprehensible to the respondents; whether sufficient time was allowed for filling the questionnaire; and whether the wordings of the items accurately operationalized the variables, being investigated (Cooper & Schindler, 2014). Particularly, the procedure helped in identifying potential practical challenges during data collection, their possible cause and mitigation. The other issues addressed by piloting was to establish whether research assistants were sufficiently skilled in the research procedures; check the statistical and analytical processes to determine their efficacy (Hazzi & Maldaon, 2015).

Pilot testing was conducted on 37 respondents representing 11% of the sample size, between January and April 2018. According to Saunders (2007); Hill (1998); Isaac and Michael (1995), pilot sample sizes between 10 and 30 are generally considered adequate in survey research since they are large enough to test the null hypothesis and small enough to overlook weak treatment effects. The respondents who participated in the pilot test were excluded from the final study to eliminate any bias due to prior exposure to the questionnaire. Prior to the final analysis, the instrument was also evaluated to check for the instrument's reliability and validity (Hazzi & Maldaon, 2015).

3.9.1 Reliability of the Research Instrument

Construct and indicator reliabilities of the instrument were tested. The overall construct internal consistency reliability was measured by Cronbach's Alpha values (measure of average of all possible split-half reliability estimates/ correlations) while calculated composite reliability (CR) index was used to establish reliability of sub constructs (Drost, 2010). Construct reliabilities measured the internal consistency of the construct under study and it reflected the degree to which the indicators comprehensively measured their respective constructs (Bäuml, 2014). Construct reliability prioritized indicators according to their reliability during model estimation (Hair, Black, Babin, & Anderson, 2010). As suggested by Hair *et al*. (2010) Cronbach Alpha values of 0.60 to 0.70 are considered sufficient while values of 0.70 to 0.90 are considered excellent. According to Drost (2010), calculated composite reliability (CR) must be greater than 0.70 for construct reliability to be established.

Indicator reliability estimate involved measurement of an indicator's variance that can be explained by the construct that the indicator intends to measure (Bäuml, 2014). As recommended by Hair *et al*. (2010), each indicator's absolute standardized loading should be higher than 0.70 and indicators with loadings between 0.40 and 0.70 should only be considered for removal from the scale if deleting them leads to an increase in composite reliability above the suggested threshold. Bäuml (2014) sets another exemption that

indicators with loadings of at least 0.50 can be retained in the model if other indicators measuring the same latent construct show high reliability scores.

For indicator reliability, according to Drost (2010), if deleting an indicator from a scale increases the scale's overall construct reliability (Cronbach's Alpha), then the deleted indicator should be considered unreliable since its inclusion in the scale weakens the total scale reliability. However, if deletion of an indicator from a scale reduces the scale's overall construct reliability (Cronbach's Alpha), then the deleted indicator should be considered reliable since its inclusion in the scale improves the total reliability of the scale.

Table 3.2: ***Evaluation Criteria for Reliability Tests***

Measure	**Evaluation Criteria**
Internal Reliability	Cronbach's Alpha > .70 (Ideal)
Calculated Composite Reliability (CR)	CR > .70 (Ideal)
Overall constructs' reliability when item is deleted	< Overall construct's reliability

Source: Drost (2010); Hair, *et al*. (2010)

3.9.2 Validity of the Research Instrument

Face-to-face, convergent and discriminant validities were tested to ascertain whether the research instruments truly measured that which they were intended to measure (Golafshani, 2003). Face-to-face validity was assured through literature review and by seeking expert opinion. Exploratory factor analysis (EFA) was used to assess the convergent validity of each of the constructs. Average variance extracted calculated in the EFA was used to determine agreement between measures of the same construct (Guo, Aveyard, Fielding, & Sutton, 2008). Average variance extracted values above 0.7 were considered as very good (Gefen, Straub, & Boudreau, 2000) but values of 0.50 and higher indicated a sufficient degree of convergent validity, meaning that the latent variable explained more than half of its indicators' variance (Hair *et al*, 2010).

Discriminant validity was used to determine the extent to which indicators of associated latent constructs were unrelated to indicators of all other latent constructs (Bäuml, 2014). A latent construct was expected to share more variance with its assigned indicators than with indicators from another latent variable in a structural model. Thus, the shared

variance between a latent variable and its indicators was expected to be higher than the variance with other latent variables (Bäuml, 2014). The measurement of the discriminant validity was achieved through two measures. First, was by comparing the amount of variance captured by the construct and the shared variance with other constructs. Statistically, the average variance extracted (AVE) of each latent construct should be greater than the latent construct's highest squared correlation with any other latent construct (Hair *et al*, 2010). Otherwise, the levels of square root of the AVE for each construct should be greater than the square of correlation involving the constructs. The second measure of discriminant validity was by use of indicator loadings where an indicator's loading with its associated latent construct should be higher than its loadings with all the remaining constructs.

Convergent and discriminant validities were tested to operationalize the constructs and their sub constructs. Exploratory Factor Analysis (EFA) was the preferred technique for testing construct validity because even though the scales were developed from literature review, the actual scales adopted for the study had not been tested and the number of indicators and their arrangement in the constructs and sub constructs had not been validated. Further, EFA was critical in determining the factor structure and in explaining the maximum amount of variance in indicators attributed to their latent variables. Average Variance Extracted (AVE) from EFA outputs were used as the statistical test for testing convergent validity; while shared variance was used to test for discriminant validity (Hair, *et al*., 2010). Table 3.3 shows the criteria for validity evaluation.

Table 3.3: ***Evaluation Criteria for Validity Tests***

Measure	**Evaluation Criteria**
Sample adequacy	Kaiser-Meyer-Olkin (KMO) > .6; Bartletts Test of Sphericity ($p < .05$)
Factor Loadings (uni-dimensionality)	> .5
Convergent validity	AVE > .5
Discriminant validity	$\sqrt{AVE}_{m} > \max_{i=1,\dots L}(corrl_{ml})^2$; Correlation between constructs < .85

Source: Hair, *et al*. (2010); Drost (2010); Field (2013); Bäuml (2014)

In summary, according to Field (2013), data adequacy must be established before factor analysis and generally in EFA, KMO values between 0.5 and 0.7 are considered low but acceptable, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb indicators of data adequacy. According to Hair, *et al*. (2010), convergent validity is established when at least 50% of the variance in an indicator is attributed to its construct. That is, when factor (indicator) loadings > 0.5 and the average variance explained (AVE) values > 0.50, which shows that more than 50% of the variance in the indicator is attributed to their specific constructs.

Similarly, according to Hair *et al*. (2010), discriminant validity is achieved when the square of the variance extracted between constructs are greater than the square of correlations between the constructs (square root of AVE > correlations square). That is, to show that several latent constructs extracted through factor loadings are truly distinct from each, then the shared variance between the indicators in each construct must be higher than the variance with other latent constructs. Square root of AVE of each of the construct should be greater than the square of the highest correlation between the constructs (Hair *et al*., 2010). Secondly, according to Field (2013), correlation between two latent constructs should be less than 0.85 for discriminant validity to be established.

3.10 Data Processing and Analysis

Data processing involved quantitative and qualitative data analysis. Quantitative data analysis included summaries and inferential statistics. Summary statistics included counts of occurrence (frequencies) expressed in numbers and percentages. Aggregate scores (means) and standard deviations of various indicators within a construct or sub construct were also calculated to describe the construct or sub construct. Summary statistics were useful in providing overall description of the characteristics of the studied population sample. To estimate the relationships in the empirical models, the study used multiple linear regression analysis. The tool sought to establish existence and strength of relationships between the variables.

Multiple linear regression analysis provided an opportunity for rejecting null hypotheses of no effect and offered variance explanations. The method was also appropriate as it supported both exploratory and confirmatory research (Gefen eta al., 2000). Unique to linear regression is that, it is relatively robust and has well-established methods of handling non-linear distributions. That is, linear regression has well established methods of identifying and proven remedial data transformation methods for handling data that are non-linear (Gefen *et al*., 2000). Linear regression also offered methods for dealing with outliers (Hair, Black, Babin, & Anderson, 2010). Finally, linear regression supports a smaller sample size (Gefen *et al*., 2000; Constantine, 2012; Egboro, 2015).

To perform linear regression analysis on the data, an index for each of the constructs was calculated. The indices were developed by averaging the scores for several items in the measurement scale. Scores from various indicators were rescaled into a 1 to 5 scale before calculating the indices. Using an average as an index for construct testing is acceptable so long as the items making up the instrument's scales are tested to ensure that they have strong construct validity and reliability (Gefen *et al*., 2000). The qualitative data was evaluated through a process of theme identification and categorization into meaningful information. The common themes were aided by literature review. The findings were then summarized according to themes in tabular form for ease of understanding and interpretation.

3.10.1 Diagnostic Tests

Before conducting the quantitative data analysis, the data was checked to identify its suitability for use with the proposed data analysis method (regression analysis). Diagnostic tests included tests for outliers, normality, linearity, equality of error variance across groups (homoscedasticity), model misspecification, independence of the regression residuals (auto-correlation), and multi-collinearity.

3.10.2 Test for Outliers, Leverage Points, and Influential Data Points

Outlier labelling rule was used to identify extreme values in the data set. According to this rule, any value above upper quartile plus 2.2*interquartile range or below lower

quartile less 2.2*interquartile range is considered an extreme outlier (Garson, 2012). In addition, at 95% confidence level, approximately 5% of standardized residuals of observations were expected to be outside ±1.96 but values outside ±3 were considered extreme outliers (Garson, 2012). Extreme outliers were then deleted from the data set.

To establish presence of influential observations, two measures were used. The average leverage score was calculated as (k + 1)/ n, where k was the number of independent variables in the model and n was the number of observations. Observations with 3 times this value indicated influential observations (Garson, 2012). Cook's distance above 4/ (N-k-1) (where N is the number of observations, k the number of independent variables) was also used to confirm influential observations (Garson, 2012; Wooldridge, 2013). Observations, which failed the two tests, were eliminated.

3.10.3 Test for Normality

Linear regression analysis requires regression residuals (error terms) to be approximately normally distributed. Statistical tests of Kurtosis, Skewness, W/S tests (Range/Standard Deviation), and Shapiro-Wilk test outputs (Doane & Seward, 2011) were used to test the hypothesis of normal distribution of the error terms. As a rule of thumb, if the Shapiro-Wilk test is insignificant ($p > 0.05$), then the distribution of the error terms is considered normally distributed (Razali & Wah, 2011). That is, where the significant value of Shapiro-Wilk test was greater than 0.05, the data was considered normal and values below 0.05 showed that the error terms significantly deviated from normal distribution (Razali & Wah, 2011).

For W/S statistics, ***q***-values (range/standard deviation) were expected within the critical range at the s*et al*pha (0.05) for normally distributed error terms. Finally, skewness and kurtosis ***z***-values were calculated by dividing the statistics by their standard errors. The evaluation criteria were such that ***z***-scores within ±1.96 at 95% level of confidence indicated normal distribution while ***z***-scores outside ±1.96 indicated non-normal data. Since, the four normality tests employed have their inherent weaknesses, all these

measures were considered for each construct and where a construct failed in at least two of the measures, then the construct was considered non-normal.

3.10.4 Test for Linearity

Linear regression analysis requires the relationship between predictor variables and the outcome variable in a model to exhibit degree of linearity. The test of the assumption of linearity utilized comparison of group means to test whether or not the means of several groups are all equal. Linearity was considered significant if the probability of deviation from linearity statistics significantly deviated from zero (> alpha) or when the probability of the ***F***-statistics was less than the s*et al*pha level (Garson, 2012). These two measures were evaluated jointly before drawing conclusion about the linearity of the data set. The study used an alpha level of 0.05 as the cut-off criteria.

3.10.5 Test for Homoscedasticity

Linear regression analysis requires error variance of the variables to be equal across groups. Levene's test was used to test that error variance of the variables are equal across groups. Firm size (number of employees) was used as fixed factor and univariate analysis of general linear model was run to test hypothesis that error variance of the variables is equal across groups. If the ***p***-value of the Levene's statistics is significant (<0.05), then null hypothesis of equal variance was not supported. Hence, there is a statistically significant difference in the population. This would indicate violation of the assumption of homogeneity. That is, statistically significant Levene's test result (<0.05) show presence of heteroscedasticity (Field, 2013). This was confirmed by Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity, where the probability value of the chi-square statistic for the multivariate regression > 0.05 indicated inadequate evidence to indicate presence of heteroscedasticity in the residuals of the scale.

3.10.6 Test for Auto-correlation

Independence of the residuals is one of the basic assumption of regression analysis. Autocorrelation test confirms unequal covariance between the error terms in the model. Durbin–Watson (DW) was used to diagnose for auto-correlation. The test has been cited

as the most common test for first-order autocorrelation (Wan, Zou, & Banerjee, 2007; Akter, 2014). The Durbin-Watson (DW) statistic range from zero to four with a midpoint of two. As a rule of thumb, a D-W test statistic of 2 indicate no autocorrelation; values between 0 and 2 show positive autocorrelation; values between 2 and 4 show negative autocorrelation; values between 1.5 and 2.5 show relatively normal data; and values below 1 or greater than 3 are a cause of concern (Field, 2013)

3.10.7 Test for Multicollinearity

For multiple linear regression to hold, predictor variables in the model should not be predicted by other variables in the model with substantial degree of accuracy. Otherwise, if one predictor variable in a multiple regression model is linearly predicted by other variables in the model with substantial degree of accuracy, multi-collinearity occurs. Test for multi-collinearity was achieved by examination of the tolerance and variance inflation factors (VIF) which measured how variance of an estimated regression coefficient changed if the explanatory variables are correlated. As a rule of thumb, VIF values >10 or tolerance values < 0.1, are strong indicators of multi-collinearity (Woolddridge, 2013).

3.10.8 Test for Model Misspecification

The test is based on the assumption that in a population, the mean of the unobservable error does not depend on the values of the explanatory variable. That is, the error term has an expected value of zero given any values of the independent variable (Wooldridge, 2013). Ramsey's regression specification error test (RESET) was used to detect general functional form misspecification. The RESET was based on the assumption that in the population, the mean of the un-observable error does not depend on the values of the explanatory variables. That is, the error *u* had an expected value of zero given any values of the independent variables (Wooldridge, 2013).

Hence, if the proposed model, $y=\alpha_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ satisfied the assumption, then no nonlinear functions of the independent variables would be significant when added to the original equation (Wooldridge, 2013). Non-linear functions of Xj in the form of the cubed fitted values were added to the expanded equation. That is, $y= \alpha_0 +$

$\beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \delta_1\hat{y}^3 + \varepsilon$. The RESET was the *F* statistic for testing H_0: $\delta_1=0$ in the expanded model. The valuation was against a significant *F* statistic. Summary for evaluation of the diagnostic tests is represented in Table 3.4.

Table 3.4*: Evaluation of the Measurement Tool*

Measurement	Test	Ideal	Acceptable	Reference
Sample adequacy	KMO	>0.6	>0.6	Field (2013)
	Bartletts test	p<0.05	p<0.05	Field (2013)
Construct/Internal reliability	Cronbach alpha	>0.7	≥0.6	Drost, (2010); Hair *et al*. (2010)
Composite reliability (CR)	CR	>0.7	≥0.6	Hair *et al*. (2010)
Indicator reliability	Corrected Item-Total correlation	If deleting item decreases Cronbach alpha	If deleting item decreases Cronbach alpha	Drost, (2010); Hair *et al*. (2010)
Convergent validity	AVE	>0.7	≥0.5	Hair *et al*. (2010)
Discriminant validity	$\sqrt{AVE}$	$\sqrt{AVE}_m > \max_{i=1,\ldots L}(corrl_{ml})$	$\sqrt{AVE}_m > \max_{i=1,\ldots L}(corrl_{ml})$	Hair *et al*. (2010)
	Correlations	<0.85	<0.85	Field (2013)
Outliers	Outlier labelling	Q1h<*x*<Q3h	Q1h<*x*<Q3h	Garson (2012)
	Standardized residuals	-1.96<*w*<+1.96	-3<*w*<+3	Garson (2012)
	Cooks' value	<4/(N-k-1)	<4/(N-k-1)	Garson (2012)
	Leverage score	<2((k+1)/n)	<3((k+1)/n)	Garson (2012)
Normality	Skeweness	-1.96<z<1.96	-1.96<z<1.96	Razali and Wah (2011)
	Kurtosis	-1.96<*z*<1.96	-1.96<*z*<1.96	Razali and Wah (2011)
	Shapiro-Wilk	*p*>0.05	*p*>0.05	Razali and Wah (2011)
	W/S	a<*q*<b	a<*q*<b	Razali and Wah (2011)
Linearity	Deviation	*p*>0.05	*p*>0.05	Garson (2012)
	F-stat	*p*<0.05	*p*<0.05	Garson (2012)
Heteroscedasticity ($Var(U_t) \neq \boldsymbol{\delta_u^2}$)	Levene's test	$p > 0.05$	$p > 0.05$	Field (2013)
Autocorrelation ($cov(U_i, U_j) \neq 0$)	D-W	1.5<*d*<2.5	1<*d*<3	Field (2013)
Multi-collinearity ($cov(X_i,X_j) \neq 0$)	VIF	<10	<10	Field (2013)
	Tolerance value	>0.1	>0.1	Field (2013)
Model Misspecification $E(u\|x_1, x_2, ..., x_k)=0$	RESET	*F*-statistics insignificant (>0.05)	*F*-statistics insignificant (>0.05)	Wooldridge (2013)

3.10.9 Evaluation of the Models

The study used goodness of fit and goodness of path coefficient to establish how powerful the model represented the suggested statistical association. The study used adjusted coefficient of determination (Adjusted *R*-squared of the regression) and *F*-tests to evaluate

goodness of fit of the models. *R*-squared is the ratio of the explained variation compared to the total variation. Adjusted *R* squared was preferred over *R*-squared due to two inherent problems associated with *R*-squared. First, every time a predictor is added to a model, the *R*-squared increases, even if due to chance alone. That is, *R*-squared never decreases with increase in the number of predictors. Hence, a model with more terms may appear to have a better fit simply because it has more terms. Secondly, if a model has too many predictors, it begins to model the random noise in the data (over fitting) and produces misleadingly high *R*-squared values (Ogee, *et al*., 2013). Adjusted *R*-squared corrects these problems by comparing explanatory power of regression models that contain different numbers of predictors and increases only if the new term improves the model more than would be expected by chance and decreases when a predictor improves the model by less than expected by chance (Ogee, *et al*., 2013).

As such, the correlation coefficient provided a good estimate of the overall fit of the regression model, and adjusted R^2 provided a good gauge of the substantive size of the relationship (Field, 2013). Adjusted R^2 values closer to one show strong relationships while adjusted R^2 values nearing zero indicate poor fit of the ordinary least squares line (Wooldridge, 2013). That is, the greater the values of adjusted R^2 the more variance is explained and therefore, the better the model's prediction (Bäuml, 2014). Since there are no critical values for adjusted R^2, the use of *F* test based on analysis of variance was adopted for verification. *F*-ratio measured how much the model has improved the prediction of the outcome compared to the level of inaccuracy of the model (Field, 2013). *F*-ratio was calculated from R^2 using the formula;

$F = \frac{R^2}{(1-R^2)/(n-k)}$ Where n=sample size; k=degree of freedom (predictor variables).

$\boldsymbol{F}_{\textbf{calculated}}$ was then compared against $\boldsymbol{F}_{\textbf{critical}}$. Where $\boldsymbol{F}_{\textbf{calculated}}$ was greater than $\boldsymbol{F}_{\textbf{critical}}$, the null hypothesis was rejected with a conclusion that the explanation of dependent variable was better than was likely to have arisen by chance (Dougherty, 2011).

Goodness of path coefficients was measured through the ***t***-statistic, which was based on the ratio of explained variance against unexplained variance (error). It was used to test the null hypothesis that the value of beta (***β***) (gradient of the regression line) was zero. Where the value of beta was significant, confidence was gained in the hypothesis that the beta (***β***)-value was significantly different from zero and that the predictor variable contributed significantly in estimating values of the outcome. *T*-values for a two-tailed ***t***-test for each path ≥ 1.96 was considered significant at a confidence level of 95%.

3.11 Empirical Models

The regression analysis tested the effect of strategic measurement system design on performance of medium sized service firms in Kenya. In addition, the study evaluated the mediating and moderating effects of customer value and organizational context respectively on the relationship between strategic measurement system designs and performance of medium sized service firms in Kenya. Multiple regression model were used to regress breadth, depth, strategic alignment, and flexibility against performance (SCA) to test hypotheses 1, 2, 3, & 4.

$$Y=\alpha_{10} + B_{11}X_{11} + B_{12}X_{12} + B_{13}X_{13} + B_{14}X_{14} + \varepsilon \quad \text{..... (3.1)}$$

Where: Y is the Firm Performance

α_{10} is the alpha (constant)

$B_{11}, B_{12}, B_{13}, B_{14}$ are the beta coefficients for the independent variables

X_{11} is the breadth of the strategic measurement system

X_{12} is the depth of the strategic measurement system

X_{13} is the strategic alignment of the performance measurement system

X_{14} is the flexibility of the strategic measurement system

ε is the error term

This model was used to test the following hypotheses;

H_{01}: Breadth of strategic measurement system has no effect on performance of medium sized service firms in Kenya.

H_{02}: Depth of strategic measurement system has no effect on performance of medium sized service firms in Kenya.

H_{03}: Strategic alignment of performance measurement system has no effect on performance of medium sized service firms in Kenya.

H_{04}: Flexibility of strategic measurement system has no effect on performance of medium sized service firms in Kenya.

The study used causal path approach to investigate the mediating effect of customer value on the relationship between strategic measurement system and performance.

H_{05}: Customer value has no mediating effect on the relationship between the strategic measurement system design and performance of medium sized service firms in Kenya

Mediation explored causal paths represented by four regression equations. The first model was used to estimate the direct relationship between strategic measurement systems design (composite of breadth, depth, alignment, and flexibility) and performance.

$$\boldsymbol{Y=\alpha_{20} + B_{21}X_{21}+ \varepsilon} \text{ ..... } \textbf{(3.2)}$$

Where: $\boldsymbol{Y}$ is Firm performance

$\boldsymbol{\alpha_{20}}$ is alpha (constant)

$\boldsymbol{B_{21}}$ is unstandardized beta coefficients for strategic measurement system

$\mathbf{X_{21}}$ is strategic measurement system

$\boldsymbol{\varepsilon}$ is the error term

The second model was used to examine the relationship between performance and the mediator variable (customer value)

$$\boldsymbol{Y=\alpha_{30} + B_{31}X_{31}+ \varepsilon} \text{ ..... } \textbf{(3.3)}$$

Where: $\boldsymbol{Y}$ is Firm Performance

α_{30} is alpha (constant)

B_{31} is unstandardized beta coefficients for customer value

X_{31} is customer value

ε is the error term

The third model investigated the relationship between the mediator variable (customer value) and strategic measurement system

$$M=\alpha_{40} + B_{41}X_{41}+ \varepsilon \text{ ……..…….... (3.4)}$$

Where: M is mediating variable (customer value)

α_{40} is alpha (constant)

B_{41} is unstandardized beta coefficients for strategic measurement system

X_{31} is strategic measurement system

ε is the error term

The fourth model examined the mediated effect of X on Y through M.

$$Y=\alpha_{50} + B_{51}X_{51}+ B_{52}M_{52} + \varepsilon \text{ ……..……. (3.5)}$$

Where: Y is the Firm Performance

α_{50} is alpha (constant)

B_{51} is unstandardized beta coefficients for strategic measurement system

X_{51} is strategic measurement system

ε is the error term

Figure 3.1 shows the schematic model for mediation

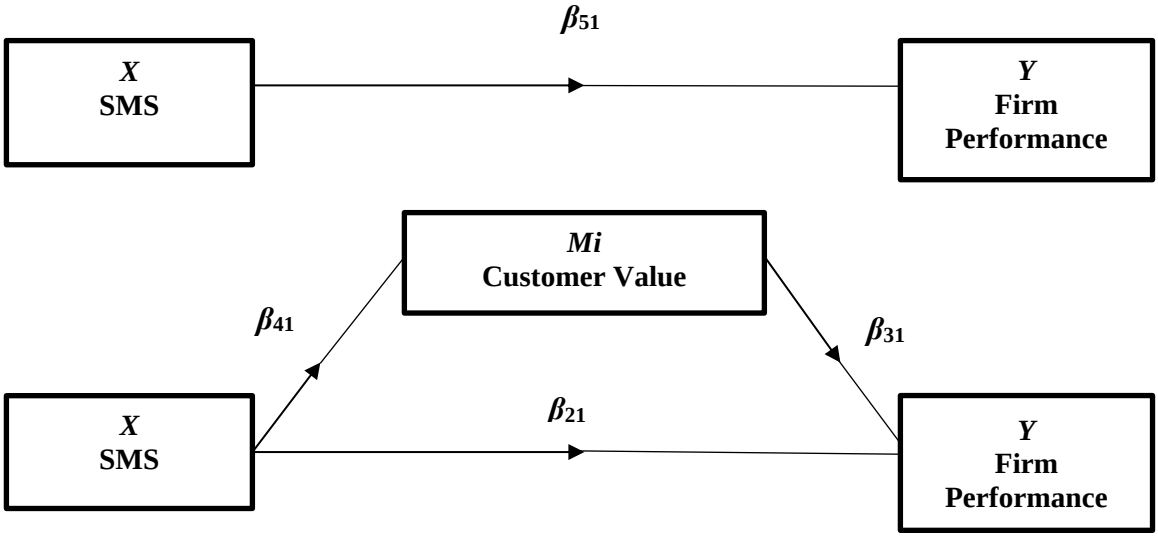


Figure 3.1: Mediation Schematic Model

In Figure 3.1, B_{51} is the total effect of X on Y, B_{21} is the direct effect of X on Y adjusted for M, B_{31} is the effect of M on Y adjusted for X, and B_{41} is the effect of X on M (Awang, 2015).

Table 3.5: ***Mediation Decision Making Criteria***

Condition	Coefficient	Sig	Conclusion
Complete mediation	B_{21}	$p>.05$	Insignificant
	B_{31}	$p<.05$	Significant
	B_{41}	$p<.05$	Significant
Partial mediation	B_{21}	$p<.05$	Significant
	B_{31}	$p<.05$	Significant
	B_{41}	$p<.05$	Significant
	And $\lvert B_{31*} B_{41} \rvert > \lvert B_{21} \rvert$		
No mediation	*Either* B_{31} or B_{41}	$p>.05$	Insignificant
	Both B_{31} and B_{41}	$p>.05$	Insignificant

The study evaluated the moderating effect of organizational context. Moderation was tested against the indirect and direct paths. In addition, moderation effects of firm size (number of employees) and organizational structure (vertical versus horizontal structures) were tested separately before their combined effect was evaluated. Mean centering was used to calculate the interaction terms. Schematic model is as illustrated in Figure 3.2.

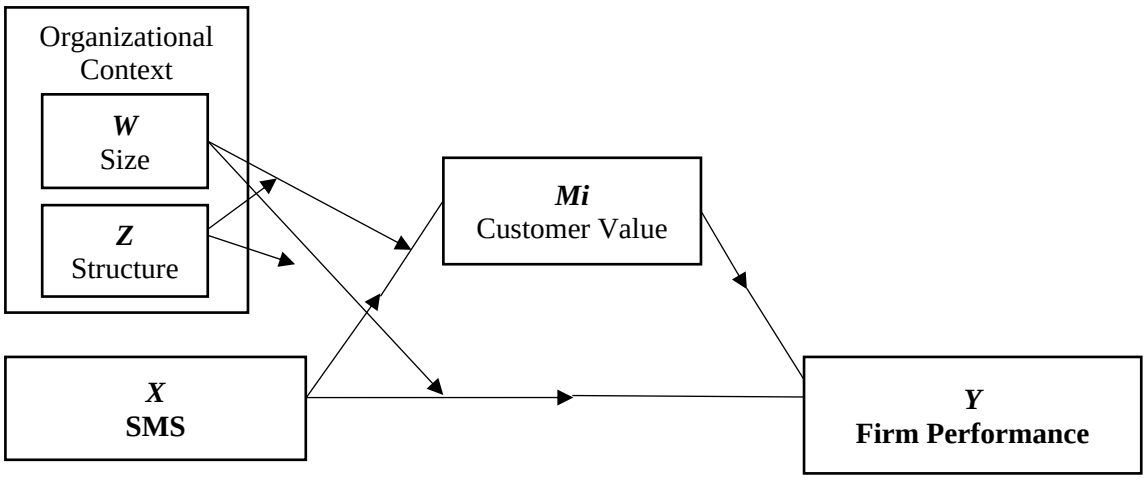


Figure 3.2: Moderation Effect

H_{06a}: Organizational context does not have a moderating effect on the relationship between strategic measurement system and customer value.

$$Customer\ Value = \alpha_{60} + B_{61}X_{61} + B_{62}M_{62} + B_{63}X_{61}M_{62} + \varepsilon \quad \text{(3.6)}$$

Where: α_{60} is alpha (constant)

B_{61} is beta coefficients for SMS

B_{62} is beta coefficient for moderating factor (firm size)

B_{63} is beta coefficient for interaction between SMS and firm size

ε is the error term

$$Customer\ Value = \alpha_{70} + B_{71}X_{71} + B_{72}M_{72} + B_{73}X_{71}M_{72} + \varepsilon \quad \text{(3.7)}$$

Where: α_{70} is alpha (constant)

B_{71} is beta coefficients for SMS

B_{72} is beta coefficient for moderating factor (organizational structure)

B_{73} is beta coefficient for interaction between SMS and structure

ε is the error term

$$Customer\ Value = \alpha_{90} + B_{91}X_{91} + B_{92}M_{92} + B_{93}Z_{93} + B_{94}X_{91}M_{92} + B_{95}X_{91}Z_{93} + B_{96}M_{92}Z_{93} + B_{97}X_{91}M_{92}Z_{93} + \varepsilon \quad \text{(3.9)}$$

Where: α_{90} is alpha (constant)

B_{91} is beta coefficients for SMS

B_{92} is beta coefficient for moderating factor (firm size)

B_{93} is beta coefficient for moderating factor (structure)

B_{94} is beta coefficient for interaction term (SMS*firm size)

B_{95} is beta coefficient for interaction term (SMS*structure)

B_{96} is beta coefficient for interaction term (firm size*structure)

B_{97} is beta coefficient for interaction term (SMS*firm size*structure)

ε is the error term

H_{06b}: Organizational context does not have a moderating effect on the direct relationship between SMS and performance.

$$\textit{Firm Performance} = \alpha_{100} + B_{101}X_{101} + B_{102}M_{102} + B_{103}X_{101}M_{102} + \varepsilon \ldots\ldots\ldots\ldots (3.10)$$

Where: α_{100} is alpha (constant)

B_{101} is beta coefficients for SMS

B_{102} is beta coefficient for moderating factor (firm size)

B_{103} is beta coefficient for interaction between SMS and firm size

ε is the error term

$$\textit{Firm Performance} = \alpha_{110} + B_{111}X_{111} + B_{112}M_{112} + B_{113}X_{111}M_{112} + \varepsilon \ldots\ldots\ldots\ldots (3.11)$$

Where: α_{110} is alpha (constant)

B_{111} is beta coefficients for SMS

B_{112} is beta coefficient for moderating factor (organizational structure)

B_{112} is beta coefficient for interaction between SMS and structure

ε is the error term

$$\textit{Firm Performance} = \alpha_{120} + B_{121}X_{121} + B_{122}M_{122} + B_{123}Z_{123} + B_{124}X_{121}M_{122} + B_{125}X_{121}Z_{123} + B_{126}M_{122}Z_{123} + B_{127}X_{121}M_{122}Z_{123} + \varepsilon \ldots\ldots\ldots\ldots (3.12)$$

Where: α_{90} is alpha (constant)

B_{121} is beta coefficients for SMS

B_{122} is beta coefficient for moderating factor (firm size)

B_{123} is beta coefficient for moderating factor (structure)

B_{124} is beta coefficient for interaction terms (SMS*firm size)

B_{125} is beta coefficient for interaction terms (SMS*structure)

B_{126} is beta coefficient for interaction terms (firm size*structure)

B_{127} is beta coefficient for interaction terms (SMS*firm size*structure)

ε is the error term

H_{06c}: Organizational context does not have a moderating effect on the mediated relationship between SMS and firm performance.

$$\textit{Firm Performance} = \alpha_{130} + B_{131}X_{131} + B_{132}M_{132} + B_{133}Z_{133} + B_{134}X_{131}Z_{133} + \varepsilon \ldots \textbf{(3.13)}$$

Where: α_{130} is alpha (constant)

B_{131} is beta coefficients for SMS

B_{132} is beta coefficient for mediating factor (customer value)

B_{133} is beta coefficient for moderating factor (firm size)

B_{134} is beta coefficient for interaction terms (SMS*size)

ε is the error term

$$\textit{Firm Performance} = \alpha_{140} + B_{141}X_{141} + B_{142}M_{142} + B_{143}Z_{143} + B_{144}X_{141}Z_{143} + \varepsilon \ldots \textbf{(3.14)}$$

Where: α_{140} is alpha (constant)

B_{141} is beta coefficients for SMS

B_{142} is beta coefficient for mediating factor (customer value)

B_{143} is beta coefficient for moderating factor (structure)

B_{134} is beta coefficient for interaction terms (SMS*structure)

ε is the error term

$$\textit{Firm Performance} = \alpha_{150} + B_{151}X_{151} + B_{152}M_{152} + B_{153}Z_{153} + B_{154}W_{154} +$$

$$B_{155}X_{151}Z_{153} + B_{156}X_{151}W_{154} + B_{157}Z_{153}W_{154} + B_{158}X_{151}Z_{153}W_{154} + \varepsilon \ldots\ldots\ldots \textbf{(3.15)}$$

Where: α_{150} is alpha (constant)

B_{151} is beta coefficients for SMS

B_{152} is beta coefficient for mediating factor (customer value)

$\boldsymbol{B_{153}}$ is beta coefficient for moderating factor (size)

$\boldsymbol{B_{154}}$ is beta coefficient for moderating factor (structure)

$\boldsymbol{B_{155}}$ is beta coefficient for interaction terms (SMS*firm size)

$\boldsymbol{B_{156}}$ is beta coefficient for interaction terms (SMS*structure)

$\boldsymbol{B_{157}}$ is beta coefficient for interaction terms (size*structure)

$\boldsymbol{B_{158}}$ is beta coefficient for interaction terms (SMS*size*structure)

$\boldsymbol{\varepsilon}$ is the error term

Table 3.6: *Moderation Decision-Making Criteria*

General model: $Y = \alpha_0 + B_1X_1 + B_2M_2 + B_3X*M + \varepsilon$

Condition	Coefficient	Sig
No overall effect to moderate	B_1	p<.05
Moderating variable is an explanatory variable	B_1	p<.05
	B_2	p>.05
Moderating variable has a moderating effect	B_1	p<.05
	B_2	p<.05
	B_3	p<.05

Overall condition for moderation

1. Coefficient B_3 differs significantly from zero
2. The increment in the squared multiple correlation (ΔR^2) given by the interaction is significantly greater than zero

Note: *Y (dependent variable); X (Independent variable); M (Moderating Variable); X*M (Interaction between independent and moderating variables); ε (Error term)*

Source: Kinyua (2015); Whisman and McClelland (2005)

3.12 Summary of Research Objectives, Hypotheses, and Analytical Methods

Table 3.3 shows the summary of research objectives, hypotheses, models, data analysis technique and interpretation methods.

Table 3.7*: Summary of Research Objectives, Hypotheses and Analytical Testing*

Objective	Hypothesis	Data Analysis Technique	Interpretation
1. To determine the effect of breadth of strategic measurement system on performance of medium sized service firms in Kenya.	H_{01}: Breadth of strategic measurement system has no effect on performance of medium sized service firms in Kenya.	Multiple Linear Regression $Y=\alpha_{10} + B_{11}X_{11} + B_{12}X_{12} + B_{13}X_{13} + B_{14}X_{14} + \varepsilon$…(3.1) Where: Y = Firm performance α_{10} = alpha $B_{11}, B_{12}, B_{13}, B_{14}$ for breadth, depth, alignment and flexibility respectively X_{11} =breadth X_{12} =depth X_{13} =alignment X_{14} =flexibility ε is the error term	R^2, F-ratio, $p<.05$); If t value for the coefficient of breadth (B_{11}) is significant ($p<.05$), then breadth of SMS has a significant effect on firm performance
2. To establish the effect of depth of strategic measurement system on performance of medium sized service firms in Kenya.	H_{02}: Depth of strategic measurement system has no effect on performance of medium sized service firms in Kenya.	Multiple Linear Regression $Y=\alpha_{10} + B_{11}X_{11} + B_{12}X_{12} + B_{13}X_{13} + B_{14}X_{14} + \varepsilon$…(3.1) Where: Y = Firm performance α_{10} = alpha $B_{11}, B_{12}, B_{13}, B_{14}$ for breadth, depth, alignment and flexibility respectively X_{11} =breadth X_{12} =depth X_{13} =alignment X_{14} =flexibility ε is the error term	R^2, F-ratio, $p<.05$); If t value for the coefficient of depth (B_{11}) is significant ($p<0.05$), then depth of SMS has a significant effect on firm performance
3. To investigate the effect of strategic alignment of performance measurement system on performance of medium sized service firms in Kenya.	H_{03}: Strategic alignment of performance measurement system has no effect on performance of medium sized service firms in Kenya.	Multiple Linear Regression $Y=\alpha_{10} + B_{11}X_{11} + B_{12}X_{12} + B_{13}X_{13} + B_{14}X_{14} + \varepsilon$…(3.1) Where: Y = Firm performance α_{10} = alpha $B_{11}, B_{12}, B_{13}, B_{14}$ for breadth, depth, alignment and flexibility respectively X_{11} =breadth X_{12} =depth X_{13} =alignment X_{14} =flexibility ε is the error term	R^2, F-ratio, $p<.05$); If t value for the coefficient of alignment (B_{11}) is significant ($p<0.05$), then strategic alignment of SMS has a significant effect on firm performance
4. To examine the effect of flexibility of strategic measurement system on performance of medium sized	H_{04}: Flexibility of strategic measurement system has no effect on performance of medium sized	Multiple Linear Regression $Y=\alpha_{10} + B_{11}X_{11} + B_{12}X_{12} + B_{13}X_{13} + B_{14}X_{14} + \varepsilon$…(3.1) Where: Y = Firm performance α_{10} = alpha	R^2, F-ratio, $p<.05$); If t value for the coefficient of flexibility (B_{11}) is significant ($p<0.05$), then flexibility of SMS has a significant

Objective	Hypothesis	Data Analysis Technique	Interpretation
service firms in Kenya.	service firms in Kenya.	B_{11}, B_{12}, B_{13}, B_{14} for breadth, depth, alignment and flexibility respectively X_{11} =breadth X_{12} =depth X_{13} =alignment X_{14} =flexibility ε is the error term	effect on firm performance
5. To establish the mediating effect of customer value on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya	H_{05}: Customer value has no mediating effect on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya.	$Y=\alpha_{50} + B_{51}X_{51} + B_{52}M_{52} + \varepsilon...(3.5)$ Where: Y= Firm performance α_{50} =alpha (constant) B_{51} = beta for SMS X_{51} =SMS ε is the error term	Complete mediation: Direct of effect X on Y *(a)* is insignificant, effect of M on Y *(b)* is significant & Effect of X on M is significant Partial mediation a=significant, b=significant c=significant $\lvert b*c \rvert > \lvert a \rvert$ No mediation Either b or c; Both b & c are insignificant
6. To establish the moderating effects of organizational context on the relationship between the SMS and performance of medium sized service firms in Kenya.	H_{06}: Organizational context has no moderating effect on the relationship between the SMS and performance of medium sized service firms in Kenya.	$Y= \alpha_0 + B_1X_1 + B_2M_2 + B_3X*M + \varepsilon$ Where: Y=dependent variable X=Independent variable M=Moderating Variable X*M=Interaction between independent and moderating variables ε is the error term	Moderation occurs when: 1. *B*3 differs significantly from zero 2. The increment in the squared multiple correlation (ΔR^2) given by the interaction is significantly greater than zero

3.13 Operationalization of the Variables (Constructs)

Operationalization is the process of defining the relationships between each construct and its assigned observed indicators (Beaumont, 2012). The study sought to establish the effect of strategic measurement system design on performance of medium sized service firms in Kenya. This relationship was examined through a set of constructs. Each construct was estimated by averaging a set of indicators identified to load on that specific construct. The study was operationalized through two levels of constructs. First-order and second-order constructs. The first order constructs were measured directly from the

aggregate scores of a set of indicators. However, the second order constructs were measured as an aggregate of several first order constructs (Hair, Black, Babin, & Anderson, 2010).

As shown in the conceptual model (Figure 3.3), SMS design was built on four first order constructs of breadth, depth, alignment and flexibility. Determinants of performance (customer value) was measured as an aggregate of service quality, service flexibility, resource utilization (efficiency) and service innovation, while firm performance was measured as an aggregate of net profit and sustainable competitive advantages indicators. Use of second order constructs was preferred since they are suitable for testing summarized theoretical concepts without losing the ability to distinguish the effects of their underlying first-order constructs and indicators (Bäuml, 2014).

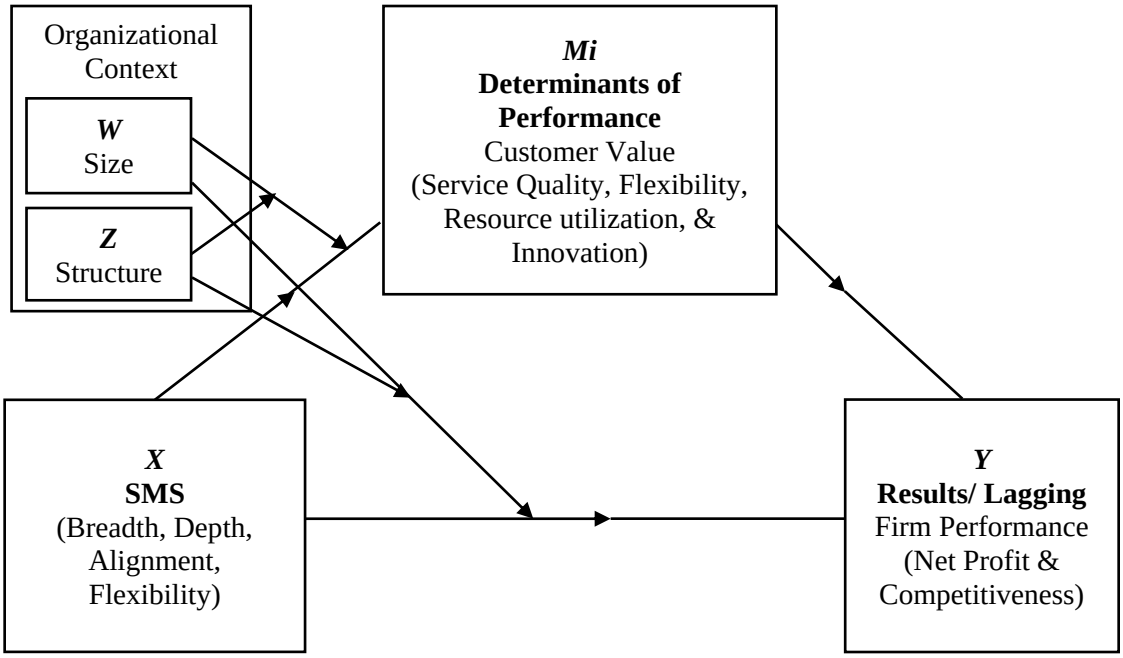
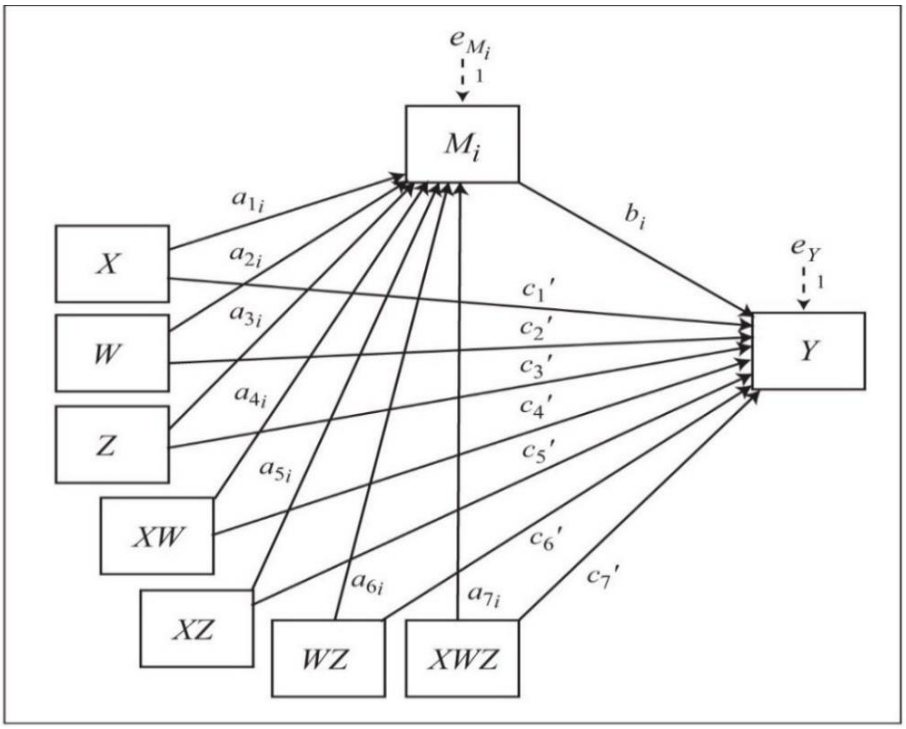


Figure 3.3: Diagrammatical Presentation of the Conceptual Model

Figure 3.3 shows that the model had 10 first order constructs. To estimate the scores for each of the 10 first order constructs, mean indices were calculated. Averaging scores of test items in each first order construct formed the indices. Use of average was preferred

since the items were measured using the same scale and their validities and reliabilities were established through Exploratory Factor Analysis (Gefen *et al*., 2000). Statistical diagram for the conceptual framework was adopted from Hayes (2013), moderated-mediation model 12 and is presented in Figure 3.4.



Conditional indirect effect of X on Y through $M_i = (a_{1i} + a_{4i}W + a_{5i}Z + a_{7i}WZ)\, b_i$
Conditional direct effect of X on $Y = c_1' + c_4'W + c_5'Z + c_7'WZ$

Figure 3.4: Statistical Diagram for the Conceptual Framework
Source: Hayes (2013)

The statistical diagram in Figure 3.4 presents the various paths for the interactions of the study variables. It shows both the direct and indirect (mediated) relationship between the SMS and firm performance. Unitary effects of either the size or structure as well as the combined effect of size and structure (organizational context) were assigned as moderators. The statistical diagram has 15 paths whose coefficients were used for hypotheses testing. Based on literature review, each of the constructs was operationalized in Table 3.8.

Table 3.8: ***Operationalization of Variables***

Variable	Items measured/Indicators & Dimensions	Measure
Breadth of SMS	1. Quality of suppliers' services (External)	5-point Likert scale
	2. Quality of service distribution (External)	5-point Likert scale
	3. Value of service offered (External)	5-point Likert scale
	4. Customer loyalty (External)	5-point Likert scale
	5. Service price competitiveness (External)	5-point Likert scale
	6. Company brand image (External)	5-point Likert scale
	7. Employee turnover ratio (Internal)	5-point Likert scale
	8. Employee needs assessment (Internal)	5-point Likert scale
	9. Customer-repurchase frequency (External)	5-point Likert scale
	10. Company impact assessment (External)	5-point Likert scale
	11. Equipment effectiveness (Internal)	5-point Likert scale
	12. Company Profitability (Internal)	5-point Likert scale
	13. Market investigation (External)	5-point Likert scale
	14. Conformance to legal requirements (external)	5-point Likert scale
	15. Level of technology adoption (Internal)	5-point Likert scale
	16. Service efficiency (Internal)	5-point Likert scale
	17. Employee competency levels (Internal)	5-point Likert scale
	18. Work place quality (Internal)	5-point Likert scale
Depth of SMS	1. Clearly define operational objectives	5-point Likert scale
	2. Measure all objectives in all departments	5-point Likert scale
	3. Only measure general business performance	5-point Likert scale
	4. Measure performance of different departments	5-point Likert scale
	5. Focus on practical implementation of the performance system	5-point Likert scale
	6. Concentrate on important operational objectives	5-point Likert scale
	7. Measures are sufficiently disaggregated	5-point Likert scale
	8. Exhaustively measure operational objectives	5-point Likert scale
	9. Business level objectives adequately measured	5-point Likert scale
	10. Successfulness of corporate strategy is evaluated	5-point Likert scale
	11. Measures for evaluation of fulfilling strategic goals	5-point Likert scale
	12. Measures are sufficiently cascaded	5-point Likert scale
	13. Concentrate only on important corporate objectives	5-point Likert scale
Strategic Alignment of SMS	1. Derived from organizational strategic priorities	5-point Likert scale
	2. Has full top management support	5-point Likert scale
	3. Link operations to strategic organizational priorities	5-point Likert scale
	4. Connected with main focus of long-term objectives	5-point Likert scale
	5. Encourage employees to focus on important activities	5-point Likert scale
	6. Provide integration of organizational activities	5-point Likert scale
	7. Has clearly define strategic objectives	5-point Likert scale
Flexibility of SMS	1. Continuously monitoring internal development	5-point Likert scale
	2. Continuously monitoring external development	5-point Likert scale
	3. Institute changes in the systems	5-point Likert scale
	4. Review objectives, targets, standards and assumptions	5-point Likert scale
	5. Review measures	5-point Likert scale
	6. Measure and trigger rapid response to customer demands	5-point Likert scale
	7. Measure and stimulate generation of new ways for managing tasks	5-point Likert scale
	8. Measure and provide information for alternatives	5-point Likert scale
	1. Targets are met by staff (Reliability)	5-point Likert scale

Variable	Items measured/Indicators & Dimensions	Measure
Customer value (Mediator)	2. Accurate records kept by staff (Reliability)	5-point Likert scale
	3. Staff work well without supervision (Responsiveness)*	5-point Likert scale
	4. Staff communicate well to clients (Responsiveness)*	5-point Likert scale
	5. Prompt service delivery (Responsiveness)*	5-point Likert scale
	6. Services are affordable (Responsiveness)*	5-point Likert scale
	7. Service available at all times (Availability)	5-point Likert scale
	8. Limited customer complaints (Availability)	5-point Likert scale
	9. Service delivery is variable (Flexibility)*	5-point Likert scale
	10. Service order wait period is variable (Availability)*	5-point Likert scale
	11. Variable service specification (Flexibility)*	5-point Likert scale
	12. Frequent service procedure upgrade (Flexibility)	5-point Likert scale
	13. Innovative employees (Flexibility)	5-point Likert scale

Table 3.9 indicates the operationalization of the moderator variable.

Table 3.9: ***Operationalization of Variables (Moderator)***

Variable	Items measured/Indicators & Dimensions	Measure
Organizational Size	1. Number of employees	Count
	2. Number of branches	Count
	3. Financial Investment	Count
Organizational structure	1. Method of organizing tasks	Ordinal scale
	2. Number of management levels	Count
	3. Type of communication channel	Ordinal scale
	4. Level of employee inclusion	5-point Likert scale

3.14 Ethical Considerations

Due to increased societal expectations of greater accountability when conducting research, there has been an increase in the level of attention on ethical conduct of researchers. Key cornerstones for ethical research include informed consent, reduced risk of harm, anonymity, confidentiality and avoiding conflict of interest (Zegwaard, 2018). Further, attention to ethical concerns including choice about what to study and how to study it through to analysis and dissemination of findings is important for social researchers, who by their professional discipline, code of ethics, or research foci are expected to demonstrate particular sensitivity to vulnerable populations, issues of social justice, conflicts of interest, and respect for dignity and privacy (Sobočan, Bertotti, & Strom-Gottfried, 2019).

In this study, ethical considerations were ensured through a number of ways. First, the data collected from the respondents were held with utmost confidentiality. No personal

information or information directly linked to a specific firm was used in publication. Instead, averages for the entire industry were reported. Moreover, information whose publication would disadvantage the business firms or individuals in anyway, were not shared with the public. Secondly, consent from the respondents was sought before the respondents were engaged in the study. The respondents were made aware of the main objective of the study, why they were selected and how the study findings would be beneficial to them before seeking for consent. This was critical in creating an atmosphere of trust, confidence and in ensuring that the respondents were as truthful and helpful as possible.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

The study findings and discussions are presented in this chapter. Findings on the study response rate, validity and reliability of the constructs, descriptive statistics, inferential statistics and qualitative data analysis are presented. These sections are organized in line with the study objectives and the discussions presented in line with theoretical and empirical literature.

4.2 Response Rate

Three hundred and twenty-three questionnaires were distributed for completion by chief executive officers of the sampled firms between April 25, 2018 and August 30, 2018. Duly filled questionnaires were received from 232 firms. However, 34 were from firms with less than 50 employees and 19 from firms with more than 100 employees. Hence, 53 questionnaires were excluded. The response rate is outlined in Table 4.1.

Table 4.1: ***Study Response Rate***

Category	Sub Category	Population	Sample Size	Response	% Response
Transport &	Transport	181	29	14	48
Warehousing	Warehousing	223	35	15	43
Tourism & Hospitality	Hotels	226	36	36	100
	Tourism	559	88	51	58
	Eateries	445	70	24	34
ICT & Media	ICT	38	6	2	33
	Media	18	3	2	67
Financial & Insurance	Financial	167	26	17	65
	Insurance	13	2	1	50
Professional services	-	48	8	4	50
Education	-	39	6	4	67
Health	-	35	6	4	67
Arts & Entertainment	-	47	8	5	63
Total		**2,039**	**323**	**179**	**55**

Table 4.1 shows that the study achieved 55% response rate. This response rate was considered satisfactory. More the 50% response rate is generally considered adequate for survey data analysis and reporting (Mugenda, & Mugenda, 2003).

4.3 Validities and Reliabilities of the Constructs

4.3.1 Test for Sample Adequacy

Kaiser-Meyer-Olkin (KMO) and Bartletts Tests were used to evaluate data adequacy. KMO values between 0.5 and 0.7 are considered low but acceptable, 0.7 and 0.8 are good, 0.8 and 0.9 are great and values above 0.9 are superb (Field, 2013). Data in Table 4.2 was considered adequate for conducting exploratory factor analysis (EFA) given that KMO values > 0.5 and significant Bartletts test of Sphericity significant ($p < 0.05$) (Field, 2013).

Table 4.2: ***KMO and Bartlett's Test[a]***

Scale	Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
		Approx. Chi-Square	df	Sig.
Breadth of SMS	.822	969.801	153	.000
Depth of SMS	.659	731.264	78	.000
Alignment of SMS	.728	187.472	21	.000
Flexibility of SMS	.707	214.859	10	.000
Firm Performance	.711	880.434	28	.000

4.3.2 Validity and Reliability of the Breadth's Construct

EFA was run on 18 questions defining the breadth of SPMS to establish convergent and discriminant validities. The matrix results are shown in Table 4.3.

Table 4.3: ***Pattern Matrix[a] for Breadth of SMS***

Measured Indicators	**Component**						**Communalities**
	1	**2**	**3**	**4**	**5**	6	
Quality of suppliers' services		.854					.768
Quality of service distribution		.800					.751
Customer loyalty				.653			.711
Service price competitiveness				.828			.734
Employee turnover ratio						.875	.695
Employee needs assessment						.672	.517
Customer-repurchase frequency		.689					.657
Equipment effectiveness			.835				.739
Company profitability					.574		.769
Conformance to legal requirements					.899		.767
Employee competency level	.925						.699
Work place quality	.749						.680
Eigenvalue	5.358	1.719	1.396	1.139	1.037	1.007	
% of Variance	29.7	9.6	7.7	6.3	5.8	5.6	
Average Loading	.837	.781	.835	.741	.734	.774	
Average Variance Extracted (AVE)	.708	.592	.722	.554	.568	.608	
Square root of AVE	.841	.769	.850	.744	.754	.780	
Composite Reliability (CR)	.828	.811	.722	.709	.716	.753	
Cronbach's Alpha/Internal reliability	.771						

Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization. a. Rotation converged in 16 iterations.

The factor analysis results in Table 4.3 revealed six sub constructs under the breadth's construct that had eigenvalues greater than one. The sub constructs explained 29.7%, 9.5%, 7.7%, 6.3%, 5.8% and 5.67% of total variance of the construct respectively. The six sub constructs explained 64.7% of the total variance in the construct. Table 4.3 also shows communalities >0.6 indicating that larger amount of the construct was explained by the extracted factors. According to Field (2013), generally, with a samples size less than 100, communalities >0.6 are considered adequate. However, for sample sizes between 100 and 200, all communalities are expected to be above 0.5. Table 4.3 further confirmed that indicator loadings of the items on the six sub constructs were > 0.5. Strong loadings of Internal process measurement indicators occurred on Component 1, External process measurement indicators on Component 2, Customer perspective measurement indicators on Component 4, Actors' measurement indicators on Component 5, and Situation measurement indicators on Component 6. These findings are reflective of the Flexible Strategy Game Card Model. The model measures performance from four perspectives of Actors, Situation, Process, and Customers (Sushil, 2010).

Findings of indicator loadings > 0.5, AVE values > 0.50 shown in Table 4.3 were above the 0.5 cut-off showing that convergent validity was established for the six (6) sub-constructs. According to Hair, *et al*. (2010), indicator loadings and AVE should be greater than 0.50 for convergent validity to be confirmed. The results confirm that more than 50% of the variance in each indicator of the sub-constructs were attributed to their specific sub-constructs. Further, the average loadings on the six sub-constructs are greater than AVEs of the same sub-construct confirming convergent validities of the sub-constructs (Hair, *et al*., 2010). Correlation between the sub constructs was then compared against AVEs to determine discriminant validity. Correlations are shown in Table 4.4.

Table 4.4: ***Component Correlation Matrix for Breadth of SMS***

Component	1	2	3	4	5	6
1	1.000					
2	.337	1.000				
3	.260	.314	1.000			
4	.323	.364	.201	1.000		
5	.364	.199	.214	.008	1.000	
6	**.386**	.272	.112	.281	.148	1.000

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.

Table 4.4 shows that the square of the highest correlation between the sub-constructs is 0.386^2 (or 0.152). This is lower than the square root of all the AVEs (>0.7) for the six sub-constructs. This shows that the variance extracted between the sub-constructs are greater than the correlations between the sub-constructs. That is, the shared variance between indicators in each sub-construct is higher than the variance with other latent variables showing that the sub-constructs are truly distinct from each other (Hair, *et al*., 2010). Hence, discriminant validities for the six sub constructs was established. Indicator and construct/sub construct reliabilities were evaluated through Cronbach's alpha. Table 4.5 illustrates overall scale reliability and indicator reliabilities.

Table 4.5: ***Overall Reliability Statistics for Breadth of SMS***

Overall Reliability: Cronbach's Alpha = 0.77; N=12 (after extraction)		
Measured Indicators	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Quality of suppliers' services	.507	.743
Quality of service distribution	.474	.747
Customer loyalty	.497	.745
Service price competitiveness	.497	.745
Employee turnover ratio	.284	.770
Employee needs assessment	.327	.763
Customer-repurchase frequency	.379	.759
Equipment effectiveness	.372	.759
Company profitability	.329	.763
Conformance to legal requirements	.219	.774
Employee competency level	.437	.752
Work place quality	.579	.735

From Table 4.5, the overall Cronbach's Alpha value of 0.77 meets the minimum requirement for a good composite reliability (> .07) as provided by Bäuml (2014), Field (2013) and Hair, *et al*. (2010). This confirmed construct reliability for the overall construct (Breadth). According to Table 4.5, deleting any of the indicators from the scale weakened

the overall reliability score, thus indicator reliability was achieved for all the test indicators (items).

4.3.3 Validity and Reliability of the Depth's Construct

Exploratory factor analysis was run on the nine questions, which measured the depth of the strategic measurement system to determine convergent and discriminant validities. Pattern matrix results showing how indicators coalesced around specific dimensions of depth of SMS is presented in Table 4.6.

Table 4.6: ***Pattern Matrix for Depth of SMS***

Measured Indicators	**Components**		**Communalities**
	1	2	
Clearly define operational objectives	.839		.658
Measure all objectives in all departments	.798		.617
Only measure general business performance		.517	.568
Measure performance of different departments	.605		.508
Focus on practical implementation of the measures	.731		.532
Concentrate on important operational objectives	.803		.644
Measures are sufficiently disaggregated	.984*		.892
Exhaustively measure operational objectives	.679		.868
Business level objectives are adequately measured		.905	.799
Successfulness of corporate strategy is evaluated		.932	.799
Measures for evaluation of fulfilling strategic goals		.626	.683
Measures are sufficiently cascaded	.844*		.757
Concentrate only on important corporate objectives		.728	.806
Eigenvalue	2.131	1.082	
% of Variance	35.5	18.0	
Average Loading	.7853	.7416	
Average Variance Extracted (AVE)	.6284	.5753	
Square root of AVE	.7927	.8662	
Composite Reliability (CR)	.9299		
Cronbach's Alpha/Internal reliability			

Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization. a. Rotation converged in 3 iterations. *Deleted

The factor analysis results in Table 4.6 revealed two sub constructs of depth of SMS, which had eigenvalues greater than one. The two sub constructs explained 35.5% and 18.0% of total variance of the construct respectively. The two sub constructs explained 53.5% of the total variance in the construct. Promax rotation confirmed loadings on two sub constructs with loadings > 0.5.

Strong loadings for indicators measuring short term objectives (operational and functional levels) occurred on Component 1 while strong loadings for indicators measuring long term objectives (business and corporate levels) occurred on Component 2. Indicator loadings > 0.5 and the average variance extracted (AVE) values > 0.50 in the pattern matrix were above the 0.5 cut off. Further, the average loadings on the two sub-constructs were greater than the AVEs of the same sub-constructs, showing that convergent validity was established for the two sub-constructs (Hair, *et al*., 2010).

Discriminant validity was tested by comparing values for AVE and correlation values between the two sub-constructs of the depth of SPMS. The results are in Table 4.7.

Table 4.7: ***Component Correlation Matrix for Depth of SMS***

Component	1	2
1	1.000	
2	**.293**	1.000

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.

Table 4.7 shows that the square of the highest correlation between the sub-constructs is 0.293^2 (or 0.085). This is lower than the square root of the AVEs (>0.7) for the two sub-constructs. This shows that the variance extracted between the sub-constructs is greater than the correlations between the sub-constructs (Square root of AVE > Highest correlation squared) confirming discriminant validity for the two sub constructs (Hair, *et al*., 2010). Table 4.8 is a presentation of the overall and indicator reliabilities for the depth construct and its indicators.

Table 4.8: ***Overall Reliability Statistics for Depth of SMS***

Overall Reliability: Cronbach's Alpha = 0.735; N=11		
Measured Indicators	**Corrected Item-Total Correlation**	**Cronbach's Alpha if Item Deleted**
Clearly define operational objectives	.656	.683
Measure all objectives in all departments	.605	.691
Only measure general business performance	.470	.705
Measure performance of different departments	.542	.700
Focus on practical implementation of the measures	.548	.698
Concentrate on important operational objectives	.627	.693
Exhaustively measure operational objectives	.669	.669
Business level objectives are adequately measured	.096	.750
Successfulness of corporate strategy is evaluated	.023	.775
Measures for evaluation of fulfilling strategic goals	.038	.780
Concentrate only on important corporate objectives	.433	.709

Table 4.8 shows an overall Cronbach's Alpha value of 0.735 after deleting items number seven and twelve. The Cronbach's Alpha was (0.735) was within the acceptable range (> 0.6) as provided by Bäuml (2014), Field (2013) and Hair, *et al*. (2010). This confirmed construct reliability of the overall construct (Depth of SMS).

The two items deleted substantially weakened the overall reliability. The remain items were thus considered to positively contribute to the overall reliability of the construct. This confirmed indicator reliability for all the test items (indicators).

4.3.4 Validity and Reliability of Alignment's Construct

Exploratory factor analysis was run on seven questions, which measured strategic alignment of the performance measurement system to determine convergent and discriminant validities. Factor analysis results are illustrated in Table 4.9.

Table 4.9: ***Pattern Matrix for Alignment of Measurement System***

Measured Indicators	Component		
	1	2	Communalities
Derived from organizational strategic priorities	.645		.375
Has full top management support	.862		.703
Link operations to strategic organizational priorities		.532	.439
Connect with the main focus of long-term objectives		.674	.510
Encourage employees to focus on important activities	.529		.309
Provide integration of organizational activities		.902	.697
Has clearly defined strategic objectives	.512		.520
Eigenvalue	2.522	1.030	
% of Variance	36.0%	14.7%	
Average Loading	.637	.702	
Average Variance Extracted (AVE)	.425	.516	
Square root of AVE	.652	.719	
Composite Reliability (CR)	.738	.754	
Cronbach's Alpha/Internal reliability	.700		

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

The factor analysis results in Table 4.9 revealed two sub constructs of SMS alignment that had eigenvalues greater than one. The sub constructs explained 36.0% and 14.7% of total variance of the construct respectively. The two sub constructs explained 50.7% of the total variance in the construct. Promax rotation results confirmed loadings on two sub constructs with loadings > 0.5. Strong loadings for indicators measuring the employees and leadership alignment occurred on Component 1 while strong loadings for indicators

measuring processes and management matrices alignment occurred on Component 2. Table 4.9 also shows that all the indicator loadings were > 0.5, while AVE for component 1 of 0.43 was just below the set minimum of 0.5 (Hair, *et al*., 2010). However, since, the average loadings on the two sub-constructs were greater than the AVEs of the same sub-constructs, convergent validities were confirmed.

Analysis for discriminant validity was tested by comparing values for average variance extracted and correlation values between the two sub constructs of the strategic alignment of performance measurement system. The results are in Table 4.10.

Table 4.10: ***Component Correlation Matrix for Alignment***

Component	1	2
1	1.000	
2	**.400**	1.000

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.

Table 4.10 shows that the square of the highest correlation between the sub-constructs is 0.400^2 (or 0.16). This was lower than the square root of the AVEs (>0.7) for the two sub-constructs. This shows that the variance extracted between the two sub-constructs was greater than the correlations between the sub-constructs (Square root of AVE > Highest correlation squared). That is, the shared variance between the sub-constructs and their indicators was higher than the variance with other latent variables. This confirmed discriminant validity for the two sub constructs (Hair, *et al*., 2010).

Table 4.11 is a presentation of the overall and indicator reliabilities for the strategic alignment construct and its indicators.

Table 4.11: ***Overall Reliability Statistics for strategic alignment of the SMS***

Overall Reliability: Cronbach's Alpha = 0.700; N=7		
Measured Indicators	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Derived from organizational strategic priorities	.303	.682
Has full top management support	.479	.633
Link operations to strategic organizational priorities	.440	.646
Connect with the main focus of long-term objectives	.441	.646
Encourage employees to focus on important activities	.314	.678
Provide integration of organizational activities	.330	.678
Has clearly defined strategic objectives	.522	.627

Table 4.11 shows an overall Cronbach's Alpha value of 0.700. This value was within the acceptable range (> 0.6) as provided by Bäuml (2014), Field (2013) and Hair, *et al*. (2010). This confirmed construct reliability of the overall construct (strategic alignment of the measurement system). Deleting any of the indicators in Table 4.11 from the scale weakened the overall reliability score, thus all the indicators were positively contributing to the overall reliability of the construct.

4.3.5 Validity and Reliability of the Flexibility's Construct

Exploratory factor analysis was run on the five questions measuring flexibility of the measurement system to determine convergent and discriminant validities. Factor analysis results are shown in Table 4.12.

Table 4.12: ***Component Matrix for Flexibility of SMS***

Measured Indicators	Component 1	Communalities
Continuously monitor internal developments	.576	.668
Continuously monitor external developments	.937	.863
Institute changes in the system	.934	.915
Review objectives, targets, standards and assumptions	.919	.860
Review measures	.679	.647
Stimulate generation of new ways for managing tasks	.860	.869
Trigger rapid response to customer demands	.880	.856
Provide information for alternatives	.879	.846
Average loading	.852	
Average Variance Extracted (AVE)	.709	
Square root of AVE	.842	
Composite Reliability (CR)	.950	
Cronbach's Alpha/Internal reliability	.834	

Extraction Method: Principal Component Analysis. a. 1 components extracted.

Table 4.12 shows that the factor analysis results revealed only one component that had eigenvalue greater than one, which explains 50.5% of the total variance. Since only one component was extracted, the solution could not be rotated. Un-rotated component matrix shows that more than 60% of the variation in all the indicators was attributed to the latent variable. Indicator loadings > 0.5, and the average variance extracted (AVE) values > 0.50 in the pattern matrix establishes convergent validity.

Table 4.13 is a presentation of the overall and indicator reliabilities for the flexibility construct and its indicators.

Table 4.13: ***Overall Reliability Statistics for Flexibility of SMS***

Overall Reliability: Cronbach's Alpha = 0.834; N=8		
Measured Indicators	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Continuously monitor internal developments	.475	.828
Continuously monitor external developments	.521	.823
Institute changes/re-alignment in the system	.755	.793
Review objectives, targets, standards and assumptions	.541	.822
Review measures	.599	.812
Stimulate generation of new ways for managing tasks	.573	.817
Trigger rapid response to customer demands	.703	.800
Provide information for alternatives	.540	.820

Table 4.13 shows an overall Cronbach's Alpha value of 0.750. This value was considered good as provided by Bäuml (2014), Field (2013) and Hair, *et al*. (2010). Deleting any of the indicators from the scale weakened the overall reliability score, thus all the indicators were positively contributing to the overall reliability of the construct. This confirmed indicator reliability for the test items (indicators).

4.3.6 Validity and Reliability of the Mediating Variable (Customer Value)

Based on the results-determinant framework, firm performance was categorized into two dimensions. Strategic results (financial performance and sustainable competitive advantages) and the determinants of strategic success or customer value measured as a composite of resource utilization, service quality, innovation and flexibility. In this case, determinants of performance mediated the relationship between SMS and the organizational results. Likert scale type of 13 items was used for measuring the mediating variable or customer value (service quality and flexibility). However, use of optional choice questions measuring factual extent was adopted to measure resource allocation, service innovation, financial and sustainable competitive advantages. The scale was subjected to tests of validity and reliability through factor analysis.

Pattern matrix was used to establish how each item in the customer value scale loaded on the scale. Table 4.14 illustrates the findings.

Table 4.14: ***Pattern Matrix for Customer Value's (Mediating) Construct***

Measured Indicators	Component				
	1	**2**	**3**	**4**	**Communalities**
Targets are met by staff			.876		.782
Accurate records kept by staff			.905		.847
Staff work well without supervision	.797				.713
Staff communicates well to clients	.906				.876
Prompt service delivery	.883				.799
Services are affordable	.864				.768
Services are available at all times				.705	.534
Limited customer complaints				.753	.663
Service delivery is variables		.505			.344
Serve order wait period is variables				.698	.511
Variable service specification		.806			.596
Frequent service procedure upgrade		.650			.584
Innovative employees		.695			.608
Eigenvalue	3.553	2.349	1.634	1.1.097	
% of Variance	27.3%	18.0%	12.6%	8.4%	
Average Loading	0.862	0.664	0.890	0.718	
Average Variance Extracted (AVE)	0.745	0.452	0.793	0.517	
Square root of AVE	0.863	0.672	0.890	0.719	
Composite Reliability (CR)	0.922	0.763	0.884	0.762	
Cronbach's Alpha/Internal reliability	0.746				

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Table 4.14 reveals four components that had eigenvalues greater than 1, explaining 27.3%, 18.0%, 12.5%, and 8.4% of total variance, respectively. Strong loadings of service quality in terms of responsiveness, reliability, and availability occurred on components 1, 3 & 4 respectively. While strong loadings of service flexibility occurred on component 2. Analysis for discriminant validity was tested by comparing values for AVEs and correlation values between the four sub constructs. Table 4.15 shows the results.

Table 4.15: ***Component Correlation Matrix for Customer Value's Construct***

Component	1	2	3	4
1	1.000			
2	.122	1.000		
3	.001	.116	1.000	
4	.232	**.338**	.095	1.000

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.

Table 4.15 shows that the square of the highest correlation between the sub-constructs is 0.338^2 (or 0.114). This is lower than the square root of all the AVEs (>0.672) for the four

sub-constructs. This shows that the AVE values between the sub-constructs are greater than the correlations between the sub-constructs (Square root of AVE > Highest correlation squared). That is, the shared variance between indicators in each sub-construct is higher than the variance with other latent variables showing that the sub-constructs are truly distinct from each other (Hair, *et al*., 2010). Hence, the discriminant validity for the sub constructs was established. Indicator and construct/sub construct reliabilities were evaluated through Cronbach's alpha. Table 4.16 illustrates overall scale reliability.

Table 4.16: ***Overall Reliability Statistics for Customer Value***

Overall Reliability: Cronbach's Alpha = 0.768; N=13		
Measured Indicators	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Targets are met by staff	.125	.775
Accurate records kept by staff	.226	.767
Staff work well without supervision	.418	.751
Staff communicates well to clients	.703	.711
Prompt service delivery	.621	.723
Services are affordable	.613	.726
Services are available at all times	.323	.759
Limited customer complaints	.435	.750
Service delivery is variables	.244	.765
Serve order wait period is variables	.300	.762
Variable service specification	.221	.767
Frequent service procedure upgrade	.292	.762
Innovative employees	.439	.751

Table 4.16 shows an overall Cronbach's Alpha value of 0.768. This value was considered good as provided by Bäuml (2014), Field (2013) and Hair, *et al*. (2010). Deleting test item 1 increased the overall Cronbach's Alpha value from 0.75 to 0.78. However, the 0.03 change was considered too small and the item was retained in the scale.

4.3.7: Optimal Instrument

From the tests of validities and reliabilities, an optimal instrument was constructed. The indicators for the independent variables are shown in Table 4.17 while the indicators for customer value are presented in Table 4.18.

Table 4.17: ***Revised Scales and Indicators for Independent Variables***

Variable	Sub Constructs	Code	Items measured/Indicators & Dimensions
Breadth of SMS	Process measures	BSMS2.xi	Employee competency levels (Internal)
		BSMS2.xii	Work place quality (Internal)
		BSMS1.i	Quality of suppliers' services (External)
		BSMS1.ii	Quality of service distribution (External)
	Customer measures	BSMS1.v	Service price competitiveness (External)
		BSMS1.iv	Customer loyalty (External)
	Actors measures	BSMS2.i	Employee turnover ratio (Internal)
		BSMS2.ii	Employee needs assessment (Internal)
		BSMS2.iii	Customer-repurchase frequency (External)
	Situation measures	BSMS2.viii	Conformance to legal requirements (external)
		BSMS2.vi	Company Profitability (Internal)
		BSMS2v	Equipment effectiveness (Internal)
Depth of SMS	Operational level measures	DAF4A.v	Practical implementation of the PMS
		DAF4A.vi	Concentrate on important operational objectives
		DAF4A.i	Clearly define operational objectives
		DAF4A.viii	Exhaustively measure operational objectives
	Functional level measures	DAF4A.ii	Measure all objectives in all departments
		DAF4A.iv	Measure performance of different departments
	Business level measures	DAF4A.iii	Only measure the general business performance
		DAF4A.ix	Business level objectives adequately measured
	Corporate level measures	DAF4A.x	Successfulness of strategy is evaluated and reported
		DAF4A.xi	Measures for evaluation of fulfilling strategic goals
		DAF4A.xiii	Concentrate only on important corporate objectives
Alignment of SMS	Employee Work processes	DAF4B.v	Encourage employees to focus on important activities
		DAF4B.iii	Link operations to strategic organizational priorities
	Leadership & governance	DAF4B.ii	Has full top management support
		DAF4B.vii	Has clearly define strategic objectives
		DAF4B.i	Derived from organizational strategic priorities
	Management metrices	DAF4B.iv	Connected with main focus of long-term objectives
		DAF4B.vi	Provide integration of organizational activities
Flexibility of SMS	Adaptability	DAF4C.i	Continuously monitoring internal development
		DAF4C.ii	Continuously monitoring external development
		DAF4C.iii	Institute changes in the systems
	Innovativeness	DAF4C.iv	Review objectives, targets, standards and assumptions
		DAF4C.v	Review measures
		DAF4C.vi	Stimulate generation of new ways for managing tasks
	Responsiveness	DAF4C.vii	Trigger rapid response to customer demands
	Versatility	DAF4C.viii	Provide information for alternative resource use

Table 4.18: ***Revised Scale and Indicators for Customer Value***

Construct	Sub Constructs	Code	Items measured/Indicators & Dimensions
Customer value (determinant of performance)	Service quality	FP8.i	Targets are met by staff (Reliability)
		FP8.ii	Accurate records kept by staff (Reliability)
		FP8.iii	Staff work well without supervision (Responsiveness)*
		FP8.iv	Staff communicate well to clients (Responsiveness)*
		FP8.v	Prompt service delivery (Responsiveness)*
		FP8.vi	Services are affordable (Responsiveness)*
		FP8.vii	Service available at all times (Availability)
		FP8.viii	Limited customer complaints (Availability)
		FP8.x	Service order wait period is variable (Availability)*
	Service flexibility	FP8.ix	Service delivery is variable (Flexibility)*
		FP8.xi	Variable service specification (Flexibility)*
		FP8.xii	Frequent service procedure upgrade (Flexibility)
		FP8.xiii	Innovative employees (Flexibility)

**These were negatively worded. The entries were thus reversed*
Other Leading Indicators: Resource utilization (FP1); Innovation (6&7)
Lagging Indicators: Competitiveness (Sales growth=FP2; Customer loyalty= FP9) and Net Profit=FP5

4.4 Tests for Outliers and Influential Observations

Descriptive statistics including sample means, standard deviations, frequencies, and percentages were used to evaluate the firms' background information and the study variables. However, before conducting descriptive analysis, test for outliers was conducted. This was necessary since, presence of outliers and influential observations have the potential of distorting true sample means (Garson, 2012). Indices for the constructs and their sub-constructs were calculated by averaging the scores of items identified to load on those specific constructs and sub constructs. Use of average was preferred since the items were measured using the same scale and their validities and reliabilities were established through EFA (Gefen *et al*., 2000).

4.4.1 Outliers

To check for outliers in the data set, each data point of the independent and dependent variables was evaluated against the lower and upper bounds. Lower bounds and upper bounds were calculated based on the outlier-labelling rule. Garson (2012), citing Hoaglin and Iglewicz (1987) recommends ±2.2 as the best estimator for determining the demarcation criteria for outliers. That is, any value above (upper quartile plus

2.2*interquartile range) or below (lower quartile less 2.2*interquartile range) was considered an extreme outlier. Observations outside the range of the outlier-labelling rule were then deleted from the data. Table 4.19 illustrates the outlier demarcation criteria.

Table 4.19: ***Identification of Outliers***

Construct	Q1	Q3	IQR (Q3-Q1)	h (2.2*IQR)	Upper bound (Q3+h)	Lower bound (Q1+h)
Breadth	4.00	4.33	0.33	0.73	5.00	3.27
Depth	3.50	4.33	0.83	1.83	6.15	1.67
Alignment	3.71	4.57	0.86	1.89	6.46	1.81
Flexibility	3.40	4.20	0.80	1.76	5.96	1.64
Customer value	3.23	4.23	1.00	2.20	6.43	1.03
Competitiveness	3.75	4.25	0.50	1.00	5.35	2.65
Profitability	7.50	12.5	5.00	11.0	23.5	-3.50

By examining the set criteria in Table 4.19, 22 outliers were identified. These were then deleted leaving 157 observations.

4.4.2 Influential Observations (Leverage Points)

Despite satisfying the outlier-labelling rule, the remaining 157 observations were subjected to Cook's and Leverage score tests to determine potential influential observations. The cut off for Cook's value was 4/ (N-k-1) or (4/ (157-4-1) = 0.026, where four (4) is a constant and *n* the sample size. Figure 4.1 shows the distribution of the Cook's values.

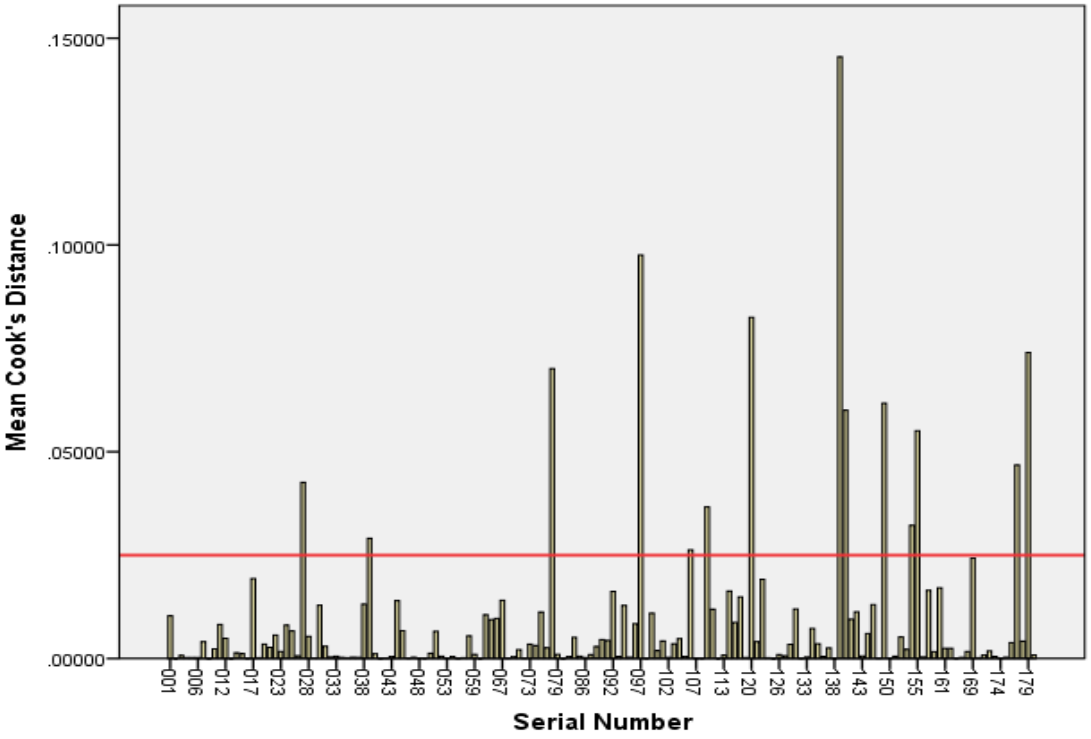


Figure 4.1: **Cook's Distance**

Figure 4.1 revealed that 14 observations were below the Cook's cut-off point (0.025) indicating potential influential observations. To confirm, a scatter plot of the centred leverage values and the standardized residuals was produced. Leverage scores were calculated as 3* (k+1)/n, where *k* is the number of independent variables in the model and *n* the number of observations (Garson, 2012). The cut-off for Leverage scores was 3*((k+1)/n) or 3*((4+1)/157) = 0.096.

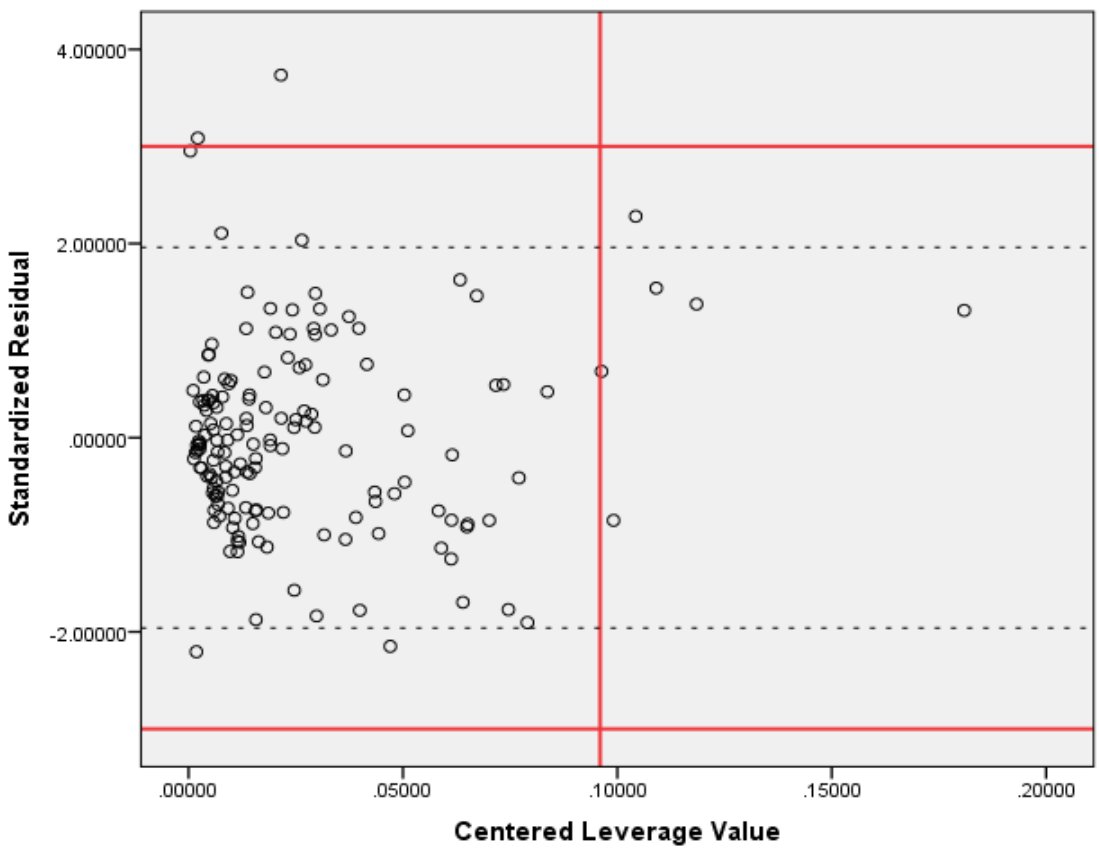


Figure 4.2: Leverage Scores

Figure 4.2 reveals two extreme observations with standardized residuals outside ±3. Further, five (5) of the leverage scores were outside the 0.096 cut-off point. These seven influential observations were then eliminated from the data set. The remaining 150 observations were still considered adequate for inferential statistics and hypothesis testing considering the common response rate in small and medium sizes enterprises research in the range of 20% and 25% (Bäuml, 2014; Cocca & Alberti, 2010; Sousa *et al*., 2006). Further, generally sample sizes above 30 ensure the benefit of central limit theorem and are adequate for data analysis (Hill, 1998; Saunders, 2007).

4.5 Background Information

The study investigated firm classification based on sub sector, years of operation, firm size, organizational structure, and type of measures adopted by the sampled firms. Information about firm size and structure was required to test their moderating effect on the relationship between strategic measurement system and firm performance.

4.5.1 Sub Sector

The firms were categorized into eight sub sectors. Frequency and percentages of occurrences were used to show representation of the various sub sectors of the service sector. This was necessary to establish the scope of the study. The findings are presented in Table 4.20.

Table 4.20*: Sub Sector Representation*

Sub Sector	Frequency	Percent
Transport & Warehousing	26	17.3
Tourism & Hospitality	95	63.3
ICT & Media	2	1.3
Financial & Insurance	14	9.3
Professional Services	3	2.0
Education	4	2.7
Health	4	2.7
Arts & Entertainment	2	1.3
Total	**150**	**100.00**

Table 4.20 shows that 63.3% of the respondents were from the tourism and hospitality sub sector; 17.3% from transport and warehousing sub sector; 9.3% from finance & insurance sub sector; 2.7% from the education sub sector; 2.7% from the health sub sector; 2.0% from professional service firms; 1.3% from Arts & Entertainment sub sector; and 1.3% from ICT & Media sub sector. The findings are reflective of the 2016 KNBS survey report on micro, small and medium establishments, which indicated that 59.1% of the medium sized establishments in the service sector in Kenya are in the tourism and hospitality sub sector, 9.9% in transport and warehousing and 6.5% in finance (KNBS, 2016). Hence, the findings revealed a proportionate representation of the various sub sectors in the service industry in Kenya.

4.5.2 Years of Operations

The firms were classified into seven categories depending on years of operation. First category composed of less than one year, followed by categories of 1-3 years, 4-6 years, 7-9 years, 10-12 years, 13-15 years, and more than 15 years. The findings are in Figure 4.3.

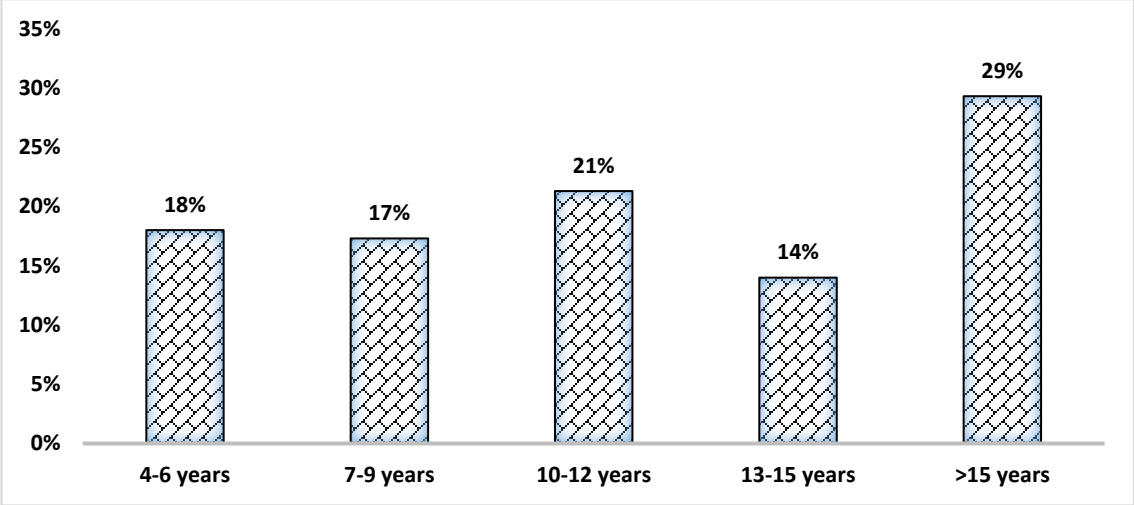


Figure 4.3: Years of Operation

Figure 4.3 reveals that 29% of the firms had been in operation for more than 15 years; 21% between 10 and 12 years; 14% were between 13 and 15 years; 18% were between 4 and 6 years; and 17% were between 7 and 9 years. According to KNBS (2016), in Kenya, 80% of business start-ups are closed within the first five years of operation and 94.1% within the first 15 years. However, the trend in closures declines from 46.3% in the first year to 5.3% and 4.9% in the fifth and fifteenth year respectively indicating business stability with time. Moreover, the average number of employees at closure is below five across all sectors of the economy. Therefore, considering that in Kenya, medium sized establishments are defined to have between 50 and 100 employees (GOK, 2005), most young companies are expected to be either micro or small with medium sized companies being companies, which survived the early closures and have been in operation for much longer periods. The findings in Figure 4.3 are in line with these general characteristics of medium sized firms in Kenya. Since, 64% of the firms were more than 10 years, the

findings indicate that most of the firms studied were probably beyond the start-up stage and were either in the growth or expansion stages.

4.5.3 Firm Size

Firm size was evaluated by considering three variables. Number of branches, number of employees and financial investment. The findings are outlined in Table 4.21.

Table 4.21: ***Number of Branches, Employees, and Financial Investment***

Parameter	Category	Frequency (*n*=150)	Percentages
Number of Branches	1 branch	81	54.3
	2-5 branches	38	25.5
	6-10 branches	15	10.1
	>10 branches	15	10.1
Number of Employees	51-60	30	20.0
	61-70	33	22.0
	71-80	7	4.7
	81-90	8	5.3
	91-100	72	48.0
Financial Investments	5-14 million	34	22.7
	15-30 million	29	19.3
	31-70 million	42	28.0
	71-150 million	18	12.0
	151-500 million	26	17.3
	>500 million	1	0.7

First, Table 4.21 shows that 54.3% of the firms had only one branch, 25.5% had between two to five branches; 10.1% had six to ten branches and 10.1% had more than ten branches. This is in line with the general characteristics of medium sized enterprises in Kenya. These firms are often faced with capital and resource inadequacies, which limit massive expansions and thus the number of branches remain fairly low (Jamil & Mohamed, 2011).

Secondly, the study focused on medium sized service firms employing between 50 and 100 employees. The nature of employment was inclusive of permanent and contracted or casual employees. Distribution of the firms outlined in Table 4.21 reveals that 48% of the firms employed between 91 and 100; 22% engaged 61-70 employees; 20% engaged 51-60 employees; 4.7% engaged between 71 and 80 employees; while 5.3 % engaged between 81-90 employees on a regular basis. This categorization was in line with Kenya's

official definition of medium sized firms as establishments employing between 50 and 100 persons (GOK, 2012).

Finally, Table 4.21 shows that 22.7% of the firms had a total investment between Ksh. 5 and 14 million; 19.3% between Ksh. 15 and 30 million; 28% between Ksh. 31 and 70 million; 12% between Ksh. 71 and 150 million; 17.3% between Ksh. 151 and 500 million; and 0.6% had a total investment above Ksh. 500 million. This is in line with the second dimension of the Kenyan Government's definition of medium sized service firms as establishments with a total investment of more than Ksh. 5 million GOK (2012).

4.5.4 Organizational Structure

The study sought to establish the most prevalent organizational structure in the medium sized service firms in Kenya. To determine this, four measurement items were evaluated. Method of organizing tasks, number of management levels, communication channels and employee inclusion in decision-making. For method of organizing tasks, five task-organizing methods were considered. These were, arranging tasks according to functions, divisions, specialization, matrix and flexible (changing) structures. Respondents were requested to indicate the most used method of organizing tasks in their organizations. Findings are as outlined in Figure 4.4.

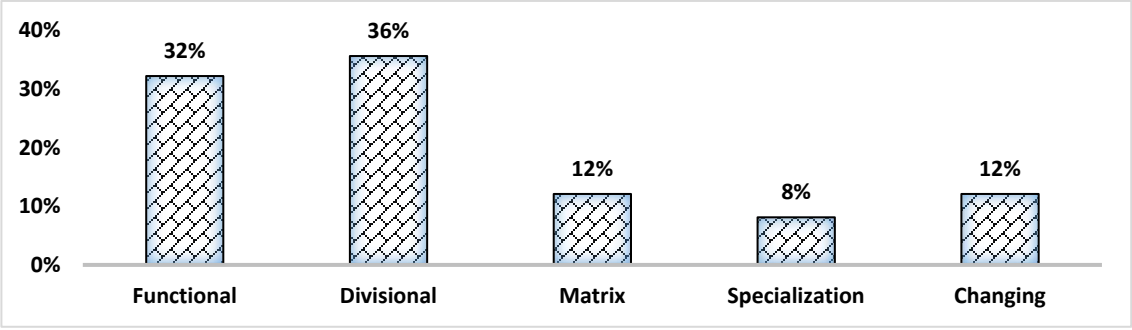


Figure 4.4: **Method of Organizing Tasks**

Figure 4.4 shows that 32% of the firms organize tasks based on functions where employees of similar specialties are grouped according to duties performed. Thirty-six percent (36%) of the firms organize tasks based on work divisions where employees of

different specialties are grouped and work according to service/product/region/market customer. Twelve percent (12%) adopt matrix structures where employees are grouped into teams but fulfil different roles across the organization and report to different departmental heads. Eight percent (8%) arrange tasks according to specialization where employees or teams are self-directed in conducting their duties, while 12% have flexible (changing) structures with no fixed structure and changes as need arises.

Use of functional and divisional structures are characterized by clearly specified job descriptions, inflexible boundaries between jobs and units, centralized decision making and higher number of management levels depicting a vertical organizational structure (Rishipal, 2014). However, matrix, specialized and changing structures promote flexibility between jobs and units, changing job descriptions, decentralized decision making and fewer number of management levels depicting horizontal (flat) organizational structure (Rishipal, 2014). Therefore, since 68% of the firms reported organizing employees according to duties performed or in work divisions where employees of different specialties are grouped and work according to service/product/region/market customer, they exhibit characteristics of vertically structured organizations. Hence, the study shows that majority of the medium sized service firms in Kenya are vertically structured. These finding are in line with findings by Marija *et al*. (2014), which indicated that small and medium sized enterprises mostly adopt functional structures which offer them the benefit of clear and direct control, good communication and coordination of employees within the functions.

The second dimension of firm structure evaluated was number of management levels. Respondents were requested to indicate the number of management levels in their firms. Figure 4.5 presents various management levels adopted by the sampled firms

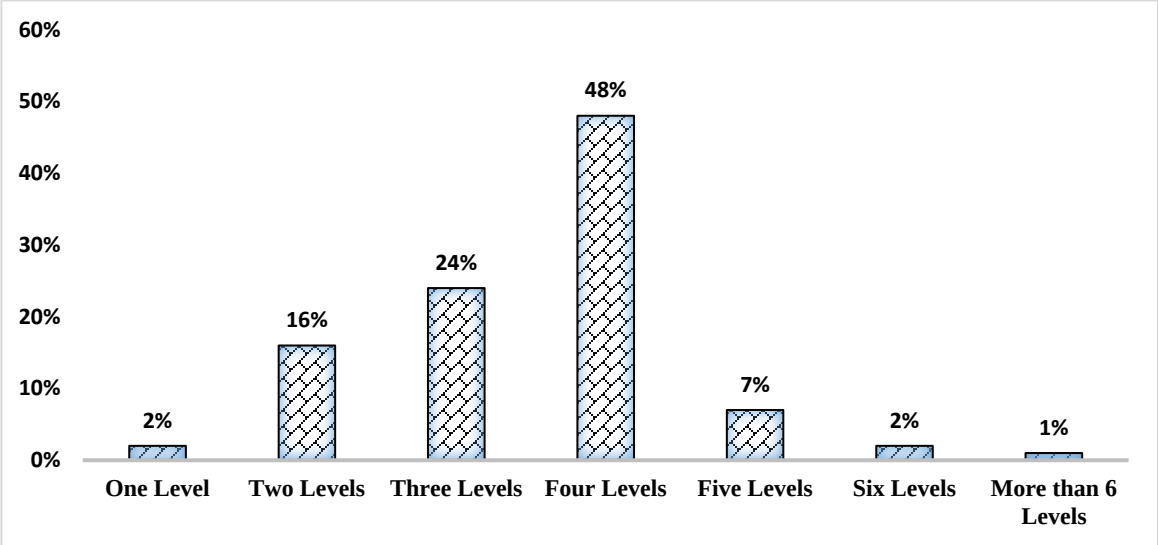


Figure 4.5: Number of Management Levels

Figure 4.5 shows that 48% of the firms had four levels of management, 24% had three management levels, 16% had two levels; 7% had five levels; 2% had six levels; 2% had one level; and 1% had more than six levels. According to Yildizel (2017), comparatively vertically structured firms have more management layers than horizontally structured firms. According to Rishipal (2014), horizontal (flat) organizations have relatively few layers or just one layer of management. Fifty-eight percent of the firms had four or more management levels depicting hierarchal organizations affirming prevalence of vertically structured organizations indicated in findings by Marija *et al*. (2014) that small and medium sized enterprises mostly adopt vertical structures.

The third dimension of organizational structure evaluated was the channels of communication within the organization. The respondents were requested to rank communication channels in order of frequency of use in their firms. Each respondent ranked a set of six communication channels. Ranking was from number one (most frequently used) to number six (least used).

Table 4.22: ***Communication Channels***

Communication Channel	Ranking (*n*=150)-Percentage (%)					
	1	2	3	4	5	6
Formal letters/memos	8.7	37.3	24.0	12.7	11.3	6.0
Formal boardroom presentations	0.7	10.5	13.3	44.8	18.9	11.9
Formal meetings	26.5	20.4	34.7	12.2	3.4	2.7
Informal face to face communication to individual employees	14.1	8.5	19.6	20.4	23.9	22.5
Informal meetings with a section of or all employees	13.6	10.7	7.9	7.9	31.4	28.6
Computer networks/intranets	39.5	18.4	13.6	4.8	6.1	17.7

Table 4.22 shows that majority of the respondents (39.5%) ranked use of computer networks / intranets at number one. Use of formal letters/memos was ranked number two by 37.3% while formal meeting was ranked number three by 34.7%, formal boardroom presentations ranked number four by 44.8%, informal meetings ranked number five by 31.4% and informal face to face communication to individual employees ranked number six by 22.5% of the respondents.

The ranking indicate that the sampled firms mostly used formal communication systems (soft copy documents, formal letters, formal meetings, and formal boardroom presentations). This characterizes vertical organizational structures, which prefer formal communication systems as indicated by Marija *et al*. (2014). The last dimension of organizational structure was the level of employee inclusion in decision-making (employee empowerment). A five-point Likert scale consisting of three questions was used. The findings are outlined in Table 4.23.

Table 4.23: ***Level of Employee Inclusion in Decision Making***

Statement	Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)	Mean	Std. Dev.
a) Frontline employees make important decisions	12.7%	12.7%	14.7%	36.0%	24.0%	3.46	1.32
b) Views of all employee are taken into account	11.3%	10.7%	18.7%	29.3%	30.0%	3.56	1.32
c) Junior employees have capacity to make decisions	15.3%	24.0%	28.7%	20.0%	12.0%	2.89	1.24
Aggregate Score	**12.1%**	**15.7%**	**20.7%**	**28.4%**	**21.9%**	**3.30**	**1.11**

Table 4.23 shows that on average the respondents agreed (*M*=3.46, *SD*=1.32) that frontline employees are allowed to make decisions that influence their work. Given that the maximum standard deviation for a five-point scale is two (square root ((5-3) * (3-1)), a standard deviation of 1.32 illustrates wider variability of the responses from the mean. It can also be observed that the mean score (*M*=3.56, *SD*=1.32) for taking into account views of employees' in policy and procedure formulation approximates agree as the mean lies between 3.4 and 4.2. However, on average there was uncertainty as to whether junior employees have capacity to make decision without their supervisors' input (*M*=2.89, *SD*=1.24) as the mean approximates somehow agree.

On aggregate, Table 4.23 approximates three (somehow agree) for employee inclusion in decision-making (*M*=3.30, *SD*=1.11). This shows that employees have a chance of expressing their views and opinions, which are sometimes taken into account in decision-making. This characterizes matrix organizational structures combining both horizontal (flat) and vertical organizational structures (Rishipal, 2014). Even though findings by Marija *et al*. (2014) indicate that small and medium sized enterprises mostly adopt vertical structures for clear employee control, the control does not mean total exclusion of employees in decision-making. The purpose of control in this case is to create convergence towards specific organizational goals.

To establish the overall organizational structure, the responses from the four dimensions of organizational structure were re-scaled and dummy coded into two main categories where zero (0) meant vertical structure orientation and one (1) meant horizontal structure orientation. For task organization method, scores for functional or divisional methods were considered to show vertically structured organization while matrix specialized and changing structures were considered to show horizontally structured organization. For management levels, firms with three or less levels were considered to have horizontal structures while firms with four or more levels were considered to have vertical structures. For communication channels, if the sum of the first three items exceeded the sum of the last three items, the organization was perceived to have a vertical structure. However, if the sum of the last three items exceeded the sum of the first three items, the organization

was perceived as having a horizontal structure. Finally, for employee inclusion if the total sum of the scale was less than nine (9), the organization was perceived to have a vertical structure otherwise horizontal.

The rescaled scores from the method of organizing tasks, management levels, tools of information sharing, communication channels, and employee inclusion were then summed to determine the most prevalent organizational structure in the medium sized service firms in Kenya.

Table 4. 24*: Organizational Structure*

Indicator	Zeros (Vertical)	Ones (Horizontal)	Assessment	Orientation
Method of Organizing tasks	68%	32%	Zeros>Ones	Vertical structure
Number of management levels	58%	42%	Zeros>Ones	Vertical structure
Communication channel	64%	36%	Zeros>Ones	Vertical structure
Employee inclusion	26%	74%	Zeros<Ones	Horizontal structure
Aggregate Score	**54.0%**	**46.0%**	**Zeros>Ones**	**Vertical structure**

In summary, findings in Table 4.24 reveals that majority of the sampled firms (68%) have clearly defined job descriptions with inflexible boundaries depicting vertically structured organizations. Similarly, majority of the firms (58%) have several layers of management depicting vertically structured organizations. Further, majority of the firms (64%) mostly use formal communication channels. However, majority of the firms (74%) include their employees' views and opinions in decision-making process albeit to a moderate extent. On aggregate, majority of the firms (54%) are vertically structured. This is in line with findings by Marija *et al*. (2014), which indicated that small and medium sized enterprises mostly use vertical organizational structure to ensure clear and direct control, good communication and coordination of employees.

4.5.5 Factors Influencing Performance Measurement Systems

Other than the design factors explored by the study variables, the study also sought to determine the state of internal implementation factors (drivers) influencing the effectiveness of the performance measurement systems. This was measured by employee

capacity to implement strategic measurement system. Table 4.25 shows findings on the ability of the staff to conduct situational analysis, collect right data, carry out data analysis, communicate effectively and create strategic alignment.

Table 4.25: ***Employee Capability***

Statement	Response	Percentage
a) Who conducts situational analysis for your firm?	Consultants	9.3
	Internal employees	64.1
	Internal employees assisted by consultants	26.6
b) Who in your organization is involved in data management (data gathering, analysis, storage)?	All employees	68.7
	Only supervisors and management staff	26.0
	Only management staff	5.3
c) Who in your firm participate in strategic planning	All staff members	88.4
	Only supervisors and management staff	10.6
	Only management staff	1.4
d) Who in your organization is authorized to send inter departmental formal communications	All employees are allowed to freely communicate with teams in other sections	39.3
	Supervisors can approve Inter departmental communication	46.7
	Inter departmental communication must be approved by unit managers	10.7
	Interdepartmental communication must go through the top management	3.3

Table 4.25 shows that the majority of the respondents (64.1%) indicated that situational analyses are conducted by their internal staff; 26.6% by internal staff assisted by consultants; and 9.3% by external consultants. Table 4.25 further reveals that 68.7% of the firms involve all staff members in data management; 26% involve only supervisors and management staff; and 5.3% involve only the management staff. Likewise, Table 4.25 indicate that 88% of the firms involve all employees in strategic planning; 10.6% involve only the supervisors and management staff; and 1.4% involve only the management staff. Table 4.25 also shows that for 39.3% of the firms, non-management employees can freely communicate with other members in other departments without approval of their superiors, while for 46.7% of the firms, inter departmental formal communication must be approved by at least a supervisor. For 10.7% of the firms, unit managers must approve inter departmental formal communication, and for 3.3% of the firms such communications must go through the top management.

The findings shown in Table 4.25 shows that in most of the organizations, staff have capacity for implementation of SMS as they can conduct situational analysis, have capacity for data management, strategic planning and have free access to information sharing. The findings are inconsistent with a study by Akpabot and Khan (2015) whose findings indicated that small and medium enterprises (employing 11-200 employees) do not have adequate capacity for implementation of strategic measurement systems. On the contrary, in the same study, 58% agreed that their firms have the ability to conduct situation analysis by monitoring their competitor's products and services. The later tends to negate the general assumption that all small and medium-sized enterprises lack the capabilities to take advantage of SMS due to limitations in management skills (Wei, Bourlakis, & Aktas, 2018). However, the findings are consistent with a study by Dziekoński, Ibrahim and Abdul-Majeed Mahamadu (2018), which identified the use of performance measurement indicators to be highest (40%) among medium-sized Egyptian manufacturing companies. That is, the firms had the requisite management capacities for data collection and management.

Findings are supported by Hudson, *et al*. (2001) assertion that most of the available performance measurement systems are designed to evaluate the performance of medium to large-sized companies, which have the necessary financial and management capabilities for their implementation. According to Langwerden (2015), formal and sound data gathering and analysis framework, alignment between strategy and measures, knowledge management and effective communication to enhance and guide decision-making, drive success of the implementation of SMS. The responses in this study therefore illustrate that the sampled firms have managerial capabilities for implementing strategic measurement systems.

The study also sought to determine the actual outcomes of SMS in use. Respondents were requested to indicate whether they agree that their SMS are effective in facilitating attributes of communication of firm strategy; strategy execution and control; and shaping of strategy reformulation processes. The findings are shown in Table 4.26.

Table 4.26: ***Performance Measurement System Outputs***

	Statement	Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)	Mean	Std. Dev.
i.	Availability of right information at all times	0.0%	0.0%	7.3%	48.7%	44%	4.37	.618
ii.	A comprehensive view of the firm compared to its competitors	0.7%	2.0%	19.3%	48.7%	29.3%	4.04	.793
iii.	Strategy implementation, evaluation and re-formulation	0.7%	0.0%	18.7%	60.7%	20.0%	3.99	.671
iv.	Provision of results for corrective actions	0.0%	0.0%	8.1%	57.0%	34.9%	4.27	.600
v.	Employee motivation at all levels	0.7%	0.7%	24.7%	51.3%	22.7%	3.95	.749
vi.	Objective budget preparation	0.0%	0.0%	7.3%	42.7%	50.0%	4.43	.628
vii.	Strengthening of company brand & reputation	0.0%	0.0%	5.3%	44.7%	50.0%	4.45	.597
viii.	Organizational learning	0.0%	1.3%	15.3%	46.0%	37.3%	4.19	.739
ix.	Simplifying control and emphasizes responsibility	0.0%	2.0%	16.1%	54.4%	27.5%	4.07	.717
x.	Communication of the results gained to the stakeholders	0.0%	0.7%	4.7%	50.0%	44.7%	4.39	.611
	Aggregate score	**0.22%**	**0.74%**	**14.0%**	**50.74%**	**34.29%**	**4.21**	**.344**

Table 4.26 shows that on aggregate, the respondents strongly agreed that performance measures used in their organizations ensure availability of right information (*M*=4.37, *SD*=0.62), and agreed that the systems provide for a comprehensive view of the firm (*M*=4.04, *SD*=0.79) and facilitate strategy evaluation (*M*=3.99, *SD*=0.67). Further, Table 4.26 indicated that on average the respondents strongly agreed that the systems provide results for corrective action (*M*=4.27, *SD*=0.60). They also agreed that the systems support employee motivation (*M*=3.95, *SD*=0.75); promote organizational learning (*M*=4.19, *SD*=0.74); and ensure simplification of controls (*M*=4.07, *SD*=0.72). Table 4.26 also indicates that on average the respondents strongly agreed that the systems facilitate

objective budgeting (*M*=4.43, *SD*=0.63); strengthen strong company brand (*M*=4.45, *SD*=0.60); and facilitate communication of results (*M*=4.39, *SD*=0.61).

In a nut shell, the responses illustrates that on average medium sized service firms in Kenya, use strategic measurement systems to facilitate communication of firm strategy (e.g. company branding, results communication); facilitate strategy execution (e.g. availability of right information at all times, comprehensive view of the firm, employee motivation, objective budgeting); shape strategy control (e.g. provision of results for corrective action and simplification of controls); and shape strategy reformulation processes (e.g. strategy evaluation, organizational learning).

The findings are supported by a study by Silvi *et al*. (2015) in Italy which showed that 88% of the medium and large sized firms adopt the use of strategic measurement systems. However, the same study showed that there are two very different SMS models used by medium and large sized firms. The short term financial model based on short-term, internally focused and unconnected financial indicators; and the multidimensional additive model with an integration of financial and non-financial measures. The study however showed that most medium sized firms remain very much focused on conventional financial performance indicators and tend to manage the development of SMS in terms of simple addition of non-financial measures rather than shape it according to contingent organizational factors. This therefore means that most medium sized firms adopt the use of SMS albeit the systems widely vary in terms of capacity and adequacy. Similarly, a study by Chimwani *et al*. (2013) established limited use of strategic measurement systems with preference of short-term financial measures among medium sized manufacturing firms in Kenya. These variability in terms of the breadth, depth, strategic alignment and flexibility of the systems are explored under the descriptive statistics.

4.6 Descriptive Statistics

4.6.1 Breadth of Strategic Measurement System

The study examined SMS used by medium sized service firms in Kenya to describe their design in terms of breadth. There were two levels of evaluation, use of optional choice questions and a Likert scale. First, the respondents were asked to indicate the key performance indicators used in their firms. The results are shown in Table 4.27.

Table 4.27: *Common Key Performance Indicators*

Category		Common Measures (*n=150*)
i.	Financial Measures	Net profits (100%); Return on Investment (98%); Operating income (95%); Operating cost (94%); Sales figures (91%); Sales volumes (85%); Sales growth (73%)
ii.	Customer perspective measures	Customer complaints (61%);
iii.	Learning and Innovation measures (Actors + Situation)	Service quality (55%)
iv.	Internal business processes	Quality of supplies (87%); Staff competency (73%); On-time delivery (51%); Response time (41%)

Table 4.27 reveals that financial measures were the most frequently used indicators. The most common indicators included net profits (100%), return on investment (98%), operating cost (94%) and sales figures (91%). Comparatively fewer firms were measuring service quality (55%) and individual employee's response time (41%). These findings imply that while all firms measured some kind of financial performance, at least 45% of the firms do not include measures on learning and growth (Actors and Situation), at least 39% did not include customer perspective measures and at least 13% did not measure internal process effectiveness. This shows that a large number of firms were focusing more on short-term objectives with little attention on strategic (long-term) goals. At least 45% of the firms do not measure outputs of organizational learning and growth perspectives.

From these findings, majority of the firms adopted use of both financial and non-financial measures. However, majority of the firms measured more internal business perspectives compared to external perspectives. This indicates that managers are more concerned with internal business processes and their immediate financial outputs at the expense of long-term outcomes. The findings are supported by Ahmad (2014) conclusion that small and

medium enterprises use a blend of both financial and non-financial measures. Maduekwe and Kamala (2016) assertion that financial performance measures are more frequently used by SMEs compared to non-financial performance measures also support the findings. This is further supported by Wadongo *et al*. (2010) conclusion that service providers in Kenya focus on financial and result measures of performance while ignoring non-financial and determinant measures.

Flexible strategy-game-card model was used to construct a Likert type Scale to assess the effect of breadth of strategic measurement system on performance. According to the model to be strategic, a performance measurement system should adequately measure processes, customer perspectives, actors' perspectives, and situational perspective (Sushil, 2010). The respondents were asked to indicate that extent to which they agreed that various measures are satisfactorily measured, analysed and reported in their organizations. Table 4.28 illustrates the findings.

Table 4.28: ***Breadth of Strategic Measurement System***

Breadth of SMS (*n=150*)	Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)	Mean	Std. Dev.
Processes measures							
Employee competency levels (*I*)	3.4%	0.6%	5.6%	40.2%	50.3%	4.1	0.78
Work place quality (*I*)	1.7%	1.7%	4.5%	35.8%	56.4%	4.3	0.81
Quality of supplies (*E*)	2.2%	1.7%	7.3%	60.9%	27.9%	4.3	0.88
Quality of distribution (*E*)	1.7%	1.7%	4.5%	35.8%	56.4%	4.4	0.80
Sub Aggregate score	*2.3%*	*1.4%*	*5.8%*	*44.0%*	*34.1%*	*4.3*	*0.82*
Customer measures							
Price competitiveness (*E*)	1.1%	2.8%	10.6%	46.9%	38.5%	4.2	0.81
Customer loyalty (*E*)	0.6%	2.6%	10.1%	41.9%	44.7%	4.3	0.80
Sub Aggregate score	*0.9%*	*2.7%*	*10.4%*	*44.4%*	*41.6%*	*4.3*	*0.81*
Actors measures							
Employee turnover ratio (*I*)	1.1%	8.4%	14.0%	55.8%	20.7%	3.7	0.88
Employee needs assessment (*I*)	0.6%	3.9%	48.6%	40.2%	6.7%	3.2	0.71
Customer-repurchase (*E*)	3.9%	3.4%	20.1%	54.2%	18.4%	3.4	0.92
Sub Aggregate score	*1.9%*	*5.2%*	*27.6%*	*50.1%*	*15.3%*	*3.4*	*0.84*
Situation measures							
Legal conformance (*E*)	0.6%	2.2%	20.1%	51.8%	25.1%	3.4	0.77
Company Profitability (*I*)	0.6%	0.0%	1.1%	29.6%	68.7%	4.1	0.56
Equipment effectiveness (*I*)	0.6%	3.4%	16.2%	50.8%	29.1%	3.9	0.80
Sub Aggregate Score	*0.6%*	*1.9%*	*12.5%*	*44.1%*	*41.0%*	*3.8*	*0.71*
Grand Aggregate Score	**1.4%**	**2.8%**	**14.1%**	**45.7%**	**33%**	**4.0**	**0.80**

Note: I-Internal perspective, E-External perspective

Findings in Table 4.28 reveals that on average the respondents strongly agreed that processes (*M*=4.3, *SD*=0.81) and customers' financial performance (*M*=4.3, *SD*=0.81) perspectives are measured in their organizations. Table 4.28 further indicates that on average the respondents somehow agreed that actors' perspectives are measured (*M*=3.4, *SD*=0.84) but agreed that firm situation is measured (*M*=3.8, *SD*=0.71). The findings reveal that comparatively, most of the firms lay more emphasis on measuring processes and financial performance. However, limited emphasis is given to situation and actors perspectives. Particularly, limited focus is put on actors' perspective such as employees needs assessment (*M*=3.2, *SD*=0.71) and customer re-purchase frequency (*M*=3.4, *SD*=0.92). Similarly, not as much effort is given to conformance to legal requirements (*M*=3.4, *SD*=0.77). The fact that employee needs assessment is least considered is an indication of probable misalignment of the performance measures to stakeholder's expectations and capacity. Particularly lack of focus on employee needs would stifle employee concerns such as motivation, career growth, and innovations, which have a direct link with delivering value in the future. This therefore, reduces the strategic measurement system's effectiveness in delivering strategic results.

In summary, the findings reveal that most medium sized service firms in Kenya adopt the use of strategic measurement systems. The systems measure processes, customer financial perspective, actors' perspectives, and situational perspectives as recommended by Sushil (2010) for strategic measurement systems. The systems also measure both external and internal perspectives of the firm. However, the adequacy and effectiveness of most of these strategic measurement systems are of concern, as most of these systems are unbalanced and mainly focus on operational activities (processes) and profitability with limited emphasis on firm actors and situational perspectives. This means that most of the systems are looking at past performance through an integration of profitability indicators and internal efficiency measures. The fact that few firms include forward-looking measures such as actors' perspectives means that most medium sized service firms in Kenya adopt use of strategic measurement systems, which are not as comprehensive as expected to elicit all the desired information for strategy implementation. For instance,

measures of employee needs' assessment, which in this case is given little attention would inform decisions for developing unique long-term capabilities within the organization and retaining the same as a source of long term strategic competitive advantages.

These findings are consistent with a study by Silvi *et al*. (2015) on practice of strategic measurement among the Italian medium sized firms. The study established that 88% of companies included financial indicators in their reporting but very few included other dimensions of performance especially the external dimensions such as customers (22%), supply chain (22%), competitors (15%), and forward-looking indicators such as innovation and human resource management (2%). Similarly, a study by Garengo and Bernardi (2007b) in Italy, attributed lack of sustainable competitive advantage among medium sized firms to focus on measuring operational and technological factors at the expense of strategic measures. Likewise, Chimwani *et al*. (2013) attributed inadequate strategic capabilities among small and medium sized enterprises in Kenya to limited use of strategic measures with preference of short-term financial measures with measures for internal business process, innovation, and learning being less obvious. This limits the firms' ability to generate the necessary strategic information for successful deployment of resources (competitive strategies) for the firms' sustainable survival and growth. These findings therefore illustrate that the breadth of strategic measurement systems used by most medium sized service firms in Kenya is generally limited to profitability indicators and internal efficiency measures. On average, little emphasis is put on measuring firm actors and situation, which are key in generating strategic information for the development of sustainable competitive advantages. In overall, even though measurement systems used by most medium sized enterprises in Kenya are strategic in nature by the fact that they measure both operational and strategic intentions, these strategic measurement systems have inadequacies as they fail to provide a balanced framework for all critical dimensions of sustainable performance. Thus, as indicated by Hudson *et al*. (2001) fail to give a truly balanced view of performance.

4.6.2 Depth of Strategic Measurement System

The study sought to establish the depth of the strategic measurement systems used by medium sized service firms in Kenya. In understanding the level of detail, the study evaluated the key focus of measurement systems, areas measured, extent of measures application, measurement disaggregation, managers' level of control and frequency of measurement. Findings in Table 4.29 shows the key focus of the measurement systems, activities measured and the extent of implementation of the measurement systems in their organizations.

Table 4.29: ***Focus of Performance Measurement Systems***

Measure	Category	Percentage (n=150)
Key focus of measurement systems	Operational Efficiency	65
	Overall annual business performance	23
	Long term goals	12
Areas Measured	Performance of some operational activities	19
	Performance of important operational activities	68
	Performance of all operational activities	13
Extent of measurement systems application	In sections of some departments	7
	Only in some departments	15
	Across all departments/units	78

Table 4.29 shows that majority (65%) of the firms focus on measuring operational efficiency of activities considered important (68%). Further, majority of the firms indicated that they apply measures across all their departments (78%). The study further investigated the level of strategic measurement system's depth with regard to the level of measures aggregation, managers' level of control and frequency of measurement. Respondents were requested to indicate the extent to which employees', operational and market outputs are disaggregated. Table 4.30 illustrates the findings.

Table 4.30: ***Level of Performance Measurement Disaggregation***

Measures	Category	Disaggregation	Count	Percentage
Employee outputs	Employee work attendance	Total Man hours worked in a month	2	1.3
		Total Man days worked in a month	148	98.7
	Employee effectiveness	Complaints per customer served	32	21.3
		Total customer complaints per month	118	78.7
	Revenue per employee	Average sales per day	55	36.7
		Total sales revenue per month	95	63.3
Operational outputs	Work schedule targets	Hourly	3	2
		Daily	5	3.3
		Weekly	44	29.3
		Monthly	146	97.3
		Quarterly	88	58.7
		Semi-annually	56	37.3
		Annually	34	22.7
Market outputs	Sales targets	Customer demographics	11	7.3
		Time of day	7	4.7
		Employee	78	52.0
		Customer Level of spending	16	10.7
		Service line	141	94.0
		Region/store	89	59.3
		Company totals	148	98.7

Table 4.30 shows that majority (98.7%) of the firms use aggregated monthly man-days instead of productive hours (1.3%) in evaluating employees' performance. Table 4.30 also shows that majority (78.7%) of the firms use total customer complaints instead of complaints per customer (21.3%) in assessing employee effectiveness. Further, majority (63.3%) of the firms use total sales per month instead of average sales per day (36.7%) in estimating revenue per employee. These findings show most firms use aggregated measures, which are less informative such as aggregated report of number of days, total complaints and total revenue, which do not highlight in-depth information on employee productivity per hour, per customer complaints and average sales per day respectively.

Table 4.30 also shows that the firms use a mix of targets for operational efficiency measurements. For majority of the firms, measures of operational outputs have monthly targets (97.3%), while only 29.3% of the firms disaggregate their targets to weekly outputs, 3.3% to daily targets and 2% to hourly outputs. This illustrate focus on aggregated monthly outputs with reduced frequency of conducting measures. Thus, for majority of

the firms the measurement systems are not disaggregated enough to elicit in-depth information about hourly, daily and weekly operational performances.

Table 4.30 further indicates that the firms use various levels of sales revenue disaggregation. Majority (98.7%) report aggregated company outputs, while 94% report disaggregated sales revenue by service lines, 59.3% by region/store and 52% by employee outputs. However, few firms disaggregate revenue by customer level of spending (10.7%), time of sale (4.7%) and customer demographics (7.3%). This shows that for most firms, the focus is mainly at the company-aggregated output level other than disaggregation of results to customer level indicators. This high level of aggregation shows lack of in-depth investigation. This would hamper collection of in-depth information, which is critical for market segmentation, and targeted niche marketing.

The study also explored the level of employee control over implementation of strategic priorities. The question sought to indicate who controls daily allocation of resources for operational tasks. The results are illustrated in Figure 4.6.

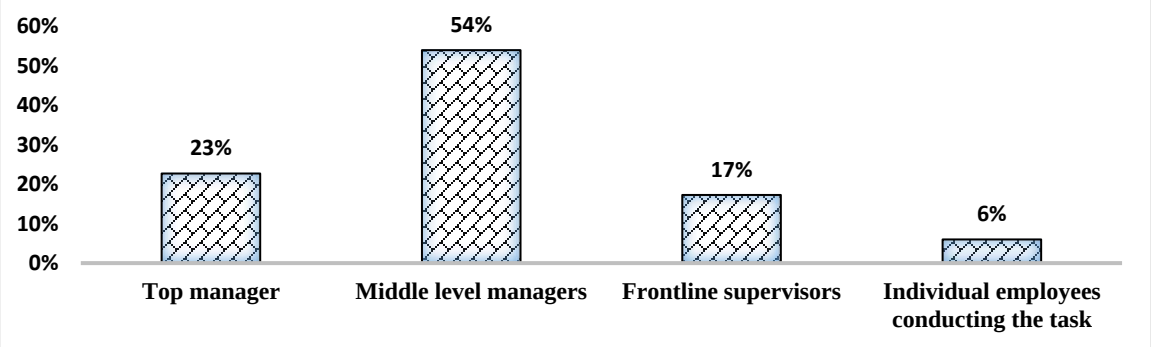


Figure 4.6: Manager/Employee Task Control Level

Figure 4.6 indicates that for most firms, the control for daily allocation of resource for daily tasks rests with the middle level managers (54%) and top managers (22.7%). It is only in 17.3% of the firms where frontline supervisors have control on daily allocation of resources and in 6.0% where individual employees conducting the tasks have control over daily allocation of resources. This shows centralized organizations where lower level managers and employees do not have full control on their work scheduling and task

implementation. Hence, very few firms set strategic priority targets for employees based on factors the employees can control.

The study then evaluated the relationship between depth of SMS and performance. On a five-point Likert scale of 1= strongly disagree, 2= disagree, 3=somehow agree, 4=agree and 5= strongly agree, the respondents were asked to describe extent to which measures are sufficiently cascaded throughout the organization's structure and components. An index of depth, which is a proxy designed as a simple arithmetic mean of all answers to the questions was calculated and summarized in Table 4.31.

Table 4.31: ***Depth of Strategic Measurement System***

Depth of SMS *(n=150)*	Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)	Mean	Std. Dev.
Operational level measures							
Clearly define operational objectives	0.0%	2.7%	23.3%	53.3%	20.7%	3.92	0.73
Practical implementation of the performance system	0.0%	1.3%	14.0%	60.0%	24.7%	4.08	0.66
Concentrate on important operational objectives	0.0%	0.7%	17.3%	49.3%	32.7%	4.14	0.71
Exhaustively measure operational objectives	6.0%	12.0%	14.0%	20.0%	48.0%	3.92	1.28
Sub Aggregate score	*2.0%*	*4.0%*	*17.0%*	*46.0%*	*32.0%*	*4.02*	*0.85*
Functional level measures							
Measure all objectives in all departments	0.7%	2.2%	22%	50.7%	24.7%	3.96	0.81
Measure performance of different departments	0.0%	8.0%	20.7%	51.3%	20.0%	3.83	0.84
Sub Aggregate score	*0.35%*	*5.1%*	*21.4%*	*51.0%*	*22.4%*	*3.90*	*0.83*
Business level measures							
Only measure the general business performance	0.0%	12.7%	39.3%	32.7%	15.3%	3.51	.90
Business level objectives adequately measured	1.3%	20.0%	33.3%	31.3%	14.0%	3.37	.99
Sub Aggregate score	*0.7%*	*16.4%*	*36.3%*	*32.0%*	*14.7%*	*3.44*	*0.95*
Corporate level measures							
Concentrate on important corporate objectives	16.0%	30.0%	20.0%	20%	14%	2.86	1.30
Successfulness of strategy is evaluated and reported	18.0%	23.3%	18.0%	18.0%	22.7%	3.04	1.43
Measures for evaluation of fulfilling strategic goals	11.3%	6.7%	4.7%	5.3%	72.0%	4.20	1.42
Sub Aggregate score	*15.1%*	*20.0%*	*14.2%*	*14.4%*	*36.2%*	*3.37*	*1.38*
Grand Aggregate Score	**4.4%**	**11.4%**	**22.3%**	**35.8%**	**26.2%**	**3.68**	**1.00**

Detail is paramount in creating clear and full understanding of parameters being measured. In establishing detail, the SMS should have performance measures that can be cascaded downward and upward so that there is consistency between the way in which strategies are assessed by top management and how operational decisions are evaluated elsewhere in the organization. Table 4.31 indicates that on average the respondents agreed that performance measures are sufficiently cascaded to cover operational level (*M*=4.02, *SD*=0.85) and functional level (*M*=3.90, *SD*=0.83) objectives and activities. However, the respondents somehow agreed that performance measures are sufficiently cascaded to cover business level (*M*=3.44, *SD*=.95) and corporate level (*M*=3.37, *SD*=1.38) objectives and activities.

In summary, Table 4.31 shows that on average the respondents agreed that the measures are sufficiently cascaded across the various levels of the organization (*M*=3.68, *SD*=1.00). However, even though the study showed that measures are sufficiently cascaded across the various levels of the organization, Table 4.30 and Figure 4.6 indicate that majority of the firms do not use disaggregated measures; do not empower staff to be in control of strategic priority targets; and do not frequently measure outputs as suggested by Bento and White (2006) for in-depth measurement systems. The findings are in line with the general suggestion by Wasneiewski (2017) that small and medium establishments should not use deep SMS, as too much detail will only serve to prolong the implementation of the system at the expense of delivery. In fact, the findings are consitent with literature which recommends shallow strategic measurement systems for SMEs (Wasneiewski, 2017).

However, as alluded by Prieto and Carvalho (2011), strategic measurement system that optimizes detail helps in transforming strategic objectives into operational measures with relatively high effectiveness. Further, sound strategic measurement system must provide reasonable detail, which shows how measures should look like and provide useful development process (Hudson, *et al*., 2001). Hence, the findings that majority of the

medium sized firms in Kenya sufficiently measure operational and functional outputs considered important across all departments but fail to disaggregated measures; empower staff to be in control of strategic priority targets; and frequently report the measure, affects generation of critical in-depth information for deployment of right strategies for sustainable competitive advantages.

4.6.3 Strategic Alignment of the Measurement System

The study sought to determine the extent to which the performance measurement systems adopted by medium sized service firms in Kenya sufficiently facilitate alignment of the various facets of the organization. Table 4.32 illustrates the findings on use of performance contracting and rewards a strategy for enhancing employee alignment.

Table 4.32: ***Performance Contracting and Reward Systems***

Measure	Category	Percentage (n=150)
Do you practice performance contracting in your organization?	Yes	87
	No	13
Who signs performance contracts	Top management only	4
	Top and middle management only	5
	Technical employees only	37
	All employees	54
Do you have operational reward system in your organization?	Yes	81
	No	19
What type of rewards are mostly offered for exemplary performance?	Cash	25.4
	Job promotions	23.0
	Staff training (fee payments)	8.2
	Paid leave/vacation	3.3
	Spot awards	40.2

Performance contracts and reward systems are important tools for translating strategy into actionable operations and aligning employee goals to organizational objectives. Table 4.32 indicates that 87% of the firms have performance contracting in place. However, only 54% of the firms include all their employees in performance contracting. Table 4.32 also shows presence of performance reward systems (81%). These rewards are mainly in form of spot awards (40.2%), cash (25.4%), job promotions (23%), staff trainings (8.2%)

and paid leave/vacations (3.3%). Presence of performance contracting and reward systems indicates that the systems strive to align employees' goals to organizational objectives. However, the fact that about half (46%) of the firms do not engage all their employees in performance contracting raises concerns on the extent of alignment of the measures and adequacy in driving the overall organizational strategic performance. Further, it is clear that for most firms, the reward systems are non-strategic. Few firms actually use long-term rewards such as staff trainings (8.2%) and job promotions (23%). While comparatively, more firms adopted use of short-term rewards such as cash (25.4%) and spot awards (40.2%). Therefore, most of the firms use measurement systems focusing on achieving alignment to short goals at the expense of firm strategic objectives. Hence, most of the measurement systems adopted by medium sized service firms in Kenya are aligned to organizational short-term goals but are not fully aligned to long-term goals.

These findings are in line with Fauske *et al*. (2008) assertion that SMEs have inadequate knowledge for performance measurement concepts, theories, and tools resulting into imperfect measurement systems, which are unbalanced, static, less aligned to strategy, and sub-optimal. Cocca and Alberti (2010) further illustrated lack of optimal alignment of performance measurement systems in small and medium sized establishments, since most of these firms suffer from financially constraints and lack adequate information technology infrastructure for the implementation of performance measurement systems. Likewise, the findings are in line with Langwerden (2015) who observed that small and medium sized establishments' approach to performance measurement systems is informal, not planned, not based on a predefined model and is often of poor alignment to strategy and measures.

A Likert scale was used to test the hypothesis that strategic alignment of measurement system does not have a significant effect on the performance of medium sized service firms in Kenya. The respondents were asked to describe the extent to which SMS facilitate alignment of employees, processes, management and leadership to organizational long-term objectives. The findings are in Table 4.33.

Table 4.33: ***Alignment of Strategic Measurement System***

Strategic Alignment Measures are/……..	Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)	Mean	Std. Dev.
Employees Alignment measures							
Encourage employees to focus on important activities	2.7%	4.0%	56.7%	23.3%	12.7%	3.4	0.65
Work processes Alignment measures							
Link operations to strategic organizational priorities	0.0%	12.3%	61.4%	20.0%	6.0%	3.2	0.61
Management Alignment measures							
Connected with main focus of long-term objectives	0.0%	9.5%	62.6%	14.7%	13.3%	3.3	0.58
Provide integration of organizational activities	1.1%	21.8%	47.5%	20.0%	9.3%	3.1	0.75
Sub Aggregate Score	*0.55%*	*16.65%*	*55.05%*	*17.35%*	*11.30%*	*3.2*	*0.67*
Leadership Alignment measures							
Full top management support	0.7%	6.0%	42.0%	40.0%	10.7%	3.5	0.69
Clearly defined strategic objectives	2.0%	10.7%	60.7%	14.7%	11.3%	3.2	0.60
Derived from firm strategic priorities	1.3%	6.7%	56.0%	22.7%	14.0%	3.4	0.68
Sub Aggregate Score	*1.33%*	*7.8%*	*52.9%*	*25.8%*	*12.0%*	*3.4*	*0.66*
Grand Aggregate Score	**1.1%**	**10.7%**	**55.6%**	**21.7%**	**10.9%**	**3.3**	**0.66**

Mohamed and Rahman (2010) argued that SMS must be aligned with capabilities to be effective and consistent with strategic choices. That is, SMS are crucial in aligning management processes such as target setting, decision-making and performance evaluation with the achievement of the chosen strategic objectives. In this way, well designed SMS becomes a pillar in connecting an enterprise's purpose (what we do and why we do it) to its business strategy (what we are trying to win at to fulfil our purpose), organizational capability (what we need to be good at to win), resource architecture (what makes us good), and, finally, management systems (what delivers the winning performance we need).

The study thus sought to establish the extent which SMS adopted by medium sized service firms supports the arrangement of strategies, organizational capabilities, resources, and management systems to support the enterprise's purpose. The summary results in Table 4.33 shows that on aggregate, the respondents somehow agreed that performance measures sufficiently facilitate employee alignment (M=3.4, SD=0.65), work processes

alignment (*M*=3.2, *SD*=0.61), management alignment (*M*=3.2, *SD*=0.67) and leadership alignment (*M*=3.4, *SD*=0.66) to long term objectives of the firm.

The study reveals that on average, the respondents somehow agreed (*M*=3.3, *SD*=0.66) that measures used by their organizations sufficiently facilitate alignment of various aspects of the organization to strategic objectives. This is a moderate agreement, meaning that the measures do not create sufficient alignment of employees, processes, management and leadership to the overall organizational objectives. However, Table 3.32 shows that the alignment focuses more on achieving short-term goals at the expense of strategic objectives. Meaning, there is focus on one of these areas to the exclusion of the others. This indicates sub-optimal strategic alignment of the measurement systems adopted by most medium sized service firms in Kenya, where emphasis is on short-term goals rather than long-term outcomes. The findings are supported by Virtanen (2017), that even though the value of strategic planning is recognized by most SME, strategic measurement systems are rarely aligned with strategy in SMEs.

4.6.4 Flexibility of Strategic Measurement System

The study sought to establish the extent of flexibility of the performance measurement systems adopted by medium sized service firms in Kenya. The respondents were asked to indicate the frequency of which key performance indicators are reported, how often the performance measurement systems are reviewed and what kind of tools are mostly used for collection of performance data. Table 4.34 illustrates the findings.

Table 4.34: ***SMS Reporting and Review***

	Quarterly	Bi-annually	Annually	Every 3 years	Every 5 years	Every 10 years	Never
Frequency of SMS reporting	0.7%	10.1%	83.8%	2.7%	2.0%	0.0%	0.7%
Frequency of SMS review	0.0%	1.2%	33.3%	36.9%	6.0%	2.0%	19.0%

Table 4.34 reveals that most firms report performance outputs once a year (83.8%). However, one third (33.3%) of the firms indicated that they review their performance measurement systems every year, 36.9% review after three years while 19.0% have no planned review time tables.

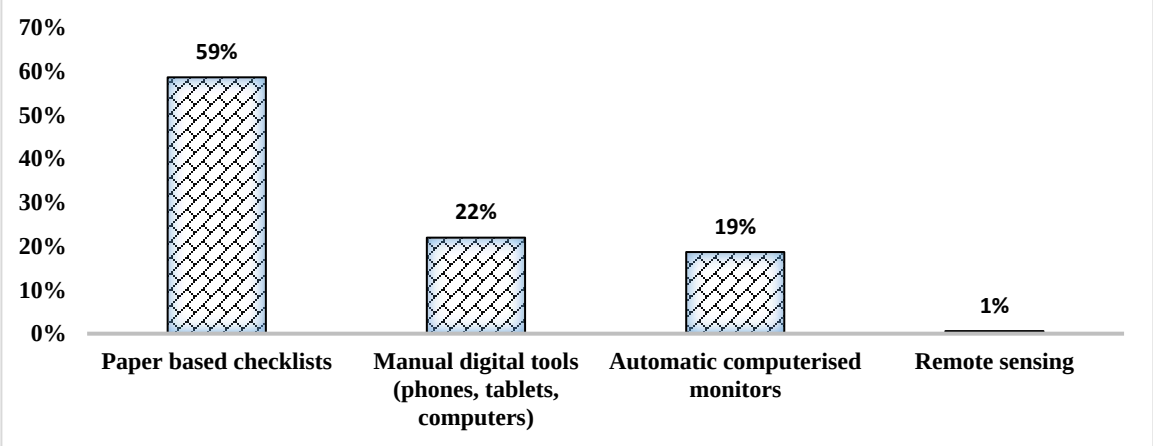


Figure 4.7: Data Collection tools

Figure 4.7 indicates that majority of the firms (58.7%) use paper-based checklists for collecting performance data while 22% use manual digital tools such as phones, tablets and computers, 18.7% use automatic computerised monitors, and 0.6% use remote sensing. High percentage use of paper checklists shows that most medium sized service firms in Kenya adopt use of performance measurement systems supported by manual information management infrastructure. Such manual systems take longer in data collection, analysis and management. Hence, are comparatively time consuming, less integrated and less responsive to drastic changes. Implying reduced agility (flexibility) of the systems. According to Alfaro-Saiz, Verdecho and Rodriguez-Rodriguez (2013), for performance system to be agile (flexible) and adaptive, it requires an information architecture that facilitates the integration of the system, establishes a mechanism for standardization and compatibility as well as facilitate timely collection, and processing of information.

The findings indicate that majority of the medium sized service firms in Kenya generate just one annual performance report (83.3%); wait for at least 1 year to review effectiveness of their performance measurement systems (97.8%); and do not have an agile, adaptive and integrated information management infrastructure (58%).

The findings are in line with assertions by Fauske *et al*. (2008); Masri (2013); and Felizardo *et al*. (2017) that performance measurement systems used by small and medium sized enterprises do not seem to be flexible enough to take into account any changes in the environment. To estimate the effect of flexibility of strategic measurement system on firm performance, Likert type of scale was used. The respondents were asked to indicate whether they agreed that the measures are sufficiently adaptable, innovative, responsive or versatile. Findings are shown in Table 4.35.

Table 4.35: *Flexibility of Strategic Measurement Systems*

Flexibility of PMS (*n=150*)	Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)	Mean	Std. Dev.
			Adaptability				
Continuously monitoring internal development	7.0%	13.0%	18.0%	43.0%	19.0%	3.5	0.75
Continuously monitoring external development	10.0%	13.0%	27.0%	37.0%	13.0%	3.3	0.88
Institute changes in the system	11.3%	70.0%	19.0%	0.0%	0.0%	2.07	0.54
Sub Aggregate score	9.4%	32.0%	21.2%	26.7%	10.7%	2.96	0.72
			Innovativeness				
Review objectives, targets, standards and assumptions	3.0%	3.0%	18.0%	60.0%	16.0%	3.8	0.67
Review measures	3.0%	7.0%	9.0%	48.0%	34.0%	4.0	0.70
Stimulate generation of new ways for managing tasks	12.0%	41.0%	41.0%	6.0%	0.0%	2.41	0.77
Sub Aggregate score	6.0%	16.9%	22.8%	38.0%	16.7%	3.40	0.71
			Responsiveness				
Trigger rapid response to customer demands	1.3%	33.0%	22.0%	21.0%	23.0%	3.3	0.89
			Versatility				
Provide information for alternative resource use	6.0%	24.7%	58.7%	10.7%	0.0%	2.74	0.72
Grand Aggregate Score	5.7%	26.7%	31.2%	24.1%	12.6%	3.10	0.76

Table 4.35 shows that on average the respondents somehow agreed that their firm's performance measurement systems are adaptable (*M*=2.9, *SD*=0.22), innovative (*M*=3.4, *SD*=0.71), responsive (*M=3.3, SD=0.89*) and versatile (*M=2.74, SD=0.72).* Overall, Table 4.35 shows that on average of the respondents somehow agreed (*M*=3.1, *SD*=0.76) that the systems are flexible. This corroborates findings in Table 4.34 and Figure 4.7, which established that most medium sized service firms in Kenya generate few performance reports, less often review their measurement systems effectiveness (after a

year); and lack an agile, adaptive and integrated information management infrastructure (use manual information management systems).

The findings are in line with Jamil and Mohamed (2011) assertion that the ability to keep performance measurement systems continuously updated is a challenge for every firm, but particularly for small and medium establishments, which are characterized by a lack of adequate resources, and managerial expertise for initiating frequently changes in the measurement systems to react quickly to changes in their environments. However, as indicated by Wu (2009) performance measurement systems should involve flexible frameworks that can be adapted dynamically to suit the changes in the performance measurement process.

It must be noted that flexibility in performance measurement systems framework is particularly important for smaller firms due to their very nature of being less bureaucratic and more dynamic as compared to large firms as well as due to the nature of the extremely flexible and reactive market situations they operate. In fact, smaller firms mainly thrive on their ability to quickly meet customer requests and needs and use their flexibility as a primary source of competitive advantage. Thus, they need a flexible performance measurement systems framework to support this competitive advantage.

4.6.5 Customer Value

The study sought to establish performance level of medium sized service firms in Kenya. The study adopted the results and determinants framework. Firm performance was conceptualised such that leading indicators (customer value) mediate the relationship between performance measurement system and lagging indicators (strategic outputs). Leading indicators constituted the customer value, which was measured as a composite of service quality (reliability, responsiveness, and availability); service flexibility; resource utilization (efficiency); and service innovations. Table 4.36 captures the findings for service quality and service flexibility.

Table 4.36 indicates that on average while the respondents strongly agreed that their services are reliable (M=4.3, SD=0.74) and agreed that that their services are responsive

(*M*=3.6, *SD*=1.2), the study was non-conclusive as to whether the services were flexible enough to meet individual customers' needs (*M*=3.0, *SD*=0.68). The findings in Table 4.36 however, shows that on average the respondents disagreed (*M*=2.1, *SD*=0.86) that services are available at all time with a variable wait period and with minimal customer complaints. In summary, Table 4.36 shows that on average the respondents somehow agreed that they have quality services which are reliable, responsive and available at all times (*M*=3.3, *SD*=0.95) and that their services are flexible to meet individual customer's demands (*M*=3.0, *SD*=0.68).

Table 4.36: ***Service Quality and Flexibility***

Service quality & Flexibility (n=150)	Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)	Mean	Std. Dev.
A. Service Quality							
i. Service Reliability							
Targets are met by staff	0.0%	2.2%	11.7%	39.1%	46.9%	4.3	0.76
Accurate records kept by staff	0.0%	2.2%	8.4%	45.9%	43.6%	4.3	0.71
Sub Aggregate	*0.0%*	*2.2%*	*10.1%*	*42.5%*	*45.3%*	*4.3*	*0.74*
ii. Service Responsiveness							
Staff work well without supervision	11.2%	9.5%	15.6%	44.1%	19.6%	3.5	1.20
Staff communicate well to clients	8.9%	12.8%	13.4%	33.5%	31.3%	3.6	1.30
Prompt service delivery	10.1%	17.3%	10.6%	27.9%	34.1%	3.5	1.40
Services are affordable	5.0%	10.6%	8.4%	40.2%	35.8%	3.9	1.10
Sub Aggregate score	*8.8%*	*12.6%*	*12.0%*	*36.4%*	*30.2%*	*3.6*	*1.25*
iii. Service Availability							
Service available at all times	46.4%	41.9%	9.5%	1.7%	0.6%	1.6	0.76
Limited customer complaints	20.1%	22.3%	21.8%	27.8%	7.8%	2.8	1.20
Service order wait period is variable	20.7%	67.0%	10.6%	1.1%	0.6%	1.9	0.63
Sub Aggregate score	*29.1%*	*43.7%*	*14.0%*	*10.2%*	*3.0%*	*2.1*	*0.86*
Aggregate-Service Quality	*12.6%*	*19.5%*	*12.0%*	*29.7%*	*26.2%*	*3.3*	*0.95*
B. Service flexibility							
Service delivery variable	25.7%	64.8%	7.3%	1.1%	1.1%	1.8	0.67
Variable service specification	30.7%	63.1%	4.5%	1.1%	0.6%	1.7	0.63
Frequent update of service procedures	0.0%	0.6%	14.5%	48.1%	36.9%	4.2	0.71
Innovative employees	0.0%	2.2%	7.3%	44.7%	45.8%	4.3	0.71
Aggregate score flexibility	***14.1%***	***32.7%***	***8.4%***	***23.8%***	***21.1%***	***3.0***	***0.68***

Findings of limited service flexibility and availability indicate difficulty in adapting to market demand and changes. This is probably due to lack of adequate resources to create flexibility and availability of services as opined by Jamil and Mohamed (2011). Since,

flexibility is a major tool in achieving sustainable competitive advantages; the findings are line with the general findings that due to lack of sustainable competitive advantages by the virtue of focusing on short term financial measures, small and medium enterprises register very high failure rate (Garengo, & Bernardi, 2007b; Maduekwe & Kamala, 2016).

The study then sought to evaluate the level of resource utilization (efficiency) and innovation. Respondents were asked to indicate their firm's level of average efficiency in the preceding 12 months and innovation performance in the preceding 3 years. The findings are shown in Table 4.37.

Table 4.37: ***Service Efficiency and Innovation***

Efficiency	**<60% (1)**	**61-70% (2)**	**71-80% (3)**	**81-90% (4)**	**>90% (5)**	**Mean**	**Std. Dev.**
Firms average efficiency in the preceding 12 months (*n*=150)	2.3%	6.3%	18.3%	50.9%	22.3%	3.85	0.91
Innovation	**None (1)**	**1-2 (2)**	**3-4 (3)**	**4-6 (4)**	**>6 (5)**	**Mean**	**Std. Dev.**
No. of new service lines that have been developed and launched by your firm in the last 3 years (*n*=150)	46.6%	18.5%	21.3%	11.2%	2.2%	2.04	1.16
No. of new service lines introduced by your firm in the last three years but have since been removed from your sales line (*n*=150)	78.1%	20.2%	1.1%	0.6%	0.0%	1.24	0.49

Table 4.37 shows high level of efficiency/resource utilization as 73.2% indicated that their firms registered an average efficiency of >80% in the preceding 12 months. This is not unusual in the service sector. Summary statistics by Public Services International Research Unit (PSIRU) on efficiencies in the private and public sector showed an average efficiency of 80.1% in the for-profit service firms (hospital) and 82.5% for not-for-profit service firms (hospitals) in the European Union (PSIRU, 2014).

Table 4.37 also shows that innovation performance was generally poor as only 53.6% of the firms launched new products in the preceeding 3 years with 61% of all new service lines launched in the preceding 3 years had been pulled out of the service lines. This shows a very high failure rate of new service lines attributed to what Susanto and Wasito (2017) say is lack of structured marketing plan by small and medium sized enterprises and

difficulty they face in adapting to market change strategies and competing with big companies as small and medium sized enterprises business owners do not understand market orientation and focus only on customers. In addition, Fatoki (2014) identified the four primary causes of new small and medium sized enterprise ventures failure as lack of management skills, poor product design, lack of technical skills and lastly inadequate capitalization.

4.6.6 Competitiveness and Profitability

Lagging indicators (sustainable competitive advantages) had two sets of measurements. Firm's competitiveness (Sales growth, customer satisfaction and loyalty) and firm financial performance (profitability). Table 4.38 illustrates the results.

Table 4.38: ***Lagging Indicators (Strategic Results)***

Sustainable Competitive Advantages							
Scale *(n=150)*	**<16% (1)**	**16-30% (2)**	**31-45% (3)**	**46-60% (4)**	**>60% (5)**	**Mean**	**Std. Dev.**
a) Sales growth in the preceding year	0.0%	76.0%	11.7%	10.6%	1.7%	21.6	0.74
Scale *(n=150)*	**Strongly disagree (1)**	**Disagree (2)**	**Somehow agree (3)**	**Agree (4)**	**Strongly agree (5)**	**Mean**	**Std. Dev.**
Customer satisfaction & Loyalty							
Most of our new clients come through referrals	0.0%	0.6%	4.5%	24.0%	70.9%	4.6	0.58
Repeat customers form our main client base	0.0%	0.6%	1.7%	30.3%	66.5%	4.6	0.66
Customers are willing to pay more for services	0.6%	9.5%	19.0%	36.9%	34.1%	3.9	0.98
Aggregate Score	*0.0%*	*3.6%*	*8.4%*	*30.4%*	*57.2%*	*4.4*	*0.74*
Firm Profitability							
Scale *(n=150)*	<10% (1)	10-15% (2)	16-25% (3)	26-35% (4)	36-50% (4)	Mean	Std. Dev.
Net Profit in past year	7.5%	71.3%	10.0%	0.7%	0.0%	12.2	2.76

Table 4.38 shows that majority of the firms (76%) recorded an average of between 16 to 30% sales growth in the preceding financial period (12 months). Majority (87.6%) also strongly agreed that most of their customers are loyal customers who refer new customers (*M*=4.6, *SD*=0.58) and always come back (*M*=4.6, *SD*=0.66). Table 4.38 further reveals satisfied customers willing to pay more for the services they are offered (*M*=3.9, *SD*=0.98). Finally, Table 4.38 reveals that majority (81.3%) of the firm's earned a net

profit between 10-25% in the preceding financial period. The low average sales growth rate and low profitability shows an industry whose strategic performance is not robust. This can be attributed to focus on short-term financial objectives and operational efficiencies rather than a balanced blend of financial and strategic outcomes. The study indicated limited focus on measuring employee development and innovation. This can be directly linked to the observed poor performance of innovative ventures and low sales growth.

4.7 Regression Analyses

Regression analysis was used to test the research hypotheses. This section presents findings on the diagnostic tests, hypothesis testing, and the optimal model. The findings are presented and discussed in line with the study objectives. Several diagnostic tests preceded the regression analysis to ascertain the basic assumptions for regression analysis. The tests included tests for normality, linearity, homogeneity, autocorrelation, multi-collinearity and model specification.

4.7.1 Normality Tests

Linear regression analysis requires that regression residuals (error terms) to be approximately normally distributed. Graphical and statistical tests of Kurtosis, Skewness, W/S tests (where w=range of data set and s=standard deviation), and Shapiro-Wilk test outputs (Doane & Seward, 2011) were used to test the hypothesis of normal distribution.

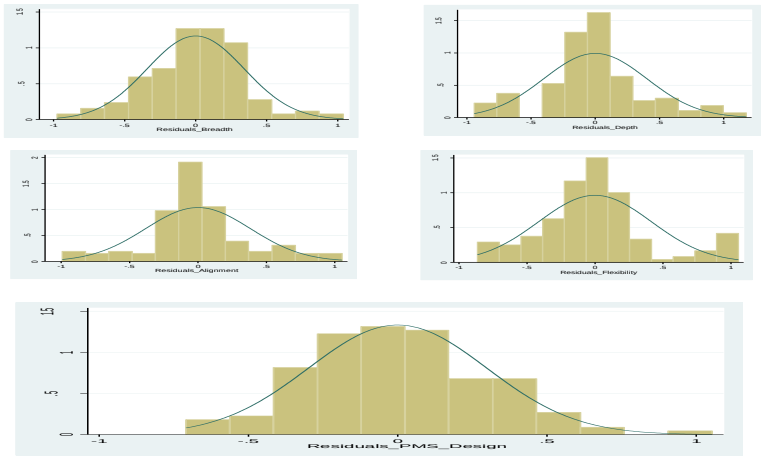


Figure 4.8: Normality graphs

The graphical presentation approximates normal distribution of the residuals (error terms) of the variables. This was confirmed using statistical tests. Table 4.38 illustrates the findings for the statistical tests for normality.

Table 4.39: ***Test for Normality for the Regression Residues (Errors)***

Measure	Variable	Breadth	Depth	Align	Flex	Multivariate
Std. dev.	Statistic	.996	.996	.996	.996	.986
Range	Statistic	5.86	5.18	5.30	4.61	5.79
Skewness	Statistic	-.106	-.310	.160	.162	.306
	Std. Error	.198	.198	.198	.198	.198
	Skewness Z-value (Statistic/SE)	-.535	-1.56	.808	.818	1.54
	Probability	±1.96	±1.96	±1.96	±1.96	±1.96
	Decision	Normal	Normal	Normal	Normal	Normal
Kurtosis	Statistic	.721	.107	.277	.660	.331
	Std. Error	.394	.394	.394	.394	.394
	Kurtosis Z-value (Statistic/SE)	1.82	.027	.294	.165	.840
	Probability	±1.96	±1.96	±1.96	±1.96	±1.96
	Decision	Normal	Normal	Normal	Normal	Normal
W/S Test	q-calculated (Range/SD)	6.06	5.20	5.32	4.62	5.87
	Alpha	(150, .05)	(150, .05)	(150, .05)	(150, .05)	(150, .05)
	Critical range (q)	4.59-6.18	4.59-6.18	4.59-6.18	4.59-6.18	4.59-6.18
	Decision	Normal	Normal	Normal	Normal	Normal
Shapiro-Wilk test	Statistic	.982	.983	.935	.931	.991
	df	150	150	150	150	150
	Sig.	.067	.062	.000	.000	.459
	Probability	0.05	0.05	0.05	0.05	0.05
	Decision	Normal	Normal	Non-Normal	Non-Normal	Normal

Table 4.38 shows that Shapiro-Wilk and W/S tests (Razali & Wah, 2011) established that the regression residues (errors) for breadth, depth and the multivariate were approximately normally distributed. However, based on the Shapiro-Wilk test, the regression residues (errors) for the alignment and flexibility constructs indicated non-normality. However, considering the sensitivity of Shapiro-Wilk test to data range and the fact that these constructs (alignment and flexibility) met the thresholds for the other three (3) alternative normality tests of Skewness, Kurtosis and W/S test, the constructs were retained in the model (Cramer & Howitt, 2004; Doane & Seward, 2011).

4.7.2 Linearity Test

The tests of assumption of linearity utilized graphical method and comparison of group means to test whether or not the means of several groups are all equal.

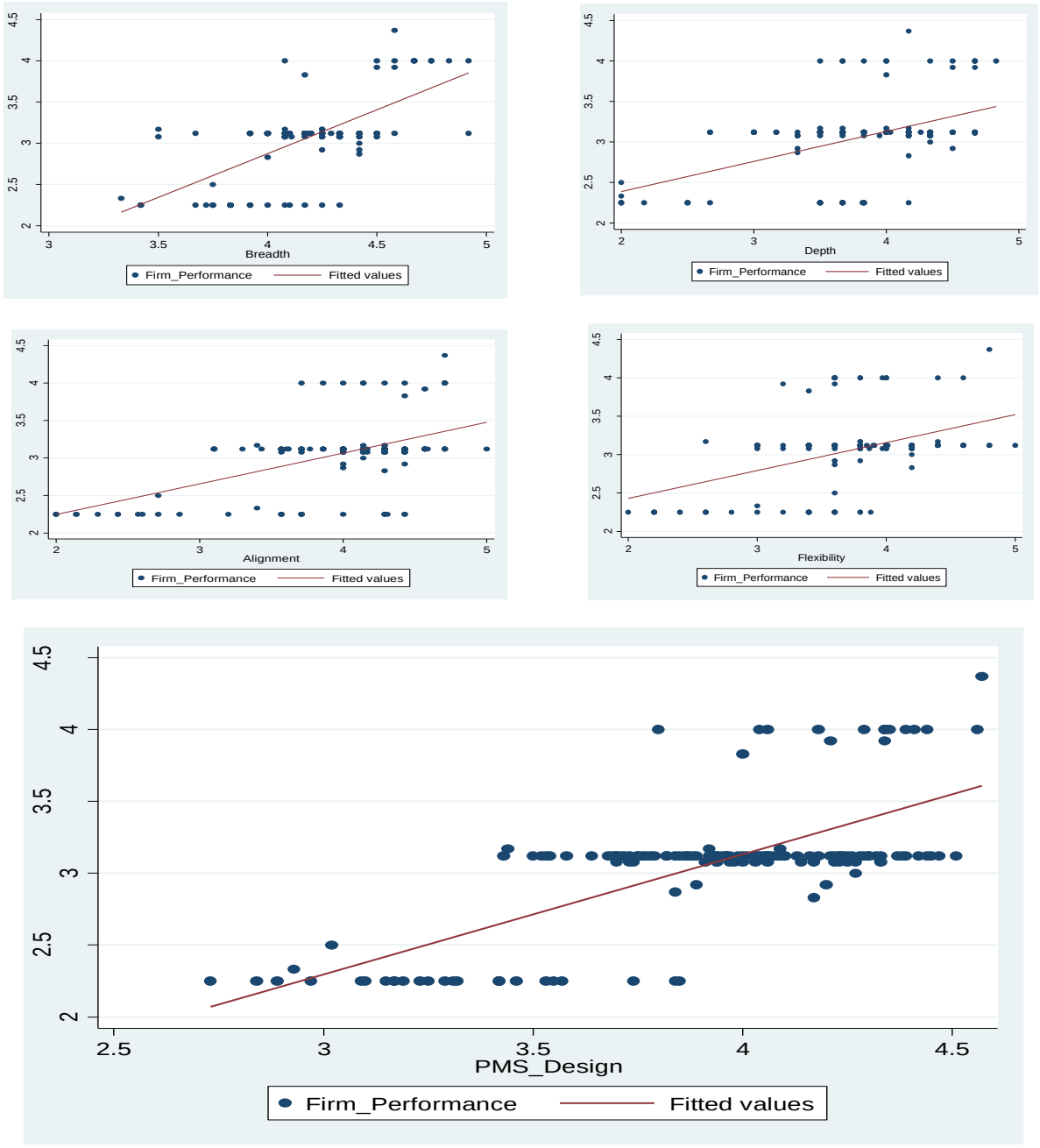


Figure 4.9*:* Linearity graphs

The fitted graphical presentation approximate positive linear regression between the predicted variable and the predictor variables. Comparison of means test was used to confirm whether or not the means of several groups are all equal, linearity is considered significant if the probability of deviation from linearity statistics significantly deviates from zero (> alpha) or when the probability of the *F*-statistics is less than the s*et al*pha level (Garson, 2012).

Table 4.40: ***ANOVA Table for Testing Linearity***

			Sum of Squares	df	Mean Square	F	Sig.
Performance *Breadth	Between Groups	(Combined)	21.384	21	.891	10.42	.000
		Linearity	14.640	1	14.640	171.2	.000
		Deviation from Linearity	6.745	23	.293	3.430	.000
	Within Groups		10.687	125	.085		
	Total		32.071	149			
Performance *Depth	Between Groups	(Combined)	11.412	19	.601	3.779	.000
		Linearity	8.057	1	8.057	50.69	.000
		Deviation from Linearity	3.355	18	.186	1.173	.293
	Within Groups		14.174	20.6	130	.159	
	Total		21.274	32.0	149		
Performance *Alignment	Between Groups	(Combined)	14.994	28	.535	3.794	.000
		Linearity	10.095	1	10.095	71.52	.000
		Deviation from Linearity	4.899	27	.181	1.286	.180
	Within Groups		15.044	17.0	121	.141	
	Total		21.274	32.0	149		
Performance *Flexibility	Between Groups	(Combined)	10.121	22	.460	2.622	.000
		Linearity	6.550	1	6.55	37.89	.000
		Deviation from Linearity	3.572	21	.170	.984	.487
	Within Groups		21.950	127	.173		
	Total		32.071	149			

Results of the linearity test in Table 4.40 reveal that at 95% level of confidence, the probability for deviation from linearity of depth, alignment, and flexibility constructs were insignificant ($p>0.05$). However, even though the probability for deviation from linearity of the breadth construct was <0.05, the probability of the *F*-statistics was below the 0.05 threshold. Hence, the independent variables were considered to be linearly related to the dependent variable as the probability values were within the thresholds recommended by Garson (2012).

4.7.3 Test for Homoscedasticity

Test for homogeneity of variance of the error terms was evaluated using two methods, Levene's test of equality of variances and Breusch-Pagan/ Cook-Weisberg Test for Heteroskedasticity. For Levene's test of equality of variances firm size (number of employees) was used as the fixed factor and univariate analysis of general linear model was used to test the hypothesis that error variance of the variables is equal across groups

Table 4.41*: Levene's Test of Equality of Error Variances[a]*

Fixed Factor: Firm size (number of employees)				
	F	df1	df2	Sig.
Breadth	1.093	4	145	.362
Depth	1.620	4	145	.172
Alignment	.820	4	145	.515
Flexibility	.474	4	145	.755
Performance	.439	**4**	145	.780

Tests the H_0 that the error variance of the dependent variable is equal across groups.

Table 4.41 shows that Levene's test was insignificant for breadth (F (4, 145) =1.093, p=.362); depth (F (4, 145) =1.620, p=.172); alignment (F (4, 145) =.820, p=.515); flexibility (F (4, 145) =.474, p=.755); and firm performance (F (4, 145) =.439, p=.780). This, showed that the assumption of homoscedasticity was met (Field, 2013). These results were however, further subjected to Breusch-Pagan/ Cook-Weisberg Test for Heteroskedasticity for validation.

Table 4.42*: Breusch-Pagan/ Cook-Weisberg Test for Heteroskedasticity*

HO: Constant variable
Variables: fitted values of Sustainable performance

Measure	Breadth	Depth	Alignment	Flexibility	Multivariate
chi2 (1)	0.16	0.57	4.03	0.88	0.84
Prob>chi2	0.6885	0.4493	0.0446	0.3495	0.3605

Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity results show that the probability value of the chi-square statistic for the multivariate regression was greater than 0.05 ($\chi^2(4, N = 150) = 0.84, p = .3605$). Therefore, according to Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity results, the null hypothesis of constant variance cannot be rejected at 5% level of significance. It implies inadequate evidence to indicate presence of heteroscedasticity in the residuals of the scales.

4.7.4 Test for Autocorrelation

Independence of the residuals is one of the basic assumptions of regression analysis. Autocorrelation tests confirms unequal covariance between the error terms in the model, Durbin-Watson (D-W) test measures autocorrelation and its values range from 0 to 4 with D-W values between 1.5 and 2.5 indicating independence of the error terms (Field, 2013).

Table 4.43: ***Test for Autocorrelation***

Model	Durbin-Watson Statistic (d)	Acceptable range	Results
Performance←Breadth	1.859	1.5<d<2.5	Acceptable
Performance←Depth	1.942	1.5<d<2.5	Acceptable
Performance←Alignment	1.785	1.5<d<2.5	Acceptable
Performance←Flexibility	1.617	1.5<d<2.5	Acceptable
Performance←Breadth, Depth, Alignment, Flexibility	1.745	1.5<d<2.5	Acceptable

Table 4.43 shows that D-W values ranged between 1.617 and 1.942. This confirms that all the variables yielded D-W values within the recommended range (Field, 2013) indicating that the errors terms of the regression models were not auto correlated.

4.7.5 Test for Multi-collinearity

Multi-collinearity tests of tolerance and variance inflation factors (VIF) were conducted to test whether independent variables were correlated. That is, whether within the set of independent variables, some of the independent variables predicted other independent variables (collinearity). According to Wooldridge (2013), tolerance values less than 0.1 and VIF values greater than 10 indicates multi-collinearity.

Table 4.44: ***Test for Multi-collinearity***

Model		Collinearity Statistics		Results
		Tolerance	VIF	
1	Breadth	.716	1.396	Acceptable
	Depth	.707	1.413	Acceptable
	Alignment	.643	1.556	Acceptable
	Flexibility	.826	1.210	Acceptable

a. Dependent Variable: Sustainable Performance

Results of the collinearity statistics in Table 4.44 indicated that all tolerance values were > 0.1 and VIF values < 10 confirming lack of multi-collinearity between the independent variables in the model as recommended by Wooldridge (2013).

4.7.6 Test for Model Misspecification

The test is based on the assumption that in a population, the mean of the unobservable error does not depend on the values of the explanatory variable. That is, the error term has an expected value of zero given any values of the independent variable (Wooldridge, 2013). Ramsey's Regression Equation Specification Error (RESET) test was conducted by including the cubes of the predicted values in the proposed linear regression model to detect likelihood of model misspecification. This was to check if the proposed linear model was the best fit for the data or if other models would yield better results (Wooldridge, 2013).

Table 4.45: ***Ramsey RESET***

Model	Predictors	R-squared	N
Restricted model	Breadth, Depth, Alignment, Flexibility	0.585172	150
Unrestricted model	Breadth, Depth, Alignment, Flexibility, yhart^3	0.590092	150

$$F \text{ calculated} = \frac{\{\frac{(R-SquaredNew-R-SquaredOld)}{Number\ of\ added\ variables}\}}{\{(1-R-SquaredNew)/\ (N-number\ of\ estimated\ coefficients\ in\ new\ regression)\}}$$

$$= \{(0.590092-0.585172)/1\}/\ \{(1-0.590092)/\ (150-5)\}$$

$$= 1.74,\ p = 0.129$$

F critical (0.05, 5,144) = 2.28, p =0.05.

The hypotheses were, H_o: β=0; H_a: $\beta \neq 0$. The calculated Ramsey RESET statistic was 1.74, p-value= 0.129. Since F-calculated (1.74) < F-critical (2.28), and the associated p value (0.129) > alpha (0.05), we fail to reject the null hypothesis (H_o) at 95% significance level. Meaning, at 95% level of confidence, there was no statistically significant evidence that beta (β) is not equal to zero (0). Thus, there was no sign of model misspecification or non-linearity. Based on the Ramsey RESET test, the linear model had no omitted variables and adequately fitted the data (Wooldridge, 2013).

4.8 Test for Hypotheses

To test the study hypotheses, multivariate analysis was conducted. An index for each construct was constructed by averaging the mean scores for the test items in each

construct. Scores from various indicators were rescaled into a 1 to 5 before calculating the indices. Hypothesis testing used 95% confidence level for drawing conclusions. The analysis involved direct, indirect, and moderated relationships between the predictor and outcome variables. Correlation test was first run between the independent variables to confirm discriminant validity and lack of multi-collinearity. The correlation results are shown in Table 4.46.

Table 4.46: ***Correlations of the Independent Variables***

		Breadth	**Depth**	**Alignment**	**Flexibility**
Breadth	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	150			
Depth	Pearson Correlation	.421**	1		
	Sig. (2-tailed)	.000			
	N	150	150		
Alignment	Pearson Correlation	.459**	.493**	1	
	Sig. (2-tailed)	.000	.000		
	N	150	150	150	
Flexibility	Pearson Correlation	.330**	.255**	.375**	1
	Sig. (2-tailed)	.000	.002	.000	
	N	150	150	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation values shown in Table 4.46 are substantially lower than alpha (<0.5) to cause problems of multi-collinearity. According to Field (2013), correlation values above 0.85 are a major concern of multi-collinearity and a sign of failure to meet discriminant validity. Hence, the findings established independence of the variables.

To run the regression, an index score for performance was calculated as a composite of competitiveness and profitability while determinants of performance (customer value) was calculated as a composite of service quality, flexibility, resource utilization and innovation. Strategic measurement system design was calculated as a composite of breath, depth, alignment, and flexibility. The assumption of the study was that an effective strategic measurement system needs to be broad enough to cover all aspects of the organization, have adequate detail (depth) to generate critical information, be aligned to firm objectives, and be flexible to address emerging issues (Lima *et al*., 2009). Therefore, a higher score for strategic measurement system meant that the system was strategic in

nature while lower scores indicated systems, which are less strategic. The multiple regression results are shown in Table 4.47.

Table 4.47: ***Hypotheses Testing***

Goodness of Fit	**df**	**Test Statistics**	**SE**		Sig.		
R-Squared		.585	.302				
Adjusted R^2		.574	.302				
F-Statistic	(4,145)	51.136			.000		
Durbin-Watson		1.938					
Shapiro-Wilk test	(150)	0.991			.459		
		Multiple Linear Regression Results					
Dependent Variable= Performance	**VIF**	**Unstandardized Coefficient**		**Standardized Coefficient**	**t-statistics**	**Sig.**	**Associated ΔR^2**
		B	**SE**	**Beta**			
Constant		-1.51	.355		-4.265	.000	
Breadth	1.396	.712	.099	.453	7.162	.000	.147; p<.001
Depth	1.413	.121	.047	.163	2.564	.011	.019; p=.011
Alignment	1.556	.149	.049	.204	3.054	.003	.027; p=.003
Flexibility	1.210	.148	.047	.184	3.134	.002	.028; p=.002

Multiple regression analysis was used to test if strategic measurement system design significantly predicted performance. The regression results indicated in Table 4.47 show that the four predictors explained 57.4% variance in the predicted variable (adjusted R^2 = 0.574, F (4, 145) = 51.136, p<.001). It was found that breadth of SMS significantly predicted performance (B_1=0.712, p<.001), likewise depth of SMS (B_2=0.121, p=.011), alignment of SMS (B_3=0.149, p=.003), and flexibility of SMS (B_4=0.148, p=.002).

The multiple liner regression model is presented below.

$$Y = -1.51 + 0.712\ X_{11} + 0.121\ X_{12} + 0.149\ X_{13} + 0.148\ X_{14} + \varepsilon$$

Where: Y is the performance

X_{11} is the breadth of the strategic measurement system

X_{12} is the depth of the strategic measurement system

X_{13} is the strategic alignment of the measurement system

X_{14} is the flexibility of the strategic measurement system

ε is the error term

Table 4.47 shows that holding the entire set of independent variables constant (zero); performance would be -1.51. Meaning, without strategic measurement system, firm performance would be negative. This is unsurprising, as without subjecting organizational activities to performance measures would mean lack of control on how organizational resources are applied leading to adverse results.

The absolute values for standardized coefficients in Table 4.47 also show that in the model, breadth of strategic measurement system has the single largest effect on performance (β_1=0.453, p<0.01). Meaning a change in breadth index by one standard deviation leads to 0.453 standard deviation change in performance. This was followed by strategic alignment (β_3=0.204, p=0.03), flexibility (β_4=0.184, p=0.02) and lastly depth of the SMS (β_2=0.163, p=0.011). That is, individual variable's effect on performance caused by a unit change in breadth of SMS is approximately 2.8 times that of depth of SMS, 2.2 times that of strategic alignment of the SMS and 2.5 times that of flexibility of the SMS.

Consistent with other empirical literature, the findings show that medium sized service firms in Kenya should strive for broader strategic measurement system that give an overall view of the organization Garengo and Bernardi (2007b). Even though having detailed strategic measures are equally significant, the findings indicate that over emphasis on detail may not yield as much impact as compared to broadening the scope of the strategic measurement system to encompasses all operational and strategic activities (Wasneiewski, 2017).

From the findings in Table 4.47, the study concludes that there is a positive significant effect of strategic measurement system design on performance of medium sized service firms in Kenya. Confirming the assumption by Neetu, Taticchi and Sushil (2015) that SMS with broader scopes, that generate detailed (deep) information, are strategically aligned to organizational objectives, and are flexible enough to address emerging issues leads to better firm performance. The conclusion of the study is consistent with other researchers such as Franco-Santos and Bourne (2005); Neetu *et al*. (2011); and Santos and Brito (2012) to the effect that strategic measurement system design has a positive

effect on firm performance. In this case, design factors enable an organization to develop an effective performance measurement system with the right composition of measures for collecting, analysing, and reporting performance information that stimulate learning, innovations, and corrective actions for better organizational performance.

The conclusion also agrees with organizational learning and RBV theoretical propositions that use of strategic performance measurement systems stimulate learning frameworks, which enhance organizational capabilities such as innovativeness, flexibility, time to market, organizational responsiveness, and decision-making (Yuliansyah and Khan, 2015). Therefore, an appropriately designed strategic measurement system can be source of valuable, rare, inimitable, and non-substitutable capabilities unique to the firm that result in sustainable competitive advantages (Kraaijenbrink, *et al*., 2010).

However, as observed from the empirical literature review, majority of prior studies only focused on limited number of variables. Majority of prior studies only looked at singular or limited variables at a time and did not consider the interactive effects of several factors studied at the same time (Antony & Bhattacharyya, 2010b; Lee & Wong, 2015; Saunila, *et al*., 2014). Moreover, the use of financial measures as a sole variable of performance is predominant (Hinton & Barnes, 2009; McCann & Barlow, 2015).

This study adds to the existing body of empirical literature by confirming that breadth, depth, strategic alignment, and flexibility of strategic measurement system jointly and separately has a significant positive influence on performance of medium sized service firms in Kenya. Further, sustainable competitive advantage defined performance in this study, shifting the definition of performance from a short-term to strategic outcomes.

4.8.1 Test of Hypothesis One

The first study specific objective sought to determine the effect of the breadth of strategic measurement system on performance of medium sized service firms in Kenya. This was guided by the following null hypothesis;

H_{01}: Breadth of strategic measurement system has no effect on performance of medium sized service firms in Kenya.

The multiple regression model estimated in Table 4.47 revealed that the effect of breadth of strategic measurement system on performance is statistically significant (B= 0.712; t (145) = 7.162; p <.001). Hence, at 95% level of confidence, breadth of strategic measurement system has a positive effect on performance. These results illustrate that keeping all other factors constant, a unit increase in breadth of strategic measurement system corresponds on average to 0.712 units increase in firm performance. Multiple regression was then run on the sub constructs of the breadth to determine their effect. The results are shown in Table 4.48

Table 4.48: ***Testing Hypothesis One***

Goodness of Fit	**df**	**Test Statistics**	**SE**	**Sig.**
R-Squared		.526	.3238	
Adjusted R^2		.513	.3238	
F-Statistic	(4,145)	40.21		.000

Multiple Linear Regression Results

Dependent Variable= Performance	**Unstandardized Coefficient**		**Standardized Coefficient**	**t-statistics**	**Sig.**
	B	**SE**	**Beta**		
Constant	-0.348	.288		-1.206	.230
Process perspective	.226	.054	.305	4.223	.000
Actors perspective	.081	.040	.122	2.043	.043
Customers perspective	.220	.051	.292	4.280	.000
Situation perspective	.284	.063	.281	4.508	.000

The regression results indicated in Table 4.48 show that cumulatively, breadth of SMS explained 51.3% variance in the predicted variable (adjusted R^2 = 0.513, F (4, 145) = 40.21, p<.001). It was found that process measures significantly predicted performance (B_1=0.226, p<.001), actors' perspective measures (B_2=0.081, p=.043), customer perspective measures (B_3=0.220, p<.001), and situation perspective measures (B_4=0.284, p<.001). From Table 4.48, a unit change in process measures standard deviation has the highest change in the performance standard deviation (β_1=0.305, p<0.01). This is followed by customer perspective measures (β_1=0.292, p<0.01), situation perspective measures (β_1=0.281, p<0.01) and finally actors' perspective measures (β_1=0.122, p<0.043).

Considered individually, process perspective measures explained 36.1% variance in performance (adjusted $\boldsymbol{R}^2 = 0.361$, $\boldsymbol{F}$ (1, 148) = 85.238, $\boldsymbol{p}<.001$; $\boldsymbol{B}= 0.448$; t (148) = 9.232, $p <.001$). Actors' perspective measures explained 8.3% variance in performance (adjusted $\boldsymbol{R}^2 = 0.083$, $\boldsymbol{F}$ (1, 148) = 14.399, $\boldsymbol{p}<.001$; $\boldsymbol{B}= 0.197$; t (148) = 3.795, $p <.001$). Customers perspective measures explained 31.0% variance in performance (adjusted $\boldsymbol{R}^2 = 0.31$, $\boldsymbol{F}$ (1, 148) = 67.96, $\boldsymbol{p}<.001$; $\boldsymbol{B}= 0.422$; t (148) = 8.244, $p <.001$). Situational perspective measures explained 24.6% variance in performance (adjusted $\boldsymbol{R}^2 = 0.246$, $\boldsymbol{F}$ (1, 148) = 49.668, $\boldsymbol{p}<.001$; $\boldsymbol{B}= 0.506$; t (148) = 7.048, $p <.001$). Thus, individually inclusion of process, actors, customers and situational perspective measures in the SMS have a significant positive effect on performance. However, process perspective measures have the highest effect at 36.1% followed by customer perspective measures (31.0%), situational perspective measures (24.6%) and Actors perspective measures (8.3%). Nonetheless, individual effects are lower compared to the composite effect (51.3%). This underscores the importance of broadening the measures all the key aspects of processes, actors, customers and situational perspectives.

The study concludes that there is a positive significant effect of breadth of strategic measurement system on performance of medium sized service firms in Kenya. The conclusion of the study supports findings by Chimwani *et al*. (2013), Fwaya *et al*. (2010), Kihara (2013), Kumar and Bhagwat (2006) that the impact of strategic measurement systems is influenced by its scope. The reason being that, as indicated by Garengo, Biazzo and Bititci (2005) a broader performance measurement system, which include all key activities within the organization provides a much better view of the organization with the potential of positively influencing performance of the organization.

The conclusion agrees with resource-based view's theoretical propositions that for a firm to achieve a state of sustainable competitive advantages, it must acquire and control valuable, rare, inimitable, and non-substitutable resources and capabilities (Ferreira *et al*., 2011). Having a broad strategic measurement system therefore facilitates development of a pool of vital and unique knowledge about the internal and external state of the

organization. Knowledge and its application are here considered as critical competitive resources. The difference in knowledge resource base due to difference in the scope of strategic measurement system therefore, creates a basis for variation in sustainable performance. Where firms with broader strategic measurement systems have the potential of generating more vital information and knowledge used for developing competitive advantages.

As observed from the empirical literature most studies on the concept of performance measurement systems have not considered the effect of the breadth of strategic measurement system on performance of medium sized service firms in Kenya. For instance, studies by Hinton and Barnes (2009) and Sousa *et al*. (2006) were conducted on UK SMEs. Study by Kumar and Bhagwat (2006) was conducted on Indian SMEs. Study by Saunila, *et al*. (2014) was based on Finish SMEs. Study by Silvi *et al*. (2015) was based on Italian SMEs. While in Kenya, a study by Kihara (2013) was based on Kenya Rural Roads Board and study by Chimwani *et al*. (2013) on manufacturing firms in Kenya. The current study adds to the existing body of empirical literature by confirming that breadth of strategic measurement system significantly influences firm performance. The findings therefore add empirical information for validation of the concept.

4.8.2 Test of Hypothesis Two

The second specific objective sought to establish the effect of depth of strategic measurement system on performance of medium sized service firms in Kenya. This was guided by the following null hypothesis;

H_{02}: Depth of strategic measurement system has no effect on performance of medium sized service firms in Kenya.

The multiple regression model estimated in Table 4.47 revealed that the effect of the depth of strategic measurement system on performance is statistically significant (B = 0.121; t (145) = 2.564; p = .011). Hence, at 95% level of confidence, depth of strategic measurement system has a positive effect on performance. These results illustrate that holding all other factors constant, a unit increase in depth of strategic measurement system

corresponds on average to 0.121 units increase in firm performance. Multiple regression was then run on the sub constructs of the depth to determine their effect. The results are shown in Table 4.49

Table 4.49: ***Testing Hypothesis Two***

Goodness of Fit	**df**	**Test Statistics**	**SE**	**Sig.**
R-Squared		.306	.39179	
Adjusted R^2		.287	.39179	
F-Statistic	(4,145)	15.983		.000

Multiple Linear Regression Results

Dependent Variable= Performance	**Unstandardized Coefficient**		**Standardized Coefficient**	**t-statistics**	**Sig.**
	B	**SE**	**Beta**		
Constant	1.146	.262		4.382	.000
Operational level measures	.220	.069	.273	3.190	.002
Functional level measures	.031	.061	.043	.518	.605
Business level measures	.101	.049	.154	2.064	.041
Corporate level measures	.163	.046	.278	3.558	.001

The regression results indicated in Table 4.49 show that cumulatively depth of SMS explained 28.7% variance in the predicted variable (adjusted R^2 = 0.287, F (4, 145) = 15.983, p<.001). In the combined model, it was found that operational level measures significantly predicted performance (B_1=0.220, p=.002). Likewise, business level measures (B_3=0.101, p=.041), and corporate level measures (B_4=0.163, p=.001). However, functional measures did not have significant effect on the predicted variable (B_2= 0.031, p=.605).

Considered individually, operational level measures explained 20.8% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.208, $\boldsymbol{F}$ (1, 148) = 40.232, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.327; t (148) = 6.343, p <.001). Functional level measures explained 8.9% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.089, $\boldsymbol{F}$ (1, 148) = 15.601, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.228; t (148) = 3.950, p <.001). Business level measures explained 7.5% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.075, $\boldsymbol{F}$ (1, 148) = 13.006, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.187; t (148) = 3.615, p <.001). Corporate level measures explained 18.9% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.189, $\boldsymbol{F}$ (1, 148) = 35.681, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.259; t (148) = 5.973, p <.001). Thus, individually cascading measures across the different levels of the organization has a significant positive effect on performance.

The study concludes that there is a positive significant effect of depth of strategic measurement system on performance of medium sized service firms in Kenya. The conclusion of the study is consistent with other researchers such as Bourne *et al*. (2005); Rompho and Boon-itt (2012); and Konjer (2015) to the effect that depth of strategic measurement system has a positive effect on firm performance.

The conclusion also agrees with decision-making theory's propositions that rational decision-making requires complete and detailed information about a phenomenon (Novicevic, *et al*., 2011). This means that use of detailed measurement systems facilitates provision of the right and complete information for making sound strategic decisions. Otherwise, too shallow performance measurement systems focusing on high-level strategic objectives alone may not capture operational objectives, which have a direct influence on the short-term and long-term performance of the organization.

Empirical studies on the effect of depth of strategic measurement system on performance by Bourne *et al*. (2005), Hudson, *et al*. (2001), and Rompho and Boon-itt (2012) were based on case studies in developed countries. Use of case studies raises concerns on implications for wider validity of the findings. Findings from this study therefore, add to the existing body of literature by providing empirical evidence on the effect of depth of strategic measurement system on performance of medium sized firms in Kenya.

4.8.3 Test of Hypothesis Three

The third specific objective sought to investigate the effect of strategic alignment of the measurement system on performance of medium sized service firms in Kenya. This was guided by the following null hypothesis;

H_{03}: Strategic alignment of measurement system has no effect on performance of medium sized service firms in Kenya.

The multiple regression model estimated in Table 4.47 revealed that the effect of strategic alignment of the measurement systems on performance is statistically significant (B = 0.149; t (145) = 3.054; p =.003). Hence, at 95% level of confidence, strategic alignment of performance measurement system has a positive effect on firm performance. These

results illustrate that holding all the other factors constant, a unit increase in strategic alignment of performance measurement system corresponds on average to 0.149 units increase in firm performance. Multiple regression was then run on the sub constructs of the strategic alignment to determine their effect. The results are shown in Table 4.50

Table 4.50: ***Testing Hypothesis Three***

Goodness of Fit	**df**	**Test Statistics**	**SE**	**Sig.**
R-Squared		.284	.39795	
Adjusted R^2		.264	.39795	
F-Statistic	(4,145)	14.380		.000

	Multiple Linear Regression Results				
Dependent Variable= Performance	**Unstandardized Coefficient**		**Standardized Coefficient**	**t-statistics**	**Sig.**
	B	**SE**	**Beta**		
Constant	1.477	.214		6.916	.000
Employee alignment measures	.038	.046	.069	.843	.405
Work process alignment measures	.062	.054	.105	1.139	.257
Management alignment measures	.133	.059	.212	2.270	.025
Leadership alignment measures	.162	.066	.255	2.471	.015

The regression results indicated in Table 4.50 show that cumulatively, inclusion of measures focusing on alignment explained 26.4% variance in the predicted variable (adjusted R^2 = 0.264, F (4, 145) = 14.380, p<.001). In the combined model, it was found that inclusion of measures focusing on employee alignment (B_1=0.038, p=405) and work process alignment (B_2=0.062, p=.257) were not significant predictors of performance. However, inclusion of measures focusing on management alignment (B_3=0.133, p=.025) and corporate alignment (B_4=0.162, p=.015) were significant predictors of performance.

Considered individually, employee alignment measures explained 9.8% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.098, $\boldsymbol{F}$ (1, 148) = 17.272, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.179; t (148) = 4.156, p <.001). Work process alignment measures explained 15.5% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.155, $\boldsymbol{F}$ (1, 148) = 28.374, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.236; t (148) = 5.327, p <.001). Management alignment measures explained 20.0% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.200, $\boldsymbol{F}$ (1, 148) = 39.296, $\boldsymbol{p}$<0.001; $\boldsymbol{B}$= 0.286; t (148) = 6.188, p <.001). Leadership alignment measures explained 23.0% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.230. $\boldsymbol{F}$ (1, 148) = 45.556, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.309; t (148) = 6.750, p <.001). Thus, individually having

measures which facilitate alignment of employees, work processes, management and leadership has significant positive effect on performance.

The study concludes that there is a positive significant effect of strategic alignment of performance measurement system on performance of medium sized service firms in Kenya. The conclusion of the study is consistent with the works of Alexandra (2015); Carlyle (2013); Cocca and Alberti (2010); and Kekwaletswe and Mathebula (2014) showing that strategic alignment of performance measurement system has a positive effect on firm performance. The proposition is that strategically aligned performance measurement system helps the organization formulate right strategies for implementation and set controls (Wu, 2009).

The conclusion also agrees with decision-making theory's propositions that rational decision-making requires the right and complete information (Novicevic, *et al*., 2011). With the right information, the right decisions for improved performance are likely, leading to better performance. This means that strategically aligned performance measurement system helps in provision of the right information for strategy implementation and control as well as in creating harmony in the various components of the organizational management.

Considering that study by Fauske *et al*. (2008) was based on the manufacturing small and medium enterprises; study by Carlyle (2013) on New Zealand small and medium enterprises; study by Langwerden (2015) on Polish small and medium enterprises and qualitative data; study by Virtanen (2017) on a small Finish firm; and study by Felizardo *et al*. (2017) on 12 Portuguese small and medium enterprises, the findings had limited generalization to medium sized service firms in Kenya. This study adds to the existing body of literature by providing empirical evidence on the effect of strategic alignment of performance measurement system on performance of medium sized firms in Kenya.

4.8.4 Test of Hypothesis Four

The fourth specific objective sought to examine the effect of flexibility of strategic measurement system on performance of medium sized service firms in Kenya. This was guided by the following null hypothesis;

H_{04}: Flexibility of strategic measurement system has no effect on performance of medium sized service firms in Kenya.

The multiple regression model estimated in Table 4.47 revealed that the effect of flexibility of strategic measurement system on firm performance is statistically significant at $B = 0.148$; $t\ (145) = 3.134$; $p = .002$. Hence, at 95% level of confidence, flexibility of strategic measurement system has a positive effect on performance. These results illustrate that keeping all the other factors constant, a unit increase in flexibility of strategic measurement system corresponds on average to 0.148 units increase in firm performance.

Multiple regression was then run on the sub constructs of the flexibility to determine their effect. The results are shown in Table 4.51

Table 4.51: ***Testing Hypothesis Four***

Goodness of Fit	**df**	**Test Statistics**	**SE**	**Sig.**
R-Squared		.274	.40061	
Adjusted R^2		.254	.40061	
F-Statistic	(4,145)	13.709		.000

Multiple Linear Regression Results

Dependent Variable= Performance	**Unstandardized Coefficient**		**Standardized Coefficient**	**t-statistics**	**Sig.**
	B	**SE**	**Beta**		
Constant	1.557	.218			.000
Adaptability	.334	.167	.244	1.997	.048
Responsiveness	.115	.028	.297	4.175	.000
Innovativeness	.003	.151	.030	.216	.829
Versatility	.131	.057	.206	2.316	.022

The regression results indicated in Table 4.51 show that cumulatively flexibility of SMS explained 25.4% variance in the predicted variable (adjusted $R^2 = 0.254$, $F\ (4, 145) = 13.709$, $p<.001$). It was found that Adaptability significantly predicted performance (B_1=0.334, p=.048). Likewise, responsiveness (B_2=0.115, $p<.001$) and versatility

(B_4=0.131, p=.022). However, there lacked adequate empirical evidence to show that innovativeness significantly predicted performance (B_3=0.003, p=.829).

This lack of effect from innovativeness, can be linked to the findings in Table 4.35 which established only a small level of flexibility among the variables to the extent that most medium sized service firms in Kenya generate few performance reports, less often review their performance measurement systems effectiveness (after a year) to stimulate new ways of managing tasks and circumstances.

Considered individually, adaptability explained 14.1% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.141, $\boldsymbol{F}$ (1, 148) = 24.328, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.515; t (148) = 4.932, p <.001). Innovativeness explained 13.3% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.133, $\boldsymbol{F}$ (1, 148) = 23.810, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.408; t (148) = 4,880; p <.001). Responsiveness explained 10.5% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.105, $\boldsymbol{F}$ (1, 148) = 18.463, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.129; t (148) = 4.297; p <.001). Versatility explained 12.0% variance in performance (adjusted $\boldsymbol{R}^2$ = 0.120, $\boldsymbol{F}$ (1, 148) = 21.294, $\boldsymbol{p}$<.001; $\boldsymbol{B}$= 0.226; t (148) = 4.615; p <.001).

Thus, individually adaptability, responsiveness, innovativeness and versatility of SMS have a significant positive effect on performance. However, adaptability has the highest effect at 14.1% followed by innovativeness (13.3%), versatility (12.0%) and responsiveness (10.5%). However, individual effects are lower compared to the composite effect (25.4%).

The study concludes that there is a positive significant effect of flexibility of strategic measurement system on performance of medium sized service firms in Kenya. The conclusion of the study is in line with the works of Jamil & Mohamed (2011); Masri (2013); Raymond *et al*. (2012); and Wu (2009) to the extent that flexibility of strategic measurement system has a positive effect on firm performance. Flexibility of strategic measurement system forms the basis for responding to potential internal or external changes in a timely manner for better organizational performance (Garg & Kumar, 2013).

The conclusion also agrees with dynamic capabilities theory. Dynamic capabilities theory postulates that firms derive competitive advantage from the continuous development, and

reconfiguration of firm-specific resources (Kuuluvainen, 2012). In this case, and as indicated by Sushil (2015), strategic measurement system needs to be flexible to activate adaptiveness and responsiveness to cope with the changing and uncertain business environment as well as endeavour to intentionally create flexibility as a strategic change through leadership change, re-engineering, innovation, use of information, communication technology, and learning orientation.

However, study by Wu (2009) was based on small and medium enterprises in Australia and South China; Jamil & Mohamed (2011) used secondary data; Raymond, *et al*. (2012) focused on small Canadian businesses; Masri (2013) used data with very low response rate (17.5%); and Virtanen (2017) focused on small Finish firms hampering capacity to generalize the findings to medium sized enterprises in Kenya. This study adds to the existing body of literature by providing empirical evidence on the effect of flexibility of performance measurement system on performance of medium sized firms in Kenya.

4.8.5 Test for Hypothesis Five

The fifth specific objective sought to determine the mediating effect of customer value on the relationship between strategic measurement system and performance of medium sized service firms in Kenya. This was guided by the following null hypothesis;

H_{05}: Customer value has no mediating effect on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya.

Regression analysis was used to investigate the null hypothesis that there is no significant mediating effect of customer value on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya. Customer value was measured as a composite of service quality (reliability, responsiveness, and availability); service flexibility; resource utilization (efficiency); and service innovations. The results are illustrated in Table 4.52.

Table 4.52: ***Mediating Effect of Customer Value***

Outcome: Customer value							
	R	R-square	MSE	F	df1	df2	p
	.6928	.4799	.2446	136.5874	1	148	.000
		coefficient	SE	t	p	LLCI	ULCI
constant		-1.0917	.4019	-2.7162	.0074	-1.8860	-.2975
SMS		**1.1981**	.1025	11.6871	.0000	.9955	1.4007
Outcome: Firm Performance							
	R	R-square	MSE	F	df1	df2	p
	.8916	.7950	.0447	285.0811	2	147	.000
		coefficient	SE	t	p	LLCI	ULCI
constant		.3280	.1761	1.8628	.0645	-.0200	.6760
SMS		**.2357**	.0608	3.8782	.0002	.1156	.3559
Customer value		**.5028**	.0351	14.3041	.0000	.4333	.5722
Total Effect Model:							
	R	R-square	MSE	F	df1	df2	p
	.7139	.5097	.1062	153.8699	1	148	.000
		coefficient	SE	t	p	LLCI	ULCI
constant		-.2208	.2649	-.8337	.4058	-.7443	.3026
SMS		.8381	.0676	12.4044	.0000	.7046	.9716
Total and Direct Effects of X on Y							
		Effect	SE	t	p	LLCI	ULCI
Total effect of X on Y		.8381	.0676	12.4044	.0000	.7046	.9716
Direct effect of X on Y		**.2357**	.0608	3.8782	.0002	.1156	.3559
Indirect Effect of X on Y:							
		Effect	BootSE	BootLLCI	BootULCI		
Customer value		**.6024**	.1012	.4126	.8129		
Partially standardized indirect effect(s) of X on Y:							
		Effect	BootSE	BootLLCI	BootULCI		
Customer value		1.2984	.2028	.9221	1.7131		
Completely standardized indirect effect(s) of X on Y:							
		Effect	BootSE	BootLLCI	BootULCI		
Customer value		.5131	.0753	.3635	.6581		

Results in Table 4.52 indicated that strategic measurement system was a significant positive predictor of customer value B= 1.198; t (148) = 11.68; p<.001, and that customer value significantly positively predicted performance, B= 0.5028; t (147) = 14.3041; p<.001. These results fail to accept the mediational null hypothesis of no relation. That is, strategic measurement system was still a significant positive predictor of performance after controlling for the mediator (customer value), B= 0.2357; t (147) = 3.8782; p < 0.001, consistent with partial mediation (Awang, 2015). Approximately 79.5% of the variance in firm performance was accounted for by the two predictors (R^2=.795, F (2, 147) = 285.08, p<.001). The indirect effect was tested using a bootstrap estimation approach at 5,000 and the results indicated that the indirect coefficient was significant,

B= 0.6024, *SE (Boot)* = .1012, 95% CI = .4126, .8129. Thus, strategic measurement system was associated with approximately 0.6024 points higher in firm performance as positively mediated by customer value. The findings are summarised in Figure 4.10.

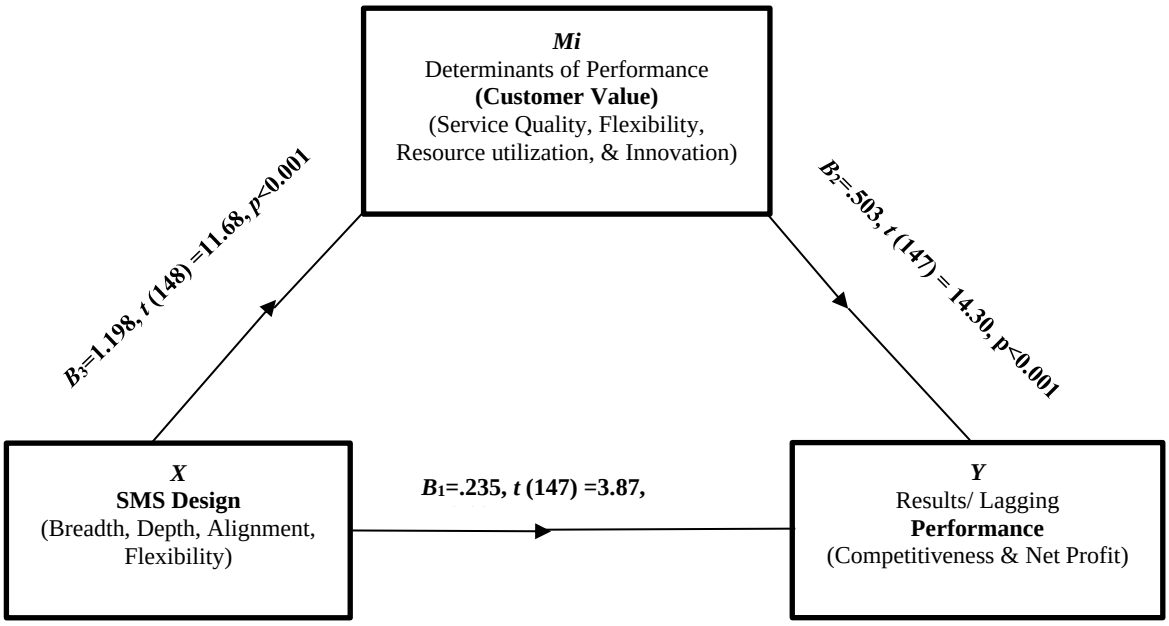


Figure 4.10: ***Mediating Effect of Customer Value***

Summary of the mediation hypotheses testing

a) The hypothesis testing for regression coefficient B_1 is significant,

$$B_1=.235,\ t\ (147) = 3.87,\ p<0.001$$

b) The hypothesis testing for regression coefficient β_3 is significant,

$$B_3=1.198,\ t\ (148) = 11.68,\ p<0.001$$

c) The hypothesis testing for regression coefficient of β_2 is significant,

$$B_2=.503,\ t\ (147) = 14.30,\ p<0.001$$

d) The absolute value of β_3 x B_2 is higher than the absolute value of β_1,

$$\left|1.198*0.503\right| \text{ or } \left|0.6024\right| > \left|0.235\right|$$

This condition defines partial mediation as provided by Awang (2015). This means that strategic measurement system positively influences customer value, which in turn positively influences firm performance. At the same time, SMS has a direct positive effect on firm performance. The indirect effect creates approximately 0.6024 points higher in

firm performance compared to the direct effect. The findings are in line with the determinants/results framework that long-term performance in service firms is mediated by short-term performance (e.g. customer value) (Fitzgerald, *et al*., 1991).

4.8.6 Test for Hypothesis Six

The sixth specific objective sought to establish the moderating effect of organizational context on the relationship between SMS and performance of medium sized service firms in Kenya. This was guided by the following null hypothesis;

H_{06}: Organizational context has no moderating effect on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya.

The moderation was tested on both the direct and indirect effects of strategic measurement system on performance. Since, organizational context was defined by two factors, firm size (number of employees) and organizational structure (vertical versus horizontal), moderation effects of size and structure were evaluated separately before evaluating their combined effect. All these variants were necessary to establish an optimal model combining both moderation and mediation.

H_{06a}: Organizational context does not have a moderating effect on the relationship between strategic measurement system and customer value.

Table 4.53: ***Effect on Relation between SMS and Customer Value***

Outcome: Customer Value (Y)

	R	*R*-square	*MSE*	*F*	*df1*	*df2*	*p*
	.7999	.6398	.1766	36.0263	7	142	.0000
		coefficient	SE	t	p	LLCI	ULCI
constant		3.3950	.0461	73.603	.0000	3.3038	3.4862
SMS. Design (X)		.3890	.1659	2.3450	.0204	.0611	.7168
Structure (W)		.1859	.0243	7.6341	.0000	.1377	.2340
Int_1		.1593	.0265	6.0208	.0000	.1070	.2116
No.of.em (Z)		.0062	.0267	.2321	.8168	-.0466	.0591
Int_2		.0157	.0989	.1586	.8742	-.1798	.2112
Int_3		.0071	.0138	.5142	.6079	-.0202	.0344
Int_4		-.0064	.0147	-.4317	.6666	-.0354	.0227

Product terms key:

Int_1	(X*W) :	SMS. Design	x	Structure		
Int_2	(X*Z):	SMS. Design	x	No of employees		
Int_3	(W*Z):	Structure	x	No of employees		
Int_4	(X*W*Z) :	SMS. Design	x	Structure	x	No of employees

Test (s) for unconditional interaction

	R^2 change	*F*	*df1*	*df2*	*p*
X*W	0.0923	36.5996	1	144	.0000
X*Z	0.0079	3.1264	1	144	.0792
X*W*Z	.0005	.1864	1	142	.6666

Organizational context was examined as moderator of the relationship between strategic measurement system and customer value. Table 4.53 shows that variances accounted for by all the variables including the interaction effect is 64%. That is, F (7, 142) = 36.03, p<.001, R^2=.64. Table 4.53 also shows that strategic measurement system is a significant predictor of customer value β= 0.39; t (142) = 2.35; p=.0204. Likewise, organizational structure (β= 0.19; t (142) = 7.63; p<.001), and the interaction term between SMS and organizational structure (β= 0.16; t (142) = 6.02; p<.001) are significant predictors of customer value.

The interaction term between strategic measurement system and organizational structure explained a significant increase in variance of customer value, ΔR^2 =.09, F (1,144) = 35.5996, p <.001. On the contrary, interaction between SMS and the number of employees (B= 0.016; t (142) = 0.16; p=.8742), interaction between organizational structure and the number of employees (B=0.007; t (142) = 0.51; p=.6079), and the interaction between SMS, organizational structure and number of employees (B=-0.006; t (142) = -0.43; p=.6667) are not significant predictors of customer value.

Since, the interaction term between strategic measurement system and organizational structure (B=0.16; t (142) = 6.02; p<.001) is significant, and creates positive change in variance of customer value, ΔR^2 = .09, F (1, 144) = 35.5996, p<.001. The findings show that organizational structure moderates the relationship between strategic measurement system and customer value.

However, there is no statistically significant evidence to show that number of employees and the organizational context (combined effect of organizational structure and number of employees) moderates the relationship between the strategic measurement system and customer value.

H_{06b}: Organizational context does not have a moderating effect on the relationship between strategic measurement system and performance.

Table 4.54: ***Effect on Direct Relation between SMS and Performance***

Outcome: Performance (Y)						
R	*R*-square	*MSE*	*F*	*df1*	*df2*	*p*
.8604	.7402	.0587	57.8050	7	142	.0000
	coefficient	SE	t	p	LLCI	ULCI
constant	2.9284	.0266	110.1421	.0000	2.8759	2.9810
SMS.Design (X)	.0546	.0956	.5706	.5692	-.1344	.2435
Structure (W)	.1559	.0140	11.1086	.0000	.1282	.1837
Int_1	.1025	.0153	6.7236	.0000	.0724	.1327
No.of.em (Z)	-.0090	.0154	-.5836	.5604	-.0395	.0215
Int_2	.0222	.0570	.3899	.6972	-.0905	.1349
Int_3	.0052	.0080	.6536	.5144	-.0105	.0209
Int_4	.0049	.0085	.5739	.5670	-.0119	.0216

Product terms key:

Int_1	(X*W) :	SMS. Design	x	Structure	
Int_2	(X*Z):	SMS. Design	x	No of employees	
Int_3	(W*Z):	Structure	x	No of employees	
Int_4	(X*W*Z) :	SMS. Design	x	Structure	x No of employees

Test (s) for unconditional interaction					
	R^2 change	*F*	*df1*	*df2*	*p*
X*W	.882	45.3004	1	144	.0000
X*Z	.0040	2.1945	1	144	.1407
X*W*Z	.0006	.3293	1	142	.5670

Organizational context was examined as moderator of the direct relationship between strategic measurement system and performance. Table 4.54 shows that variances accounted for by all the variables including the interaction effects is 74%. That is, F (7, 142) = 57.80, p<.001, R^2=.74. Table 4.54 also shows that by introducing the moderator in the model, SMS ceases to be a significant predictor of performance, B= 0.05; t (142) = 0.57; p=.5692.

However, organizational structure (B= 0.16; t (142) = 11.11; p<.001), and the interaction term between strategic measurement system and organizational structure (B= 0.10; t (142) = 6.72; p<.001) are significant predictors of performance. The interaction term between strategic measurement system and organizational structure explained a significant increase in variance of performance, ΔR^2 = .882, F (1, 144) = 45.3004, p < .001.

Number of employees (B= -0.009; t (142) = -0.5836; p=.5604), interaction between strategic measurement system and the number of employees (B= 0.022; t (142) = 0.39; p

=.6972), interaction between organizational structure and the number of employees (β= .0052; t (142) = 0.65; p =.5144), and the interaction between SMS, organizational structure and number of employees (β= .0049; t (142) = 0.57; p =.5670) are not significant predictors of performance.

Even though, the interaction term between SMS and organizational structure (B= 0.10; t (142) = 6.72; p < 0.001) is significant, and created a positive change in variance of performance, ΔR^2 = .889, F (1, 144) = 45.3004, p < .001, the findings also show that the SMS does not have a significant direct relationship with performance in the model, B= 0.05; t (142) = 0.57; p=0.5692. Further, there is no statistically significant evidence to show that number of employees and the organizational context (combined effect of organizational structure and number of employees) moderates the direct relationship between the strategic measurement system and performance.

H_{06c}: Organizational context does not have a moderating effect on the mediated relationship between SMS and performance.

Table 4.55: ***Effect of Moderator on Mediated Relation***

Outcome: Sustainable Performance						
R	R-square	MSE	F	df1	df2	p
.9233	.8526	.0335	101.9105	8	141	.0000
	coefficient	SE	t	p	LLCI	ULCI
constant	1.6416	.1258	13.0513	.0000	1.3929	1.8902
SMS.Design	-.0929	.0737	-1.2607	.2095	-.2385	.0528
Customer.value	.3790	.0366	10.3641	.0000	.3067	.4513
Structur	.0855	.0126	6.7809	.0000	.0605	.1104
Int_1	.0422	.0129	3.2636	.0014	.0166	.0677
No.of.em	-.0113	.0117	-.9736	.3319	-.0344	.0117
Int_2	.0163	.0431	.3777	.7062	-.0689	.1015
Int_3	.0025	.0060	.4168	.6774	-.0094	.0144
Int_4	.0073	.0064	1.1338	.2588	-.0054	.0200

Product terms key:

Int_1	(X*W) :	SMS. Design x	Structure	
Int_2	(X*Z):	Desg. SPMS x	No of employees	
Int_3	(W*Z):	Structure x	No of employees	
Int_4	(X*W*Z) :	SMS.Design x	Structure x	No of employees

Test (s) for unconditional interaction

	R^2 change	*F*	*df1*	*df2*	*p*
X*W	.0111	10.6298	1	144	.0014
X*Z	.0002	0.1782	1	144	.6736
X*W*Z	.0013	1.2855	1	142	.2588

Organizational context was examined as moderator of the mediated relationship between strategic measurement system and performance. Table 4.55 shows that variances accounted for by all the variables including the interaction effects is 84.2%. That is, F (8, 141) = 101.91, p<.001, R^2=.8426. Table 4.55 also shows that strategic measurement system in this moderated mediated model is not a significant predictor of performance, B= -.093; t (141) = -1.26; p =.2095. Customer value (B= 0.38; t (141) = 10.36; p <.001), organizational structure (B= 0.09; t (141) = 6.78; p <.001), and the interaction term between strategic measurement system and organizational structure (B= 0.042; t (141) = 3.26; p =.0014) are significant predictors of performance. The interaction term between strategic measurement system and organizational structure explained a significant increase in variance of performance, ΔR^2 = .011, F (1, 144) = 10.6298, p =.0014.

However, number of employees (B= -.0113; t (141) = -0.97; p =.3319), interaction term between SMS and number of employees (B= 0.016; t (141) = 0.38; p =.7062), interaction term between organizational structure and number of employees (B= 0.003; t (141) = 0.42; p =.6774), and the interaction term between strategic measurement system, organizational structure and number of employees (B= 0.007; t (141) = 1.13; p =.2588) are not significant predictors of performance.

Since, the interaction term between strategic measurement system and organizational structure (B= 0.042; t (141) = 3.26; p <.001) is significant, and created a positive change in variance of performance, ΔR^2 = .011, F (1, 144) = 10.6298, p =.0014. The findings in Table 4.55 reveals that organizational structure moderates the mediated relationship between strategic measurement system and performance. However, there is no statistically significant evidence to show that number of employees and the organizational context (combined effect of organizational structure and number of employees) moderates the mediated relationship between the strategic measurement system and performance.

The study makes the following conclusions. First, the study did not establish a statistically significant moderating effect of firm size on the relationship between strategic measurement system design and performance. The study fails to agree with findings by

Ahmada and Zabria (2016); Cocca and Alberti (2010); Hoque and James (2000); and Tapinos *et al*. (2005) that organizational size creates variation on the impact of strategic measurement system on performance. However, the difference in the findings can be attributed to the difference in number of firm categories sampled. While the reviewed empirical literature sampled micro, small and medium sized firms employing less than 10 to 250 employees, the current study only sampled medium sized firms employing between 50 and 100 employees with 48% of these firms employing between 91 and 100 employees. This limited the differences between the firms. Hence, no mediation effect of size was observed.

Secondly, there is a statistically significant moderation effect of organizational structure on the indirect relationship between strategic measurement system design and performance. This supports findings by Lee and Yang (2011); and Yang (2012) to the extent that organizational structure has moderating effect on the relationship between strategic measurement system design and performance. Specifically, study by Yang (2012) indicated that organizational structure has significant impact on the extent and types of financial or non-financial performance measures to be included in a performance measurement system. For instance, an organization with a decentralized structure will require a detailed performance measurement system to capture the diversified decision-making points in the organization. This directly influences the resultant organizational performance.

Third, the study fails to establish a statistically significant moderating effect of organizational context (combined effect of firm size and organizational structure) on the relationship between strategic measurement system design and performance among medium sized service firms in Kenya. That is, the effect of the interaction term between strategic measurement system design, firm size, and organizational structure did not have a statistically significant moderating effect on the relationship between strategic measurement system design and performance.

From these conclusions, the moderated mediation model was revised by eliminating firm size (number of employees) and the combined organizational context. Similarly, since the moderating effect of organizational structure on the direct relationship between strategic measurement system design and performance resulted in an insignificant strategic measurement system design, the relationship was omitted and a revised model presented as shown in Figure 4.11.

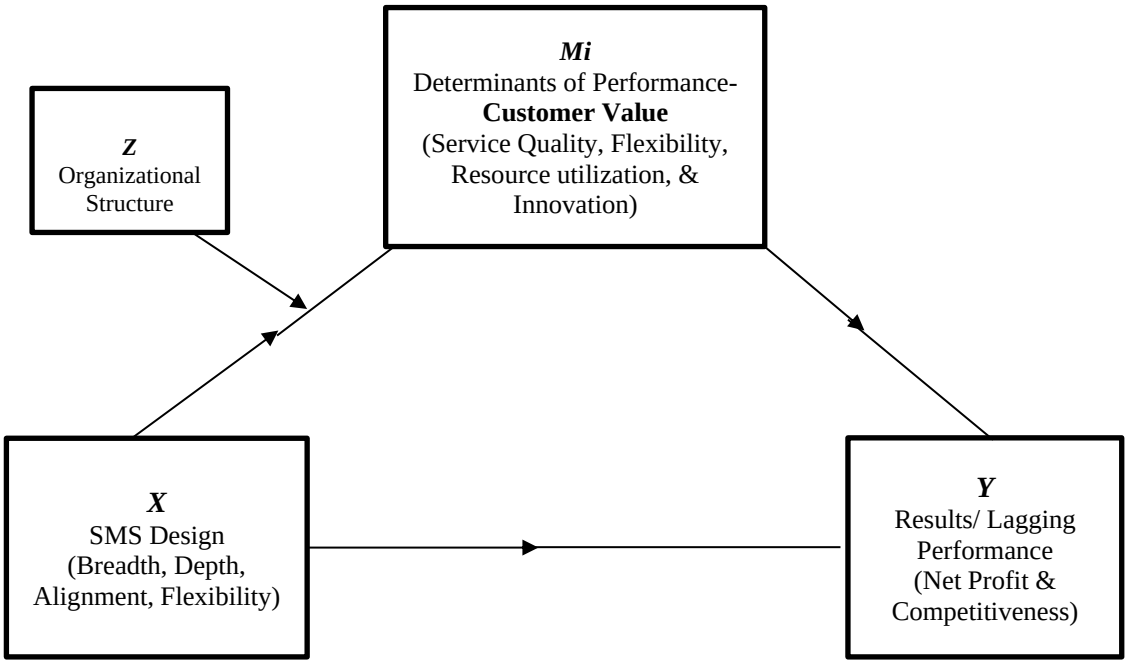


Figure 4.11: Revised Moderated Mediated Model

The revised model while representing a mediated relationship between strategic measurement system and performance through customer value only explored the moderated mediation of the relationship between strategic measurement system and performance through customer value. The revised model was then run to quantify the moderated mediated effects. The results are illustrated in Table 4.56.

Table 4.56: Moderated Mediation Effects

Outcome: Customer value:

R	R-square	MSE	F	df1	df2	p
.7931	.6290	.1769	54.3076	3	146	.0000

	coefficient	SE	t	p	LLCI	ULCI
constant	3.4050	.0527	64.6066	.0000	3.3009	3.5092
SMS.Design	.3974	.1326	2.9982	.0032	.1354	.6594
Structure	.1816	.0261	6.9449	.0000	.1299	.2332
int_1	.1538	.0326	4.7198	.0000	.0894	.2181

Product terms key:
int_1 SMS.Design X Structure

Test (s) for unconditional interaction

	R^2 change	*F*	*df1*	*df2*	*p*
X*W	0.0874	34.3784	1	146	.0000

Conditional indirect effect(s) of X on M at values of the moderator(s):

Structure **(W)**	Effect	SE	t	p	LLCI	ULCI
-3.4717	-.1364	.1975	-.6905	.4910	-.5268	.2540
.0000	.3974	.1639	2.4253	.0165	.0736	.7213
3.4717	.9312	.1768	5.2669	.0000	.5818	1.2807

Outcome: Performance:

R	R-square	MSE	F	df1	df2	p
.8916	.7950	.0447	299.1950	2	147	.0000

	coefficient	SE	t	p	LLCI	ULCI
constant	1.2476	.2015	6.1910	.0000	.8494	1.6459
Cust.Val	.5028	.0577	8.7164	.0000	.3888	.6168
SMS.Design	.2357	.1012	2.3299	.0212	.0358	.4357

Direct effect of X on Y:

Effect	SE	t	p	LLCI	ULCI
.2357	.1012	2.3299	.0212	.0358	.4357

Conditional indirect effect(s) of X on Y at values of the moderator(s):

Mediator	Structure (W)	Effect	BootSE	BootLLCI	BootULCI
Cust.Val (M)	-3.4717	-.0686	.0935	-.2626	.0982
Cust.Val (M)	.0000	.1998	.0633	.0782	.3364
Cust.Val (M)	3.4717	.4682	.0786	.3264	.6460

Index of Moderated Mediation:

Mediator	Effect	SE (Boot)	BootLLCI	BootULCI
Cust.Val	.0773	.0169	.0424	.1087

Organizational structure was examined as moderator of the mediated relationship between strategic measurement system and performance. Table 4.56 shows that variance accounted by all the variables including the interaction effects is 62.9%. That is, F (3, 146) = 54.31, p<.001, R^2=.6290. Table 4.56 also shows that strategic measurement system is a significant predictor of performance, B= .3974; t (146) = 2.99; p =.0032. Further, organizational structure (B= 0.1816; t (146) = 6.94; p <.001), and the interaction term between strategic measurement system and organizational structure (B= 0.1538; t (146) =

4.72; p <.001) are significant predictors of performance. The interaction term between strategic measurement system and organizational structure explained a significant increase in variance of performance, ΔR^2 = .087, F (1, 146) = 34.38, p <.001.

The moderated mediation effect was tested using a bootstrap estimation approach at 5,000 and the results indicated that the moderated mediation coefficient was significant, *B*= 0.0773, *SE* (*Boot)* = .0169, 95% CI = .0424, .1087. Thus, strategic measurement system was associated with approximately 0.0773 points higher in performance through the moderated mediation model. The moderated mediation relationship between strategic measurement system and performance is illustrated in Figure 4.12.

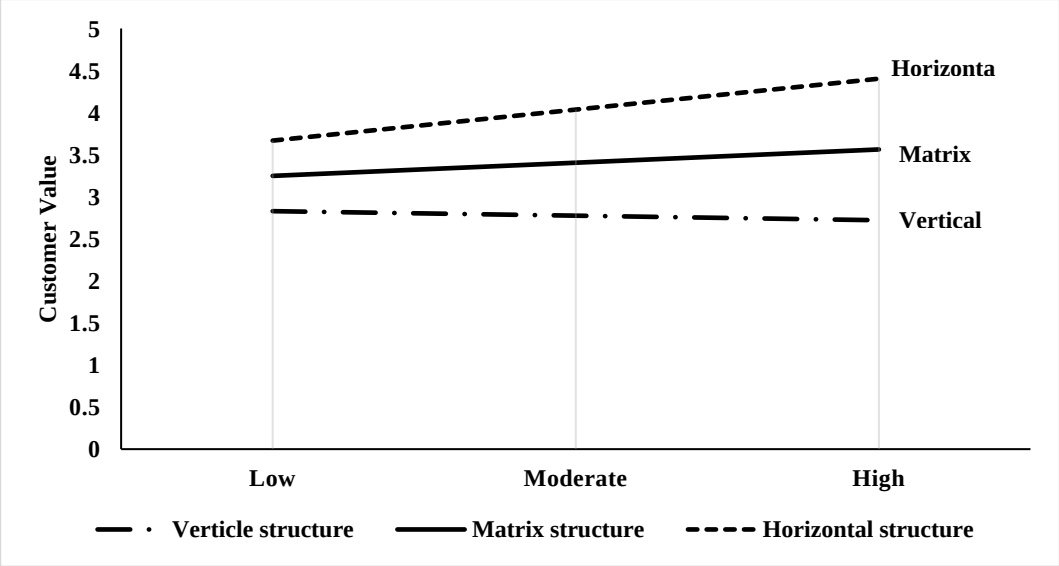


Figure 4.12: Moderating Mediation Effects

Organizational structure was examined as a moderator of the mediated relation between strategic measurement system and performance. The unstandardized simple slope for firms with 1 *SD* below the mean of organizational structure (horizontally structured firms) was 4.4, the unstandardized simple slope for firms with a mean level of organizational structure (matrix structured firms) was 3.6, and the unstandardized simple slope for firms with 1 *SD* above the mean of organizational structure (vertically structured firms) was 2.7. Figure 4.12 reveals that for vertically structured organizations, a higher customer

value and firm performance is realized by use of low strategic measurement systems (2.8) compared to use of high strategic measurement systems (2.7). Meaning, for vertically structured organizations, low strategic measurement systems would yield higher customer value and performance. Figure 4.12 also shows that use of high strategic measurement system yields better customer value (3.6) compared to low strategic measurement system (3.2) in organizations with matrix structures. Likewise, high strategic measurement system yields better customer value (4.4) compared to low strategic measurement system (3.7) in organizations with horizontal structures.

Findings that use of highly strategic measurement systems are of less importance with respect to performance in vertically structured organizations confirm arguments that vertically structured organizations have clear and direct control systems (Marija *et al*., 2014), which may not require highly strategic measurement systems (Wasneiewski, 2017) to achieve their organizational objectives which are in most cases short-term and financially oriented (Virtanen, 2017). Therefore, use of lengthy and more detailed measures as found in strategic measuresurement systems would otherwise tie up the limited resources the firms need to propel their performance (Bäuml, 2014). On the other hand, findings that matrix or horizontally structured organizations achieve better results by use of highly strategic measurement systems support assertions by Yang (2012) that for better performance, decentralized organizations require a detailed performance measurement system to capture the diversified decision-making in the various organizational dimensions. The findings are also in line with Bäuml (2014) to the extent that highly formal organizational structures may impede flexibility of performance measurement systems in SMEs and reduce their agility and overall organizational performance. However, the findings fail to support findings by Lee & Yang (2011) that use of integrated measures is more relevant with respect to organizational performance in mechanistic organizations than in organic ones.

4.8.7 Optimal Model

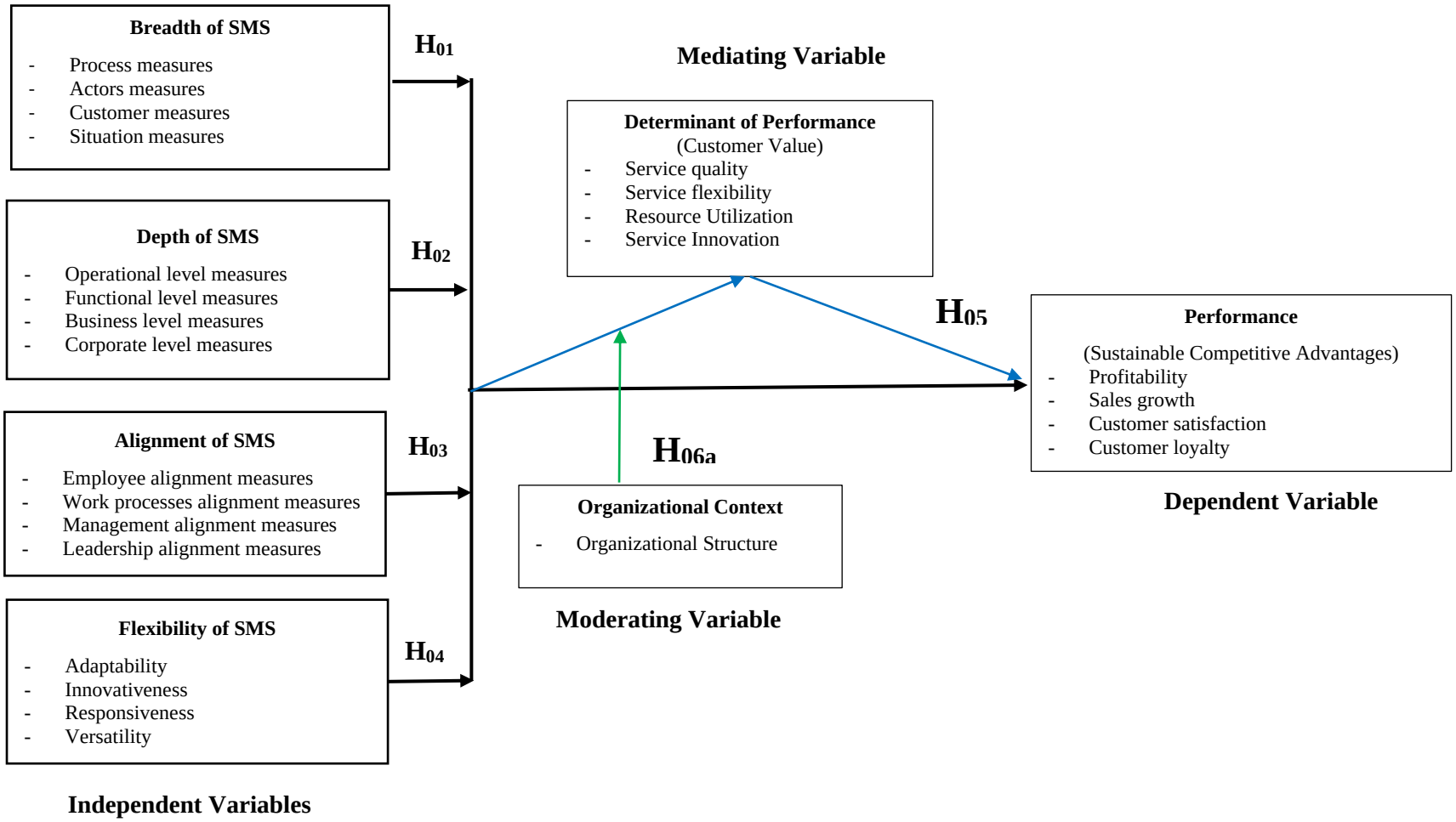


Figure 4.13: Optimal Model

The optimal model was such that, even though to different degree of effect, the breadth, depth, strategic alignment of measures and flexibility of strategic measurement system have both direct and mediated relationship with performance of medium sized service firms in Kenya. The mediated path is via the customer value which act as leading indicator of performance. The mediated path is moderated by the organizational structure where horizontally oriented firms have better performance under enhanced adoption of strategic measurement system.

The results show that there was no significant effect of some indicators and causal paths in the conceptual framework. For instance, the study failed to establish a significant effect of firm size (measured as number of employee) as moderating variable for the relationship between strategic measurement system and firm performance whether through the direct or mediated path. Therefore, the conceptual framework was optimized by dropping firm size as moderator in the final model both through the direct path and through the mediated path. The concept of optimization was to establish the best possible model in explaining the effect of strategic measurement system design on performance of medium sized service firms in Kenya.

In operational setting, this new model can be used as an approach to designing and implementing strategic measurement system. The results also identify the key variables such as breadth with the greatest effect on performance and are recommended to be enhanced in priority order and variables such as depth that are recommended to be maintained. It means that not all variables in the model require enhancement simultaneously and that organizations can make decisions which variables have to be enhanced or maintained first considering their contributory effect on performance.

4.9 Qualitative Data Analysis

Qualitative data from the open-ended questions were used for an in-depth understanding of the concepts being studied. The qualitative data was analysed through data identification and categorization into common themes to establish meaning.

Table 4.57: ***Summary of the Qualitative Data Analysis***

Question	Description	Common Themes of Responses
Part B 6	Importance of SMS's Breadth	o No consensus as to whether increasing number of measures would improve performance (51%:49%)
Part C 9	Critical areas of SMS where detail matter most	o In setting targets for specific activities (70%) o In rewarding staff performance (54%)
Part D 6	Efforts to align SMS to organizational strategy	o Staff training on SMS (72%) o Inclusion of staff views in performance targeting (69%)
Part E 5	Critical areas of SMS where flexibility is most critical	o In measuring changing competitor's activities (54%) o In conducting general situation analysis (61%)
Part F 10	Most important attributes of SMS Why SMS are important	o Ability to provide all information for decision making (Breadth) (48%) o Eliciting information for strategy evaluation and re-design (52%)
Part F 11	Suggestions on improving SMS	o Participatory approach in their design (77%) o Frequent reviews (58%)

Findings from qualitative data analysis in Table 4.57 revealed lack of consensus as to whether increasing the number of measures in performance measurement system would enhance performance. While some respondents agreed that increasing measures would enhance performance, others disagreed with one particularly respondent indicating that, "…adding more measures to the current performance measurement systems would slow down our speed of service delivery". The other opposing voice indicated that "…the more the measures, the more the employees required. This increases the total operational cost cutting down on profits…" Those who agreed that increasing measures would be beneficial were of the opinion that "what gets measured get achieved" as indicated by one respondent. The findings illustrate the uncertainty as to the exact benefit of broadening strategic measurement system scope and corroborates findings by Hvidman and Andersen (2013) that use of performance measurements systems do not always guarantee positive influence on firm performance. Further supporting findings that effectiveness of any performance measurement system is dependent on its design and firm characteristics as indicated by Chenhall (2003).

Table 4.57 also corroborates earlier findings by revealing that detail in performance measurement system is particularly important in setting targets for specific activities and in rewarding employees. In addition, some firms in enhancing strategic alignment of

performance measurement system have used staff workshops and inclusion of staff views in setting performance targets. This underscores the realization that strategic alignment is critical success factor as indicated by Cocca and Alberti (2010). Moreover, measuring competitor's activities and situational analysis were cited as the most important attributes of strategic measurement system where flexibility is critical.

Further, as proposed by Wasneiewski (2017), Table 4.57 corroborates the significance of breadth in enhancing effectiveness of strategic measurement system as it showed that the ability to provide all information for decision-making was identified as the main attribute of strategic measurement system. When asked why strategic measurement systems are important, what came out was that strategic measurement system's ability to elicit information for strategy evaluation and re-design. This confirmed the significance of flexibility of strategic measurement systems as indicated by Sushil (2015). Finally, participatory approach in strategic measurement system design and frequent reviews of strategic performance measurement systems were proposed as strategies for enhancing effectiveness of strategic measurement systems.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter presents summary of findings, conclusions, contributions to knowledge and recommendations from the study. The presentation is aligned to the specific study objectives and hypothesis in chapter one of this study.

5.2 Summary of Findings

5.2.1: Breadth of Strategic Measurement System and Performance

The first specific study objective sought to determine the effect of breadth of strategic measurement system on performance of medium sized service firms in Kenya. The expectation of this research was that breadth of strategic measurement system influences performance of medium sized service firms in Kenya. This expectation was confirmed by the regression analysis, which showed that breadth of strategic measurement system has a statistically significant positive effect on performance of medium sized service firms in Kenya. The multiple regression findings confirmed that out of the four specific independent variables studied, breadth of strategic measurement system has the largest positive effect on performance. That is, a unit increase in standard deviation of breadth of SMS led to 0.453 unit increase in the standard deviation of performance.

Based on the descriptive statistics, medium sized service firms in Kenya adopt the use of strategic measurement systems since the performance measures captured both financial and non-financial measures. The strategic measurement systems also measure processes, customer, actors, and situational perspectives of the organization. In addition, the systems measure both external and internal perspectives of the firms. However, the strategic measurement systems used by a large number of medium sized service firms in Kenya do not have adequate breadth and are not comprehensive enough and are not logically and systematically implemented as expected. At least 45% of the firms use unbalanced performance measurement systems where learning and innovations are not measured,

neither do 39% of the firms measure customer perspectives nor do 13% of the firms measure internal business process effectiveness. The firms are focused more on measuring short-term objectives (profitability and internal efficiency) with little attention to strategic goals (such as customer relations, learning and growth). This means that strategic measurement systems are primarily looking at the past performance through an integration of profitability indicators and internal efficiency measures.

5.2.2 Depth of Strategic Measurement System and Performance

The second specific study objective sought to establish the effect of depth of strategic measurement system on performance of medium sized service firms in Kenya. The expectation of the study was that the depth of the strategic measurement system has an influence on performance of medium sized service firms in Kenya. Regression analysis results confirmed the expectations that depth of strategic measurement system has a statistically significant positive effect on performance of medium sized service firms in Kenya. Multiple regression findings also confirmed that compared to breadth, strategic alignment and flexibility, depth of strategic measurement system has the least positive effect on performance of medium sized service firms in Kenya. That is, a unit increase in standard deviation of depth of SMS led to 0.163 unit increase in the standard deviation of performance.

The descriptive findings reveal that strategic measurement systems used by majority of the medium sized service firms in Kenya lack adequate depth. While the findings indicated that on average, the respondents somehow agreed that the systems measure operational and strategic outputs, the study also showed that most firms (65%) only measure operational efficiencies of activities considered important (68%) across all departments. The findings also indicated that majority (98.7%) of the firms use measures with low level of disaggregation; 54% do not empower staff to be in control of strategic priority targets; and 37.2% do not frequently measure outputs.

5.2.3 Strategic Alignment of Measurement System and Performance

The third specific study objective sought to investigate the effect of strategic alignment of measurement system on performance of medium sized service firms in Kenya. The regression analysis results confirmed the expectations of the research that strategic alignment of measurement system has a statistically significant positive effect on performance of medium sized service firms in Kenya. In the model, multiple regression results identified strategic alignment as having the second largest effect on performance of medium sized service firms in Kenya after breadth of strategic measurement systems. That is, a unit increase in standard deviation of strategic alignment of SMS led to 0.204 unit increase in the standard deviation of performance.

The study showed that on average, the respondents somehow agreed that measures used by their organizations are strategically aligned to firm objectives. However, the findings revealed that the alignment focuses more on achieving short-term goals at the expense of strategic objectives. About half (46%) of the firms do not engage all their employees in performance contracting. For most firms the reward systems are non-strategic. Few firms use long-term rewards such as staff trainings (8.2%) and job promotions (23%), while comparatively, more firms adopted use of short-term rewards such as cash (25.4%) and spot awards (40.2%). Meaning that most of the firms use measurement systems focusing on achieving alignment to short goals at the expense of firm strategic objectives. This indicated sub-optimal strategic alignment of the performance measurement systems adopted by most medium sized service firms in Kenya, where emphasis is on short-term goals rather than long-term outcomes

5.2.4 Flexibility of Strategic Measurement System and Performance

The fourth specific study objective sought to examine the effect of flexibility of strategic measurement system on performance of medium sized service firms in Kenya. The findings confirmed the expectations of the study that flexibility of strategic measurement system has a statistically significant positive effect on performance of medium sized service firms in Kenya. In the model, flexibility was identified to have the third largest

effect on performance after breadth and strategic alignment of strategic measurement system. That is, a unit increase in standard deviation of flexibility of SMS led to 0.183 unit increase in the standard deviation of performance.

The study showed that strategic measurement systems used by most medium sized service firms in Kenya lack adequate flexibility needed for responsiveness and adaptability. The study established that on average respondents somehow agreed that the systems are flexible but most generate few performance reports; 63.9% do review their performance measurement systems effectiveness less often (after a year); and 58.7% lack an agile, adaptive and integrated information management infrastructure (use manual information management systems). That is, majority of medium sized service firms in Kenya generate just one annual performance report (83.3%); wait for at least 1 year to review effectiveness of their performance measurement systems (97.8%); and do not have an agile, adaptive and integrated information management infrastructure (58%).

5.2.5 Mediating Effect of Customer Value on Performance

The fifth specific study objective sought to establish the mediating effect of customer value on the relationship between strategic measurement system and performance of medium sized service firms in Kenya. Using determinants/results theoretical framework, customer value was identified as potential mediating factor in the relationship between strategic measurement system and performance. Based on causal approach utilized for testing mediation, the study confirmed that customer value partially mediates the relationship between strategic measurement system and performance of medium sized service firms in Kenya.

The indirect effect created approximately 0.6024 points higher in performance compared to the direct effect. The study confirmed that while strategic measurement system has a direct positive statistically significant effect on performance, the effect of strategic measurement system on customer value also add benefits that enhances performance. That is, strategic measurement system also indirectly influences performance by positively influencing customer value, which in turn positively influence performance.

5.2.6 Moderating Effect of Organizational Context on Performance

The sixth specific study objective sought to establish the moderating effect of organizational context on the relationship between the strategic measurement system and performance of medium sized service firms in Kenya. The study focused on firm size as measured by the number of employees and organizational structure measured as either vertical or horizontal. The findings of the study confirmed that all the firms employed between 50 and 100 employees as expected, with nearly half (48%) of them employing between 91 and 100. The study also showed that majority of the firms had vertical structures (58%).

Moderation results confirmed the expectation of this objective to the extent that organizational structure moderates the relationship between strategic measurement system and performance of medium sized service firms in Kenya. Firms with matrix and horizontal structures registered higher performance with adoption of strategic measurement systems. Meaning that use of strategic measurement systems yields better results in matrix and horizontally compared to vertically structured organizations. However, the study did not establish a statistically significant moderating effect of firm size and organizational context (combined effect of firm size and organizational structure) on the relationship between strategic measurement system and performance of medium sized service firms in Kenya.

5.3 Conclusions

Based on the findings, the study makes the following conclusions in line with the specific research objectives;

5.3.1 Breadth of Strategic Measurement System and Performance

Based on the findings of the first specific objective, the study concludes that medium sized service firms with broad strategic measurement systems seem to perform better. That is, the breadth of strategic measurement system is a statistically significant predictor of performance of medium sized service firms in Kenya, indicating a positive effect of breadth of strategic measurement system on performance of medium sized service firms

in Kenya. The study also concludes that strategic measurement systems used by most medium sized service firms in Kenya do not have adequate breadth and are not comprehensive enough. Most of the firms focus more on measuring short-term objectives (profitability and internal efficiency) with little attention on strategic goals (such as customer relations, learning and growth). This means that strategic measurement systems are primarily looking at the past performance through an integration of profitability indicators and internal efficiency measures.

5.3.2 Depth of Strategic Measurement System and Performance

Based on the findings of the second specific objective, the study concludes that medium sized service firms with detailed strategic measurement systems seem to perform better. Nonetheless, the effect is comparatively low. That is, depth of strategic measurement system has a weak positive statistically significant effect on performance of medium sized service firms in Kenya. The study further concludes that most medium sized service firms in Kenya do not use deep (highly detailed) strategic measurement systems. That is, while strategic measurement systems used by majority of the medium sized service firms in Kenya focus on measuring operational efficiencies of activities considered important across departments, majority of the firms use measures with low level of disaggregation. Further, majority of the firms do not empower their lower level managers and employees to be in control of the implementation of their strategic priority targets. Moreover, majority of the firms do not use frequently reported measures.

5.3.3 Strategic Alignment of Performance Measurement Systems and Performance

Based on the findings on the third specific objective, the study concludes that medium sized service firms with strategically aligned measurement systems seem to perform better. That is, strategic alignment of performance measurement system is a statistically significant predictor of performance of medium sized service firms in Kenya, indicating a positive effect of strategic alignment of measurement system on performance of medium sized service firms in Kenya. However, the study concludes that strategic measurement systems used by most medium sized service firms in Kenya, have sub optimal employee

alignment to the extent that the systems fail to fully align organizational long-term goals of learning and growth to employee performance and motivation. Thus, the strategic measurement systems used by most medium sized service firms in Kenya lack full strategic and functional integration for aligning operational activities to strategic outcomes.

5.3.4 Flexibility of Strategic Measurement System and Performance

Based on the findings of the fourth specific objective, the study concludes that medium sized service firms with flexible strategic measurement systems seem to perform better. That is, flexibility of strategic measurement system is a statistically significant predictor of performance of medium sized service firms in Kenya, showing a positive effect of flexibility of strategic measurement system on performance of medium sized service firms in Kenya. The study also concludes that strategic measurement systems used by most medium sized service firms in Kenya lack adequate flexibility needed for their responsiveness and adaptability. Nearly two thirds of the firms do not regularly review performance and effectiveness of their performance measurement systems. Hence, the systems are not flexible enough to quickly capture and respond to changes in the environment.

5.3.5 Mediating Effect of Customer Value

Based on the findings of the fifth specific objective, the study concludes that medium sized service firms with high customer value seem to perform better. That is, customer value partially mediates the relationship between strategic measurement system and performance of medium sized service firms in Kenya. The indirect effect created higher performance compared to the direct effect.

5.3.6 Moderating Effect of Organizational Context

The study concludes that organizational structure moderates the relationship between strategic measurement system and performance of medium sized service firms in Kenya. The relationship is such that for horizontal/matrix structured organizations, a higher

customer value and performance would be realized by use of strategic measurement systems. Meaning that strategic measurement systems yield better results in matrix and horizontally structured firms. However, the study concludes for lack of moderation by firm size and the combined organizational context (combined effect of firm size and organizational structure) on the relationship between strategic measurement system and performance of medium sized service firms in Kenya.

5.4 Contributions of the Study to Knowledge

This section presents the contributions of this thesis. It is divided into three parts. That is, theory, methodology and practical contributions.

5.4.1 Theoretical Contributions

Both theory and empirical findings have contributed to our understanding of the relationship between strategic measurement systems and firm performance especially under large manufacturing firms in the developed economies. This study also contributes to our understanding of the question of how medium sized service firms in Kenya have adopted and used strategic measurement systems, and how the adoption has influenced performance. It adds to the existing body of empirical literature by confirming that breadth, depth, strategic alignment, and flexibility of strategic measurement system, separately and jointly significantly positively influence organizational performance of medium sized service firms in Kenya.

The findings of the study suggest in detail that strategic measurements systems are not logically and symmetrically adopted and does not always resemble the conventional textbook models. The results indicate that medium sized service firms in Kenya appear primarily focused on measuring the short term financial and efficiency aspects of their performance. Hence, there is need to enhance duality of strategic performance measurement systems (financial and non-financial) for proper visualization of firm performance to not only survive current success but also innovate for tomorrow. The contribution of this thesis is that it unravels in detail the extent of adoption and design of

strategic measurement system in this less explored realm of the service sector in developing economies.

Further, the study contributes towards testing of the classical theoretical propositions. The study supports the propositions of organizational learning and Resource Based View theories to the extent that strategic measurement systems provides information which stimulate organizational learning frameworks and enhance accumulation of valuable, rare, inimitable, and non-substitutable capabilities unique to the firm, useable to develop competitive advantages and long-term benefits. Particularly, having a broad strategic measurement system facilitate development of a wide pool of vital and unique knowledge base about the internal and external state of the organization, which is useable as source of competitive advantage.

Moreover, the study supports the theoretical proposition of decision-making theory to the extent that rational decision-making requires the right and complete information for decision-making. Information that is acquired through detailed and strategically aligned performance measurement systems. Moreover, the study supports the theoretical proposition of dynamic capabilities theory to the extent that flexible strategic measurement systems adjust the emerging issues so as to facilitate continuous acquisition of information for continuous development, and reconfiguration of firm-specific resources.

5.4.2 Methodological Contributions

The main methodological contribution of the research has been the combination and application of concepts from flexibility strategy game card model and results/determinants framework to study the effect of strategic measurement systems on performance of medium sized service firms in Kenya. The current state of knowledge in the field of strategic performance measurement consists of a multitude of performance measurement models, of which most were formulated within the financial accounting domain. Regardless, majority of businesses, public sector and non-governmental

institutions have adopted traditional performance measurement systems, more so the balanced score card model.

Several cross-continental studies have shown that more than 60% of businesses, have at least partially implemented various generations and variants of balanced score card in the last 3 decades. Giannopoulos, *et al* (2013) reported that 60% of the very large companies, 40% of large companies and only 25% of small or medium companies use balanced score card. Despite being popular, the model has been criticized for over reliance on financial indicators; limiting the number of measures in a perspective thus reducing the value of lead indicators (filtering); difficulty in modifying the four perspectives as per the needs of the organization (clustering); and lack of empirical support for the causality proposed in the balanced score card (Srivastava & Sushil).

This thesis adopted flexibility strategy game card model and results/determinants framework to cover these disadvantages by expanding the perspectives and including causal paths that help in identifying key financial and nonfinancial performance measures for effective strategy execution. The thesis also provides the needed empirical validation for the flexible strategy game card model and results/determinants framework in defining the extent of adoption of strategic measurement systems through the lens of the less explored perspectives of enterprise and customers.

Another methodological contribution relates to the appropriateness of applying theoretical concepts and theories developed in other contexts. The applicability of performance measurement systems developed within and for large manufacturing firms in the developed countries has been questioned owing to the differences that exist in social and cultural variabilities. The successful use of these theories in this study contributes towards providing examples of the interpretation for medium sized service firms in Kenya.

5.4.3 Practical Contributions

One of the practical contributions of this research is the detailed insight provided by the findings. The thesis reveals the comparative contributory effect of strategic measurement system design elements in medium sized service sector firms in developing economies.

Unlike large manufacturing firms which are highly decentralized, and demands a more formal, specialized and sophisticated management control system, the thesis shows that this may not be wholly applicable to medium sized service firms. The thesis has demonstrated a comparatively low contributory effect of too much detail (depth) of strategic measurement system on performance of medium sized service firms in Kenya. Therefore, when designing strategic measurement systems for medium sized service firms in Kenya, care should be taken to avoid over sophistication of the model but strive at broadening the scope of the system.

In addition, the study contributes to the discourse on the actual impact of performance measurement systems and their designs on organizational performance. The study extends the conceptualization of the relationship between strategic measurement system design and organizational performance through the integration of breadth, depth, alignment and flexibility variables, as well as customer value as mediating variable and organizational structure as a moderating variable. This integration is particularly important to practitioners and researchers since in practical scenarios, these variables do not act in insolation but in a complex web of interrelation. Thus, the findings would present a more practical variable combination and their total effect on performance.

5.5 Recommendations to Policy and Practice

The findings of this study have important implications for policy makers and practitioners of strategic management in service firms and other organizations. Strategic measurement system design was found to influence performance of medium sized service firms in Kenya. However, the study identified inadequacies in the performance measurement systems used by medium sized firms in Kenya. The following recommendations are of significance to practitioners.

5.5.1 Breadth of Strategic Measurement System and Performance

The study established a positive effect of breadth of strategic measurement system on performance of medium sized service firms in Kenya. The study also revealed that

strategic measurement systems used by most medium sized service firms in Kenya do not have adequate breadth and are not comprehensive enough to elicit strategic outcomes. The study therefore recommends expansion of breadth of these systems to include adequate measures for strategic goals. Particularly, managers of these firms should strive to promote measuring and reporting of non-financial measures such as customer relations, learning and growth indicators, and relate them to organizational performance.

5.5.2 Depth of Strategic Measurement System and Performance

The study showed a positive effect of depth of strategic measurement system on performance of medium sized service firms in Kenya. However, this effect was weak as compared to breadth, alignment and flexibility. The study thus recommends comprehensive and but integrated measures, which covers all critical parameters of the organization, as too much focus on detail would only serve to prolong the implementation of the strategic measurement system with minimal marginal increase on performance.

Further, since the study showed that the strategic measurement systems used by most medium sized service firms in Kenya lack adequate depth, the study recommends carefully balanced disaggregation of measures; setting of strategic priorities for managers and employees based on factors they can control; and using frequently reported measures to enhance detail of the systems.

5.5.3 Strategic Alignment of Performance Measurement System and Performance

The study established a positive effect of strategic alignment of measurement systems on performance of medium sized service firms in Kenya. However, the study also showed that strategic measurement systems used by most medium sized service firms in Kenya lack full strategic and functional integration. The study recommends promotion of management practices, which enhance alignment of employee performance and motivation to the organizational long-term goals of learning and growth. Particularly, managers should strive to ensure that performance contracting is implemented for all employees. Further, managers should enhance use of long-term employee rewards such

as trainings and job promotions alongside the most used short-term rewards such as cash and spot rewards.

5.5.4 Flexibility of Strategic Measurement System and Performance

The study revealed a positive effect of flexibility of strategic measurement system on performance of medium sized service firms in Kenya. The study also showed that strategic measurement systems used by most medium sized service firms in Kenya lack adequate flexibility needed for their responsiveness and adaptability. The study therefore recommends that regular review of performance measurement systems to ensure that the systems are strategically aligned to organizational objectives and that they have sufficient flexibility to capture all emerging issues for development of organizational innovativeness, flexibility and responsiveness.

5.5.5 Mediating Effect of Customer Value

The study established that customer value partially mediates the relationship between strategic measurement system and performance of medium sized service firms in Kenya and that the indirect effect created higher performance compared to the direct effect. Management of medium sized service firms should therefore strive to use performance measurement systems, which continuously inform about the level of customer needs and level of satisfaction. In addition, management should make initiatives to enhance customer involvement and participation in the service delivery process to enhance better customer service delivery and value.

5.5.6 Moderating Effect of Organizational Context

The study showed that organizational structure moderates the relationship between strategic measurement system and performance of medium sized service firms in Kenya. Such that for vertically structured organizations, a higher customer value and performance would be realized by use of less strategic measurement systems. On the contrary, strategic measurement systems yield better customer value in organizations with matrix and horizontal structures. This dispels the assumption that strategic measurement systems

always provide better results. Hence, managers of individual firms should therefore take into account their organizational structures while designing and adopting performance measurement systems for them to receive optimum benefits from the systems. The study recommends that matrix or horizontally structured organizations to enhance use of strategic measurement systems while vertically structured firms to customize strategic measurement systems used based on the context.

5.6 Recommendations for Further Study

The findings and conclusions are limited to the study's conceptualization where studies beyond the independent variables of breadth, depth, alignment and flexibility as well as the mediating and moderating variables would be welcome. Particularly, empirical studies on the effect of strategic measurement system's implementation factors such as leadership and communication would provide more insights. Further, internal organizational context was considered as moderator, studies focusing on external environment as a moderator would enrich empirical evidence in the field of strategic measurement.

In addition, the study did not compare the effect of strategic measurement system's use of factors such as information technology infrastructure on the effectiveness of strategic measurement systems. Moreover, strategic measurement system's implementation factors such as data collection systems, knowledge management, and sharing were not explored. Neither did the study establish the maturity levels of the independent variables for optimal sustainable performance. This study being among the few conducted in Kenya on the concept of strategic measurement system, more replicative research in the sector and other sectors of the economy in Kenya would provide more data for validation of the findings and conclusions.

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APPENDICES

Appendix I: Cover Letter

JOMO KENYATTA UNIVERSITY

OF

AGRICULTURE AND TECHNOLOGY

P.O. BOX 6200-00200

NAIROBI. KENYA

DATE: 25/04/2018

Dear Respondent,

RE: RESEARCH QUESTIONNAIRE

I am a graduate student at Jomo Kenyatta University of Agriculture and Technology. I am conducting an academic research entitled ***"Impact of measurement systems design on performance of medium sized service firms in Kenya"***. The findings of the study will be significant in providing solutions to the management challenges facing medium sized service firms in Kenya and also to provide recommendations towards enhancing their competitiveness, performance and overall contribution to the general economy.

You have been identified as a major player whose experience and ideas is representative of the sub sector. By this letter, I therefore seek for your participation in the study by completing the attached questionnaire. Please note that this is an academic research and confidentiality is strictly adhered to. Kindly spare 30 minutes to complete the questionnaire attached.

For further information, do not hesitate to get in touch with the undersigned through email: kennethgor@gmail.com or mobile phone number 0733-323234.

Thank you for your support.

GOR Kenneth

Appendix II: Questionnaire

Kindly answer the following questions by ticking or marking the boxes on the right of each statement using X or √ or by filling the empty spaces. Please note that this is an academic research and the information provided will be held in strict confidence. The questionnaire takes approximately 30 minutes to complete.

Part A: General Information

Date:……..

1. Name of your company (optional)…..……
2. What is your position in the company…….
3. In which service sub sector of the economy is your company's core business?

Transport & Warehousing [ ] Hospitality (*Hotel, tourism, eatery*) [ ]

Information Communication Technology [ ] Financial & Services [ ]

Professional Services [ ] Education [ ]

Health [ ] Arts & Entertainment [ ]

Other (specify)……

4. How many years has your organization been in operation?

< 1 year [ ] 1-3 years [ ] 4-6 years [ ] 7-9 years [ ]

10-12 years [ ] 13-15 years [ ] >15 years [ ]

Firm Size

Please indicate the following

1. How many branches does your organization have…….....
2. How many regular employees (*total of temporary, Contract & permanent*) does your organization have?

   < 10 [ ] 10-20 [ ] 21-30 [ ] 31-40 [ ] 41-50 [ ]

   51-60 [ ] 61-70 [ ] 71-80 [ ] 81-90 [ ] 91-100 [ ]

Other……

3. Approximate the total assets or financial investments of your business in Ksh.

   <50,000 [ ] 50,000- 150,000 [ ] 150,000 - 350,000 [ ] 350,000 - 650,000 [ ]

   0.65-1 million [ ] 1-5 million [ ] 5-14 million [ ] 15-30 million [ ]

   31-70 million [ ] 71-150 million [ ] 151-500 million [ ] > 500 million [ ]

Organizational Structure

1. Which of the following is the ***MOST USED*** method for organizing tasks in your firm? (***TICK ONLY ONE OPTION MOSTLY USED***)
   i. Employees of similar specialty are grouped according to duties performed and report to one departmental head (Functional) [ ]
   ii. Employees of different specialties are grouped and work according to service/product/region/market/customer (Divisional Units) [ ]
   iii. Employees are grouped into teams but fulfil different roles across the organization and report to different departmental heads(Matrix) [ ]
   iv. Employees or teams are self-directed in conducting their duties (specialization/self-directed) [ ]
   v. No fixed structure, changes as need arise (changing structure) [ ]
   vi. Any other……
2. How many management levels are there in your organization?

   More than six [ ] Six [ ] Five [ ] Four [ ] Three [ ] Two [ ] One [ ]

3. Rank the following in order of frequency of their use in sharing work related information to members of your organization. (*Rank the **MOST USED** **c**ommunication channel as **NUMBER 1,** others to follow sequentially*)

	Communication Channel	**Rank**
i.	Formal letters/memos	
ii.	Formal boardroom presentations	
iii.	Formal meetings	
iv.	Informal face to face communication to individual employees	
v.	Informal meetings with a section of or all employees	
vi.	Computer networks/intranets	
viii	Any other……	

4. On a scale of 1-5, indicate the extent to which you agree to the following statements

		Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
i.	In my organization front line employees make important decisions that influence how the business is run	[ ]	[ ]	[ ]	[ ]	[ ]
ii.	In my organization, views from all employees are taken into account while setting policies, procedures and making important decisions	[ ]	[ ]	[ ]	[ ]	[ ]
iii.	In my organization junior employees have capacity to make decisions with little or no input from their superiors	[ ]	[ ]	[ ]	[ ]	[ ]

Use of Strategic Performance Measurement Systems

1. Tick applicable option in the questions below

Question	Optional Choices	Tick Appropriately
Who conducts situational analysis for your firm?	a) Consultants	[ ]
	b) Internal employees	[ ]
	c) Internal employees assisted by consultants	[ ]
	d) Others ……..	[ ]
Who in your firm gathers, analyse and store data?	a) All employees	[ ]
	b) Only supervisors and management staff	[ ]
	c) Only management staff	[ ]
	d) Others ……..	[ ]
Who in your firm participate in strategic planning	a) All staff members	[ ]
	b) Only supervisors and management staff	[ ]
	c) Only management staff	[ ]
	d) Others ……..	[ ]
Who in your organization is authorized to send inter departmental formal communications	a) All employees are allowed to freely communicate with teams in other sections	[ ]
	b) Supervisors must approve Inter departmental communication	[ ]
	c) Inter departmental communication must be approved by unit managers	[ ]
	d) Interdepartmental communication must go through the top management	[ ]
	e) Others ……..	[ ]

2. On a scale of 1-5, to what extent do you agree that your organization's performance system is effective in facilitating the following?

		Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
i.	Availability of right information at all times	[ ]	[ ]	[ ]	[ ]	[ ]
ii.	Providing a comprehensive view of the firm compared to its competitors	[ ]	[ ]	[ ]	[ ]	[ ]
iii.	On strategy implementation, evaluation and re-formulation	[ ]	[ ]	[ ]	[ ]	[ ]
iv.	Provision of results for corrective actions	[ ]	[ ]	[ ]	[ ]	[ ]
v.	On employee motivation at all levels	[ ]	[ ]	[ ]	[ ]	[ ]

		Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
vi.	On objective budget preparation	[ ]	[ ]	[ ]	[ ]	[ ]
vii.	Strengthening of company brand & reputation	[ ]	[ ]	[ ]	[ ]	[ ]
viii.	Ensuring organizational learning	[ ]	[ ]	[ ]	[ ]	[ ]
ix.	Simplifying control and emphasizes responsibility	[ ]	[ ]	[ ]	[ ]	[ ]
x.	Communication of the results gained to the stakeholders	[ ]	[ ]	[ ]	[ ]	[ ]

Part B: Breadth of Measurement System

1. Which of the following financial performance indicators are regularly measured and reported to your company stakeholders (*you can tick more than one option*)

Performance Indicator		Tick where applicable
i.	Operating cost	[ ]
ii.	Operating income	[ ]
iii.	Sales growth	[ ]
iv.	Cash flow	[ ]
v.	Net profits	[ ]
vi.	Sales figures (value)	[ ]
vii.	Sales volumes	[ ]
viii.	Return on investment	[ ]
ix.	Cost versus budget	[ ]
x.	Unit cost of production	[ ]
xi.	Other (*Specify*)……	[ ]

2. Which of the following customer, learning & innovation indicators are regularly measured and reported to your stakeholders (*you can tick more than one option*)

Performance Indicator		Tick where applicable
Customer Perspective		
i.	Customer satisfaction	[ ]
ii.	Customer value	[ ]
iii.	Market share	[ ]
iv.	Customer complaints	[ ]
v.	Percentage repeat customers	[ ]
Innovation and Learning		
vi.	Guarantee claims	[ ]
vii.	Continuous process improvement	[ ]
viii.	Service attributes	[ ]
ix.	Service quality	[ ]
x.	Average hours of employee training	[ ]
xi.	Other (*Specify*)……	[ ]

3. Which of the following internal business process indicators are regularly measured and reported to your company stakeholders (*you can tick more than one option*)

Performance Indicator		**Tick where applicable**
i.	On time delivery	[ ]
ii.	Lead time	[ ]
iii.	Defect rate	[ ]
iv.	Employee turnover ratio	[ ]
v.	Employee absenteeism	[ ]
vi.	Response rate	[ ]
vii.	Staff competencies	[ ]
viii.	Resource utilization	[ ]
ix.	Supplier performance	[ ]
x.	Incoming material quality	[ ]
xi.	Employee satisfaction	[ ]
xii.	Measures of clear business strategy	[ ]
xiii.	Other (*Specify*)……	[ ]

4. On a scale of 1-5, to what extent do you agree that the following external measures are satisfactorily ***MEASURED, ANALYSED & REPORTED*** in your organization?

		Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
i.	Quality of suppliers' services	[ ]	[ ]	[ ]	[ ]	[ ]
ii.	Quality of service distribution	[ ]	[ ]	[ ]	[ ]	[ ]
iii.	Value of the service offered	[ ]	[ ]	[ ]	[ ]	[ ]
iv.	Customer loyalty	[ ]	[ ]	[ ]	[ ]	[ ]
v.	Service price competitiveness	[ ]	[ ]	[ ]	[ ]	[ ]
vi.	Company brand image	[ ]	[ ]	[ ]	[ ]	[ ]

5. On a scale of 1-5, to what extent do you agree that the following internal measures are satisfactorily ***MEASURED, ANALYSED & REPORTED*** in your organization?

		Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
i.	Employee turnover ratio	[ ]	[ ]	[ ]	[ ]	[ ]
ii.	Employee needs assessment	[ ]	[ ]	[ ]	[ ]	[ ]
iii.	Customer repurchase frequency	[ ]	[ ]	[ ]	[ ]	[ ]
iv.	Company impact assessment	[ ]	[ ]	[ ]	[ ]	[ ]
v.	Equipment effectiveness	[ ]	[ ]	[ ]	[ ]	[ ]
vi.	Company profitability compared to competitors	[ ]	[ ]	[ ]	[ ]	[ ]
vii.	Market investigation	[ ]	[ ]	[ ]	[ ]	[ ]
viii.	Conformance to legal requirements	[ ]	[ ]	[ ]	[ ]	[ ]
ix.	Level of adoption of new technology	[ ]	[ ]	[ ]	[ ]	[ ]
x.	Service efficiency	[ ]	[ ]	[ ]	[ ]	[ ]
xi.	Employee competency	[ ]	[ ]	[ ]	[ ]	[ ]
xii.	Workplace quality	[ ]	[ ]	[ ]	[ ]	[ ]

6. Do you believe increasing the number of performance measures is important for your organization's performance? If yes, explain how

……

……

……

Part C: Depth of Measurement System

1. What is the key focus of the performance measurement system in your organization?

   Achievement of operational efficiency [ ]

   Achievement of the overall annual business performance [ ]

   Achievement of long term goals of the organization [ ]

   Any other……..

2. Which of the following are measured in your organization?

   Performance of some operational activities [ ]

   Performance of important operational activities [ ]

   Performance of all operational activities [ ]

   Any

   other…….

3. To what extent is performance measurement system implemented in your organization?

   In a section of some departments [ ]

   Only in some departments [ ]

   Across all the departments (units) [ ]

   Any other……..

4. In each category, which of the following are used to report disaggregated employee performance in your organization?

Category	Optional choices	Score
Employee work attendance	a) Total Man hours in a month	[ ]
	b) Total Man days in a month	[ ]
	c) Other (Specify)…….	[ ]
Employee effectiveness	a) Complaints per customer served	[ ]
	b) Total customer complaints per month	[ ]
	c) Other (Specify)…….	[ ]
Sales Revenue	a) Average sales per day	[ ]
	b) Total sales revenue per month	[ ]
	c) Other (Specify)…….	[ ]

5. Which of the following output targets are measured and recoded for operational employees in your organization? (*You can tick more than one*)

Hourly outputs	[ ]	Quarterly outputs	[ ]
Daily outputs	[ ]	Semi-annual outputs	[ ]
Weekly outputs	[ ]	Annual outputs	[ ]
Monthly outputs	[ ]	Other (specify)……...	

6. Which of the following classes do you use in your organization to report revenue sales? (Y*ou can tick more than one option where applicable*)

Customer demographics	[ ]	Service line	[ ]
Time of day	[ ]	Sales region	[ ]
Employee	[ ]	Company totals	[ ]
Customer level of spending	[ ]	Other (specify)……...	

7. Who in your organization controls daily allocation of resources for operational tasks?

Top managers	[ ]	Middle level managers	[ ]
Frontline super visors	[ ]	Individual employee conducting the tasks	[ ]

8. On a scale of 1-5, use the introductory statements in ***bold*** to describe performance measurement in your organization.

	Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
Performance measurement in our organization…					
i. …clearly define operational objectives	[ ]	[ ]	[ ]	[ ]	[ ]
ii. …measure all objectives and performance in all departments	[ ]	[ ]	[ ]	[ ]	[ ]
iii. … only measure the general business performance	[ ]	[ ]	[ ]	[ ]	[ ]
iv. …measure performance of different departments	[ ]	[ ]	[ ]	[ ]	[ ]
v. …focus on practical implementation of the performance system	[ ]	[ ]	[ ]	[ ]	[ ]
vi. …concentrate on important operational objectives	[ ]	[ ]	[ ]	[ ]	[ ]

		Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
vii.	…measures are sufficiently disaggregated to capture data for short periods	[ ]	[ ]	[ ]	[ ]	[ ]
viii.	… exhaustively measure operational objectives and performance	[ ]	[ ]	[ ]	[ ]	[ ]
ix.	…business level objectives and performance are adequately measured	[ ]	[ ]	[ ]	[ ]	[ ]
x.	…successfulness of corporate strategy is evaluated	[ ]	[ ]	[ ]	[ ]	[ ]
xi.	…measures for evaluation of fulfilling strategic goals are well defined and used	[ ]	[ ]	[ ]	[ ]	[ ]
xii.	… Measures are sufficiently cascaded down through the organizational structure and components	[ ]	[ ]	[ ]	[ ]	[ ]
xiii.	…concentrate only on important corporate objectives	[ ]	[ ]	[ ]	[ ]	[ ]

9. What are the critical areas of performance measurement that detail matter most?

……..

Part D: Alignment of Measurement System

1. Does your firm have an operational performance contracting system? Yes [ ] No [ ]
2. If yes in one (1) above, what cadre of employees sign performance contracts?
   Only the top management [ ] Top and middle (supervisors) management [ ]
   Only the technical staff [ ] All employees [ ] Any other……
3. Does your firm have a reward system for employees' excellent performance?
   Yes [ ] No [ ]
4. If yes in three (3) above, what kind of rewards are mostly offered?
   Cash reward [ ] Staff Promotions [ ]
   Staff trainings [ ] Paid leave/ Vacation [ ]
   Spot awards [ ] Any other……
5. On a scale of 1-5, use the introductory statements in ***bold*** to describe performance measurement in your organization.

		Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
Performance measurement in our organization…						
i.	…is derived from organizational strategic priorities	[ ]	[ ]	[ ]	[ ]	[ ]
ii.	…has full top management support	[ ]	[ ]	[ ]	[ ]	[ ]
iii.	…link operations to strategic objectives	[ ]	[ ]	[ ]	[ ]	[ ]
iv.	…is connected with our main focus of long term objectives	[ ]	[ ]	[ ]	[ ]	[ ]
v.	…encourage employee to focus on important activities	[ ]	[ ]	[ ]	[ ]	[ ]
vi.	…provide integration of organizational activities	[ ]	[ ]	[ ]	[ ]	[ ]
vii.	…has clearly defined strategic objectives	[ ]	[ ]	[ ]	[ ]	[ ]

6. Which efforts are there to align measurement systems to your organizational strategy?

……..……

Part E: Flexibility of Measurement System

1. How often does your firm generate reports on its key performance indicators

   Quarterly [ ] Bi-annually [ ] Annually [ ]

   Every three years [ ] Every five years [ ] Every 10 years [ ]

   Never [ ] Other…….

2. How often does your organization review effectiveness of its performance measures?

   Quarterly [ ] Bi-annually [ ] Annually [ ]

   Every three years [ ] Every five years [ ] Every 10 years [ ]

   Never [ ] Other…….

3. Which of the following tools is mostly used in your organization for collection of performance data?

   Paper based checklists [ ] Manual digital tools (phones/tablets/computers) [ ]

   Automatic computerized monitors [ ] Remote sensing []

4. On a scale of 1-5, use the introductory statements in ***bold*** to describe performance measurement in your organization.

		Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
Performance measurement in our organization…						
i.	…has a system for continuously monitoring internal development	[ ]	[ ]	[ ]	[ ]	[ ]
ii.	…has a system for continuously monitoring external development	[ ]	[ ]	[ ]	[ ]	[ ]
iii.	…has a systems for instituting changes/re-alignment in the systems	[ ]	[ ]	[ ]	[ ]	[ ]
iv.	…has a system for reviewing objectives, targets, standards and strategic assumptions	[ ]	[ ]	[ ]	[ ]	[ ]
v.	….has a system for reviewing measures	[ ]	[ ]	[ ]	[ ]	[ ]
vi.	…triggers rapid response to customer demands with time pressure	[ ]	[ ]	[ ]	[ ]	[ ]
vii.	…stimulate generation of new ways for managing tasks and circumstances	[ ]	[ ]	[ ]	[ ]	[ ]
viii.	…adequately provide information for alternative use of resources	[ ]	[ ]	[ ]	[ ]	[ ]

5. In your organization, are there important areas of performance measurement that flexibility is most critical?

……

Part F: Firm Performance

a) Determinants of Performance (Customer Value)

1. On a scale of 1-5, indicate your level of agreement to the following statements regarding your organization in the past 5 years (2013-2017).

	Service Quality & Flexibility	Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
i.	All our employees always meet response time targets set for them	[ ]	[ ]	[ ]	[ ]	[ ]
ii.	All our employees keep accurate records in their work stations	[ ]	[ ]	[ ]	[ ]	[ ]
iii.	Our frontline staff work well only under supervision	[ ]	[ ]	[ ]	[ ]	[ ]
iv.	Our service crew aren't expected to tell customers exactly when the service will be performed	[ ]	[ ]	[ ]	[ ]	[ ]
v.	It is not reasonable to expect prompt service from employees	[ ]	[ ]	[ ]	[ ]	[ ]
vi.	Large number of our clients fail to order our services due to high prices	[ ]	[ ]	[ ]	[ ]	[ ]
vii.	Our services are available at all times	[ ]	[ ]	[ ]	[ ]	[ ]
viii.	We don't receive customer complaints	[ ]	[ ]	[ ]	[ ]	[ ]
ix	Delivery of our services are standardized for all customers	[ ]	[ ]	[ ]	[ ]	[ ]
x.	In my organization, order wait period for given services are always constant	[ ]	[ ]	[ ]	[ ]	[ ]
xi.	Our service specifications are always standardized	[ ]	[ ]	[ ]	[ ]	[ ]
xii.	All our service provision procedures are frequently upgraded	[ ]	[ ]	[ ]	[ ]	[ ]
xiii.	All our employees are highly innovative	[ ]	[ ]	[ ]	[ ]	[ ]

Service Efficiency & Innovation

2. What is was your firm's average efficiency (percentage of input (Cost of production)/output (Revenue)) in the past 12 months

   <60% [ ] 61-70% [ ] 71-80% [ ] 81-90% [ ] >90% [ ]

3. Please indicate the number of new service lines that have been developed and launched by your firm to the market in the last 3 years

   None [ ] 1-2 [ ] 3-4 [ ] 4-6 [ ] > 6 [ ]

4. Please indicate the number of new service lines introduced by your firm in the last three years but have since been removed from your sales line

   None [ ] 1-2 [ ] 3-4 [ ] 4-6 [ ] > 6 [ ]

b) Lagging Indicators (Competitiveness and Profitability)

Sustainable Competitiveness (Sales growth & Customer loyalty) and Profitability

5. What was your company's average sales growth in percentage in the past 12 months

   < 0% [ ] 0-10% [ ] 11-20% [ ] 21-30% [ ]

   31-40% [ ] 41-50% [ ] 51-60% [ ] 61-70% [ ]

   71-90% [ ] 91-110% [ ] 110-150% [ ] >150% [ ]

6. What was your company's average revenue growth in percentage in the past one year

   < 0% [ ] 0-10% [ ] 11-20% [ ] 21-30% [ ]

   31-40% [ ] 41-50% [ ] 51-60% [ ] 61-70% [ ]

   71-90% [ ] 91-110% [ ] 110-150% [ ] >150% [ ]

7. With regard to the past 5 years (2013-2017) what extent do you agree to the following statements

	Customer loyalty	Strongly disagree (1)	Disagree (2)	Somehow agree (3)	Agree (4)	Strongly agree (5)
i.	Most of our new clients come through referrals by our customers (Loyalty)	[ ]	[ ]	[ ]	[ ]	[ ]
ii.	Repeat customers form our main client base (Loyalty)	[ ]	[ ]	[ ]	[ ]	[ ]
iii.	Our customers are always willing to pay more for our services (Satisfaction)	[ ]	[ ]	[ ]	[ ]	[ ]

8. Please indicate the gross profit in percentage (%) earned by your company in the last financial year

< 0%	[ ]	0-10%	[ ]	11-20%	[ ]	21-30%	[ ]
31-40%	[ ]	41-50%	[ ]	51-60%	[ ]	61-70%	[ ]
71-90%	[ ]	91-110%	[ ]	110-150%	[ ]	>150%	[ ]

9. Please indicate net income in percentage (%) earned by your company in the last financial year

< 0%	[ ]	0-5%	[ ]	6-10%	[ ]	11-15%	[ ]
16-20%	[ ]	21-25%	[ ]	26-30%	[ ]	31-35%	[ ]
36-40%	[ ]	41-45%	[ ]	46-50%	[ ]	>50%	[ ]

10. What attributes of the strategic measurement system design would you indicate to have most significant influence on your firm's performance in the past 5 years (2013-2017) and why is this so?

    .....

    .....

11. Give suggestions on how performance measurement systems used in your organization can be improved

    .....

    .....

THANK YOU

Appendix III: Secondary Data Collection Schedule

Please Indicate the percentage change in the following performance indicators in your company over the past 5 years

Indicator	2013	2014	2015	2016	2017
Average sales growth					
Average revenue growth					
Net profits					
Efficiency (Return on Equity)					
R&D Investments					
Repeat customers					

Indicate by ticking whether or not your company adequately implement the following

Dimension	Measure	Yes	No
Environment	Environmental audits and accounting		
	Renewable/efficient energy systems		
	Recycle and reuse systems		
Social	Social impact audits		
	Employee training time/profit		
	Employment turnover control		
Integrated	ISO standardization		
	KEBS quality standardization		
	Safety standardization		
Community & Government	Tax compliance		
	Cooperate social responsibility initiatives		
	Ethical business practices initiatives		

Thank You

Appendix IV: Summary of Empirical Literature Review

Author (s)	Topic	Findings	Research Gap
Breadth			
Sousa, Aspinwall and Rodrigues (2006)	Performance measures in English small and medium enterprises: Survey results	Adoption of PMS by SMES is very low and limited to very few functionally oriented measures such as financials, business processes and customer perspectives	Low response rate; Delimited to English SMES
Kumar and Bhagwat (2006)	Performance measurements in the implementation of information systems in small and medium-sized enterprises: A framework and empirical analysis	Limited use of strategic measures by Indian SMES	Restricted to establishing measure performance in the implementation of information systems in normal routine business operations; Delimited to Indian SMES
Garengo and Bernardi (2007b)	Organizational capability in SMEs. Performance measurement as a key system in supporting company development	Limited adoption of broad based SPMS by SMEs; positive relationship between PMS use and qualitative growth	Focused on manufacturing SMEs in Veneto region, Italy
Hinton and Barnes (2009)	Discovering effective performance measurement for e-business	UK SMEs primarily use a mix of measure with their performance metrics focusing on financial measures such as sales values and volumes	Delimited to UK SMEs e-businesses
Fwaya, Odhuno, Kambona and Othuon (2010)	Performance measurement and hotel industry in Kenya– A review	Relationships between PMS dimensions are complex and vary over time according to the PMS scope, type of hotel, stakeholders and strategies	The study was limited to evaluating PMS use in the hotel industry in Kenya
Heinrich (2011)	The performance of performance standards	PMS are weakly related to the true long-run impacts of the employment and training programs in the US	Delimited to employment and training programs in the US
Kihara (2013)	Factors affecting the implementation of strategic performance measurement system of parastatals in Kenya. A case study of the KeRRA	Use of SPMS is not guaranteed and is influenced by its scope, finance, top management, employee capacity and technology	Case study of Kenya Rural Roads Authority
Hvidman and Andersen (2013)	Impact of performance management in public and private organizations	Impact of PMS is contingent on the sector and scope of the PMS;	Compared the effect of PMS between public and private schools in Denmark

Author (s)	Topic	Findings	Research Gap
		Public schools used narrow PMS thus no impact on outcomes	
Chimwani *et al*. (2013)	Application of strategic performance measures in small and medium-sized manufacturing enterprises in Kenya: The Use of the BSC perspective	limited use of strategic measures with preference of short-term financial measures among Kenyan manufacturing SMEs	Based on the manufacturing SMEs in Kenya
Saunila, Pekkola and Ukko (2014)	The relationship between innovation capability and performance	Measurement partly moderates the relationship between innovation capability and firm performance	Web based survey; Based on Finish firms
Gerrish, (2014b)	The effect of the child support performance and incentive Act of 1988 on rewarded and unrewarded performance goals	PMS may not improve performance when the scope of the PMS was too narrow and focused on mainly on operational achievements	Evaluated only child support programmes in the USA
Silvi, Bartolini, Raffoni and Visani (2015)	The practice of strategic performance measurement systems: Models, drivers and information effectiveness	88% of companies include financial indicators in their reporting but very few include other dimensions especially the external dimensions and forward-looking indicators (Innovation & Human Resource Management)	Focused on Italian medium sized firms
Depth			
Hudson, Smart and Bourne (2001)	Theory and practice in SME performance measurement systems	Sound PMS must provide reasonable detail, which shows how measures should look like and provide a useful development process	The study utilized a case study approach that focused on accumulation and interpretation of qualitative data; Small sample size (8 SMEs)
Bourne, Kennerley and Franco-Santos (2005)	Managing through measures: A study of impact on performance	The intensity of engagement and interaction with the performance measurement processes has a greater impact on performance	Based on a case study of one organization with different business units with implications for wider validity
Prieto and Carvalho (2011)	Strategic alignment and performance: Brazilian companies in the medical diagnostics sector	PMS that optimizes detail helps in transforming strategic objectives into operational measures with relatively high effectiveness	Focused on Brazilian companies in the medical diagnostics sector

Author (s)	Topic	Findings	Research Gap
Rompho and Boon-itt (2012)	Measuring the success of PMS in Thai firms	Effectiveness of PMS is influenced by its detail validity and accountability	Firm size not defined; Sector not isolated; Delimited to Thai firms
Konjer (2015)	Strategy and PM: How do managers react if there is tension between strategy and performance measurement	Most PMS lack crucial detailed information to help enhance performance	Qualitative research approach
Wasneiewski (2017)	A PMS for small enterprises: A case study	SMEs should not use deep PMSs, because they focus on just a few aims and prolong the implementation of the system	The study was case based of a small Polish firm. Hence, the findings can only be generalized with caution.
Kaminskaite (2017)	Reducing the Failure Rate of SMEs. Comparative Analysis of Excellence Management Systems: Six Sigma and Lean Start-up	Use of inaccurate metrics, particularly, lack of application to detail of performance measures by SMEs	The study was based on qualitative research method using a case study of one start-up company in Helsinki
Alignment			
Taticchi, Cagnazzo and Botarelli (2008)	Performance measurement and management (PMM) for SMEs: A literature review and a reference framework for PMM design	Strategic alignment of PMS has a significant effect on performance	Findings based on secondary data
Fauske, Busi and Alfnes (2008)	Enabling performance management in SMEs: A study into what SMEs need to measure and how they should manage performance	Imperfect PMS which are unbalanced, static, not aligned to strategy and suboptimal	Based on subjective interviews; Small sample size (5 manufacturing companies with less than 250 employees)
Cocca and Alberti (2010)	A framework to assess performance measurement systems in SMEs	Lack of strategic alignment of SMEs' PMS with focus on financially measures	Specific to 87 Italian manufacturing SMEs
Ahmed and Sun (2012)	Developing a model for managing production performance of small and medium enterprises in Sweden	Positive effect of PMS strategic alignment on performance; Limited alignment of PMS used by SMEs	Based on a case study of firms in Sweden
Carlyle (2013)	Business performance measurement use in a small to medium enterprise: A case study	Lack of alignment of PMS to strategy in SMES	Based on a single case study SME employing less than 65 people in New Zealand
Alexandra (2015)	Performance Management Model for SMEs	Implementation of PMS by SMEs is influenced by limited resources, lack of well-defined strategy, and	Findings based on secondary data from other studies

Author (s)	Topic	Findings	Research Gap
		lack of understanding of the purpose of a PMS	
Langwerden (2015)	PMS Development in SMEs: Testing & Refining The Circular Methodology	Lack of alignment between PMS and strategy characterized by high amount of tacit knowledge and non-formalized practices among SMEs, which limit the ease of data gathering.	Based on a small manufacturer in the food sector; Data gathering method was subjective
Akpabot and Khan (2015)	Assessing the impact of performance measurement systems in Northern Nigeria small businesses	PM system does have positive effect on SMEs performance; Positive effects of strategically aligned PMS on firm performance	The study adopted use of simple categorical variables of yes and no.
Virtanen (2017)	Productizing performance measurement system for small and medium-sized enterprises: Case Finnish service SMEs	PMS is rarely aligned with strategy in SMEs because there is no strategy	Study was based on a descriptive case of one small Finish company employing only 10 people
Felizardo, Félix and Thomaz (2017)	Organizational performance measurement and evaluation systems in SMEs: The case of the transforming industry in Portugal	Lack of explicit strategies and methodologies to support the control process leading to a reactive approach and lack of strategic alignment of PMS by SMEs	Low response rate (12 SMEs in Portugal) limiting generalization of findings
Flexibility			
Wu (2009)	Measuring performance in small and medium enterprises in the information & communication technology industries	SMEs mostly adopt flexible PMS to meet their ever changing processes and environments	The study focused only on SMEs in Australia and South China
Jamil and Mohamed (2011)	Performance measurement system (PMS) in small medium enterprises (SMES): A practical modified framework	PMS must be aligned with strategy and consist of multi-dimensional measures	The findings are based on secondary data from other studies
Raymond, Marchand, St-Pierre and Cadieux (2012)	Re-conceptualizing small business performance from the owner-manager perspective	Permeability of small businesses owners to their environment, thus, the need for strategic flexibility of measuring the small firms	Based on 433 Canadian small businesses hampering capacity to generalize the findings to medium sized enterprises
Masri (2013)	Performance measurement systems in service SMEs: A Brunei Case Study	Limited (25%) flexibility of the PMS used by SMEs	Low response rate of 17.5% (62); Only 4 cases used to

Author (s)	Topic	Findings	Research Gap
			draw conclusions on PMS flexibility
Virtanen (2017)	Productizing performance measurement system for small and medium-sized enterprises: Case Finnish service SMEs	PMS used by SMEs are often static rather than dynamic models and fails to recognize changes in internal and external environments	Study was based on a descriptive case of one small Finish company employing only 10 people
Wasneiewski (2017)	A performance measurement system for small enterprises: A case study	Performance Measurement System should be dynamic and flexible so as to be able to respond to the dynamic needs of these companies	The study was case based of a small Polish firm. Hence, the findings can only be generalized with caution
Firm Size			
Hoque and James (2000)	Linking balanced scorecard measures to size and market factors: Impact on organizational performance	Positive relationship between firm size and use of performance measurement systems	Study confined to manufacturing firms in Australia; Small sample size (66)
Bourne, Kennerley and Franco-Santos (2005)	Managing through measures: A study of impact on performance	Performance Measurement is easier in larger organizations and more problematic in smaller firms due to differences in human and financial capabilities	Study based on a case of a single UK company with data being collected from several branches of the company
Tapinos, Dyson and Meadows (2005)	The impact of performance measurement in strategic planning	Organizational size and the rate of change in the sector creates variation in the impact of performance measurement	UK based; low response rate; subjective data collection method
Cocca and Alberti (2010)	A framework to assess performance measurement systems in SMEs	Larger companies and companies having advanced information management practice, more likely to implement PMS	Specific to 87 Italian manufacturing SMEs; Simple categorical scale for data analysis;
Ahmada and Zabria (2016)	The application of non-financial PM in Malaysian manufacturing firms	Firm size (annual sales turnover and number of employees) are the most likely to increase the extent of use of performance measurement systems	Based on 118 Malaysian manufacturing firms; Too general included all types of firms from micro, small, medium to large
Dziekoński, Ibrahim, & Abdul-Majeed Mahamadu (2018)	Framework of performance measurement practices in construction companies in Egypt	Performance indicators highest (40%) among medium-sized Egyptian companies	Showed difference in the PMS profile and the importance of PMS's elements between SMEs and large companies. However the

Author (s)	Topic	Findings	Research Gap
			reason for the difference is not provided
Firm Structure			
Lee and Yang (2011)	Organization structure, competition and performance measurement systems and their joint effects on performance	Found a significant association between organizational structure and design of PMS	Data collected from 168 large Taiwanese firms listed on the Taiwan Stock Exchange;
Yang (2012)	Firm Size, Strategic Communication, and Organization	Organizational structure has significant impact on the extent and types of financial or non-financial performance measures to be included in a Performance Measurement System	Focused on firms with several branches (>2). Firms with fewer branches were excluded
Bäuml (2014)	The impact of strategic performance management on SMEs performance	Flexible organizational structures promote tactical and context-specific knowledge, which promotes adaptability of the performance measurement system.	Findings based on 90 Swiss and Singaporean manufacturing SMEs; Firm performance was based on perceptions of key informants rather than objective estimates of performance
Marija, Slavica and Grozdana (2014)	Specifics of management in small and medium-size enterprises in Serbia	Small and Medium Enterprises mostly adopt functional structures which offer them the benefit of clear and direct control, good communication and coordination of employees within the functions	Based in Serbia; Used simple frequency counts without inferential testing
Firm Performance			
Wadongo, Odhuno, Kambona and Othuon (2010)	Key performance indicators in the Kenyan hospitality industry: A managerial perspective. Benchmarking	Hospitality managers in Kenya were focusing on financial and result measures of performance while ignoring non-financial and determinant measures	Delimited to only 6 five-star hotels in Mombasa, Kenya
Chimwani, Nyamwange and Robert (2013)	Application of strategic performance measures in small and medium-sized manufacturing enterprises in Kenya: The Use of the balanced scorecard perspective	Method of measuring performance in SMEs was focused on financial metrics	Study based on the manufacturing sector of the economy
Ahmad (2014)	The adoption of Management accounting	SMEs use both financial and non-financial	Low response rate (16.1%);

Author (s)	Topic	Findings	Research Gap
	practices in Malaysian small and medium-sized enterprises	measures with more emphasis on financial measures	Focused on manufacturing firms in Malaysia
Maduekwe and Kamala (2016)	Performance measurement by small and medium enterprises in Cape Metropolis, South Africa	Financial performance measures are more frequently used than nonfinancial performance measures by SMEs	Non probabilistic sampling technique (convenience); Small sample size (92); SMEs in Cape Metropolis, SA

Appendix V: Measurement Models

Model	Author	Issues highlighted	Dimensions of Performance Measures/Contributions	Limitations
Performance Measurement Questionnaire	(Dixon, Nanni, & Vollman, 1990)	Helps in identification of, firm improvement needs, extent to which existing measures support improvement and in establishing agenda for PM improvement	A useful step in the performance measurement within other frameworks	Not comprehensive; Nonspecific on a given framework. That is, the model is not build on a fixed framework. Does not provide identification of specific performance measures that are related to strategy of the organization
Results-Determinants Framework	(Fitzgerald, Johnson, Brignall, Silvestro, & Voss, 1991)	Reflects the concept of causality and acknowledges that the results obtained today are a function of past business performance in relation to specific determinants.	Measures are classified into results of strategy (financial & SCA); determinants of performance (Resource utilization, service quality, innovation and flexibility). Have measures for operational units, business units and strategic levels of the business	Does not show the link between different business dimensions; lacks strategic alignment, and focus on top down approach
Strategic Measurement Analysis and Reporting Technique (SMART) Performance Pyramid	(Lynch & Cross, 1991)	Aims to align firm strategy with strategic business level objectives and operational level objectives	External effectiveness and internal efficiency. Enhance strategic alignment, linkage between measures and contain measures of three levels of the business. Focus on top management support	Does not have a concept of identifying KPI and does not explicitly integrate the concept of continuous improvement
EFQM Excellence Model	(EFQualityM, 2012)	Identify fundamentals of excellence as customer value, creating sustainable future, developing organizational capacity, creativity & innovation, leadership, agility of management, talent and sustained outstanding results	Strong interlinkage between the measures; constant feedback loop for continuous improvement;	Inadequate strategic alignment, limited top management orientation, do not have measures for all the business levels

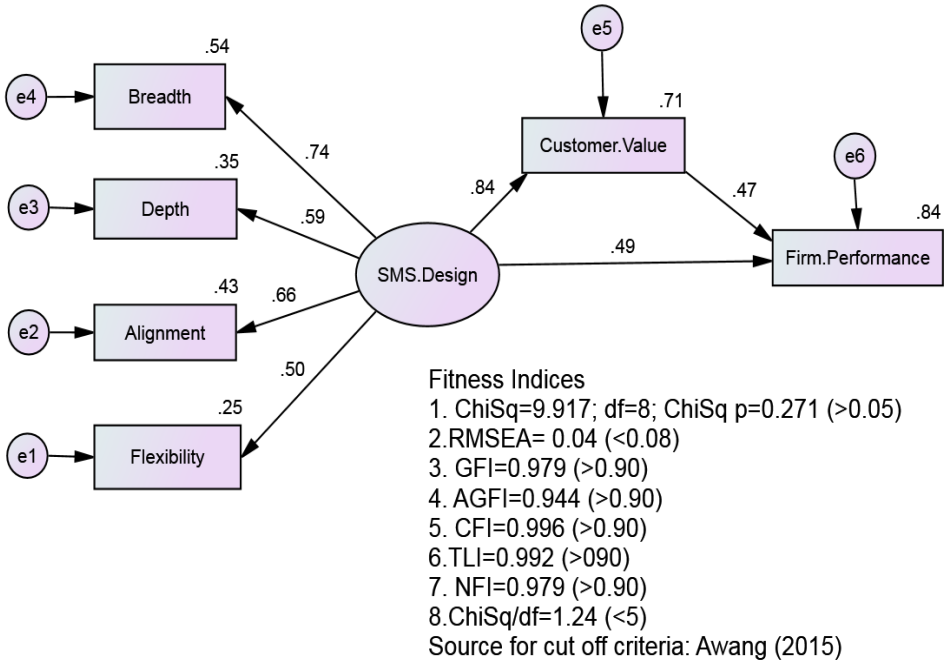
Model	Author	Issues highlighted	Dimensions of Performance Measures/Contributions	Limitations
Balanced Score Card (BSC)	(Kaplan & Norton, 1992)	Complements financial measures with non-financial performance measures	Financial, customer, internal processes, learning and growth perspectives. Most dominating and highly used performance measurement framework which highlights to consider non-financial measures compliment to financial performance measures	The problems to identify cause-and-effect relationships between linkages of different perspectives, static nature of performance measurement and major stakeholders related to performance are not adequately addressed
Simons' Four Levers of Control	(Simons, 1995)	The a framework offering a tool for managing the tension between (value) creation and control (managing and measuring value)	The model has four levers, which have to be analyzed and understood in order to implement strategy successfully (Core values/ belief systems; risks to be avoided/boundary systems; Critical performance variables/ Diagnostic control systems; Strategic uncertainty/ Interactive control systems). Attempt to include informal controls	Did not include other important informal controls such as group norms, socialization and culture; Developed at the senior management level; the same control mechanism e.g. the diagnostic and the interactive dimensions of the control systems may lead to different outcomes
Integrated Dynamic Performance Measurement System	(Ghalayini, Noble, & Crowe, 1997)	Provides measures at all levels of the firm; integrate general areas of success with associated PMs; Integrate relevant financial measures with operational PMs	Measures have strategic alignment, top management support, have measures for the three levels of business with adequate linkage between measures	Specific to the manufacturing firms
Integrated Performance Measurement Framework	(Medori, 1998)	Serves as PMS as well as a system for evaluating relevance of the existing measures	Measures have strategic alignment and top management support	Measures are not interlinked; not all levels of the organization has measures, manufacturing sector specific
Performance Management and Control Framework	(Ferreira & Otley, 2009)	Use of enquiry to gain insight into the various aspects of PMS design and use, and to form a coherent framework	The model is based on 12 questions, which are broad enough to cover the entire strategic performance management and control (PMC) process.	There is little advice on the interconnections between the questions; the antecedents, background, and organizational context of a performance

Model	Author	Issues highlighted	Dimensions of Performance Measures/Contributions	Limitations
				management system design not adequately addressed; model focused on the formal system design, rather than the system in use; model does not incorporate the benefit of Simons' (1995) belief and boundary systems.
Performance prism	(Neely, Adams, & Crowe, The performance prism in practice, 2001)	The stakeholder orientation	Stakeholder satisfaction, stakeholder contribution, strategies, processes, capabilities. It highlights comprehensive view of different stakeholders related to the performance of any enterprise and new stakeholders (potential customers, alliance partners or intermediaries) are also considered	It gives little way about how performance measures are being realized and hardly any consideration is given related to use of the framework for existing PMS
The action-profit linkage model	(Epstein & Westbrook, 2001)	Identify, measure and understand causal links between actions and profit	Company actions, delivered product/ services, customer actions, economic impact. It provides framework to manager to understand the linkages of actions within corporate functions to overall profitability and shareholder value	The practical application of model is not widely available
Kanji's business scorecard	(Kanji & Sa´, 2002)	Overcoming the weakness of BSC	Stakeholder values, process excellence, organizational learning, delighting stakeholders. It looks for process excellence, organizational values and learning and delighting stakeholders	This scorecard focuses mainly on the external stakeholders

Model	Author	Issues highlighted	Dimensions of Performance Measures/Contributions	Limitations
Beyond budgeting	(Hope & Fraser, 2003)	Devolving authorities to employees and making adaptive management process	***Specific dimensions of performance are not defined.*** It gives a process to devolve authorities to employees and designing an adaptive management process for flexible organizational structure	The main emphasis is on shareholders, other stakeholders are not adequately addressed
Dynamic multidimensional performance framework	(Maltz, Shenhar, & Reilly, 2003)	Thinking beyond BSC and integration of people development	Financial, market, process, people, and future. It integrates people development and future measures perspectives with BSC perspectives.	The implementation of framework is not adequately addressed
The performance planning value chain	(Neely & Jarrar, 2004)	Extracting value from data	***Specific dimensions of performance are not defined.*** It provides a systematic process for extracting value from data for adding knowledge and sustainable experience.	It is just a concept given, no empirical validation is presented
Holistic scorecard	(Sureshchandar & Leisten, 2004)	Integrated scorecard for measuring and managing business performance	Financial, customer, business process, intellectual capital, employee, and social Perspectives. It highlights six perspectives of performance – financial, customer, business process, intellectual capital, employee and social	The generalization of the framework is not discussed
Total performance scorecard	(Rampersad, 2005)	Integrating personal and organizational performance	Financial, customer, internal, knowledge, and learning perspectives, process improvement, personal improvement. It integrates personal and organizational scorecard with PDCA (plan, do, check, act) cycle, talent development cycle and Kolb's learning cycle	The insights are built from experience, no empirical validation is presented

Model	Author	Issues highlighted	Dimensions of Performance Measures/Contributions	Limitations
Holistic performance management framework	(Anderson, Henriksen, & Aarseth, 2006)	Holistic performance management	Stakeholder, market, supply chain management, value creation. It encompasses diverse areas that need to play together and reinforce each other to give full effect to organization.	The framework is developed on the basis of pilot study and needs to be further tested
Flexible strategy game-card	(Sushil, 2010)	Dual perspective of performance	Situation, actors, process, performance, value in offerings and relationships. This is an attempt to provide a holistic, integrated and dynamic view of performance management which highlights the importance of dual perspective of performance, i.e. enterprise perspective and customer perspective	Recent development, needs empirical validation
System dynamics Balanced scorecard	(Barnabe, 2011)	Matching traditional BSC approach with system dynamics principles	Financial, customer, internal process, learning, and growth. It provides a mapping tool for more comprehensive design of strategy map	The focus of the tool is largely on service based business which is very difficult to apply as generalized
Proactive balanced scorecard	(Chytas, Glykas, & Valiris, 2011)	Using fuzzy cognitive map (FCM) and simulations	***Specific dimensions of performance are not defined.*** It addresses the problems of BSC and overcoming it by generating dynamic networks, simulating KPI	It needs empirical validation
Sustainability performance measurement system	(Searcy, 2011)	Reviewing and updating of corporate sustainable PMS	***Specific dimensions of performance are not defined.*** It provides a conceptual framework to structure the process of updating a corporate sustainability PMS	The conceptual framework needs an empirical validation

Appendix VI: CFA Path



Absolute Fit (ChiSq=Discrepancy Chi Square; RMSEA=Root Mean Square Error Approximation; GFI=Goodness of Fix Index);

Increment Fit (AGFI=Adjusted Goodness of Fit; CFI=Comparative Fit Index; TLI=Tucker-Lewis Index; NFI=Normed Fit Index);

Parsimonious Fit (ChiSq/df=Chi Square/Degree of Freedom)

Before mediator (M) variable enter the model							
			Beta Estimate	**SE**	**C.R.**	**P-value**	**Results**
Y	←	X	1.430	.237	6.023	.0000	Significant
After mediator (M) variable enter the model							
Y	←	X	.789	.234	3.375	.0000	Significant
M	←	X	1.999	.335	5.962	.0000	Significant
Y	←	M	.317	.080	3.987	.0000	Significant

Model	CMIN (ChiSq)	DF	P-value	GFI	AGFI	CFI	TLI	NFI	CMIN/DF (ChiSq/df)	RMSEA
Indirect	31.696	9	.000	.940	.861	.951	.918	.933	3.522	.13
Indirect + Direct	9.917	8	.271	.979	.944	.996	.979	.979	.0271	.04
Difference	21.779	1	***Ha*** of mediating effect is supported (Chis Sq difference is >3.84)							

Appendix VII: CFA Output

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cust.Value	<---	SMS.Design	1.999	.335	5.962	***	par_6
Flexibility	<---	SMS.Design	1.000				
Alignment	<---	SMS.Design	1.446	.265	5.450	***	par_1
Depth	<---	SMS.Design	1.290	.253	5.104	***	par_2
Breadth	<---	SMS.Design	.756	.132	5.713	***	par_3
Firm.Performance	<---	SMS.Design	.789	.234	3.375	***	par_4
Firm.Performance	<---	Cust.Value	.317	.080	3.987	***	par_5

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Cust.Value	<---	SMS.Design	.843
Flexibility	<---	SMS.Design	.501
Alignment	<---	SMS.Design	.657
Depth	<---	SMS.Design	.594
Breadth	<---	SMS.Design	.738
Firm.Performance	<---	SMS.Design	.490
Firm.Performance	<---	Cust.Value	.467

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMS.Design	.082	.027	3.063	.002	par_7
e5	.135	.031	4.413	***	par_8
e1	.246	.030	8.194	***	par_9
e2	.227	.031	7.357	***	par_10
e3	.251	.032	7.773	***	par_11
e4	.039	.006	6.973	***	par_12
e6	.033	.006	5.419	***	par_13

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
Cust.Value	.710
Firm.Performance	.844
Breadth	.545
Depth	.353
Alignment	.432
Flexibility	.251

Factor Score Weights (Group number 1 - Default model)

	Cust.Value	Firm.Perf	Breadth	Depth	Alignment	Flexibility
SMS.Design	.078	.249	.203	.054	.067	.043

Total Effects (Group number 1 - Default model)

	SMS.Design	Cust.Value
Cust.Value	1.999	.000

	SMS.Design	Cust.Value
Firm.Performance	1.423	.317
Breadth	.756	.000
Depth	1.290	.000
Alignment	1.446	.000
Flexibility	1.000	.000

Standardized Total Effects (Group number 1 - Default model)

	SMS.Design	Cust.Value
Cust.Value	.843	.000
Firm.Performance	.883	.467
Breadth	.738	.000
Depth	.594	.000
Alignment	.657	.000
Flexibility	.501	.000

Direct Effects (Group number 1 - Default model)

	SMS.Design	Cust.Value
Cust.Value	1.999	.000
Firm.Performance	.789	.317
Breadth	.756	.000
Depth	1.290	.000
Alignment	1.446	.000
Flexibility	1.000	.000

Standardized Direct Effects (Group number 1 - Default model)

	SMS.Design	Cust.Value
Cust.Value	.843	.000
Firm.Performance	.490	.467
Breadth	.738	.000
Depth	.594	.000
Alignment	.657	.000
Flexibility	.501	.000

Indirect Effects (Group number 1 - Default model)

	SMS.Design	Cust.Value
Cust.Value	.000	.000
Firm.Performance	.634	.000
Breadth	.000	.000
Depth	.000	.000
Alignment	.000	.000
Flexibility	.000	.000

Standardized Indirect Effects (Group number 1 - Default model)

	SMS.Design	Cust.Value
Cust. Value	.000	.000
Firm. Performance	.394	.000
Breadth	.000	.000
Depth	.000	.000
Alignment	.000	.000
Flexibility	.000	.000

Appendix VIII: Moderation (Multi-Group CFA)

Moderation for Vertical Structure

	Constrained Model	Unconstrained Model	Chi-Square difference	Results in Moderation	Results on Hypothesis
Chi-Square	12.413	4.593	7.82	Supported	Supported
Df	9	8	1		
Chi-Sq Sig	.191	.800			
GFI	.959	.984			
AGFI	.905	.959			
CFI	.987	1.00			
RMSEA	.064	.000			
CMIN/df	1.379	.574			
Hypothesis: *Ha: Organizational Structure moderates the mediated relationship between SPMS design and Sustainable performance*					*Supported*
Evaluation Criteria: *The moderation test is significant if the difference in Chi-Square value between the constrained and unconstrained model is more than 3.84.*					

Moderation for Horizontal Structure

	Constrained Model	Unconstrained Model	Chi-Square difference	Results in Moderation	Results on Hypothesis
Chi-Square	37.721	15.474	22.247	Supported	Supported
df	9	8	1		
Chi-Sq Sig	.000	.051			
GFI	.826	.910			
AGFI	.595	.756			
CFI	.796	.947			
RMSEA	.243	.132			
CMIN/df	4.191	1.934			
Hypothesis: *Ha: Organizational Structure moderates the mediated relationship between SPMS design and Sustainable performance*					*Supported*
Evaluation Criteria: *The moderation test is significant if the difference in Chi-Square value between the constrained and unconstrained model is more than 3.84.*					

Appendix IX: Pilot Study Findings

Pilot study comprising of 15 firms was undertaken between 12th January 2018 and 21st April 2018. Pilot Sample of 10 to 30 considered adequate (Saunders, 2007; Hill, 1998; Isaac & Michael, 1995).

Reliability coefficient (Cronbach's alpha) of the research instrument:

Variable	Items	Alpha	Comments
Breadth	15	.806	Reliable
Depth	6	.712	Reliable
Strategic alignment	7	.628	Reliable
Flexibility	5	.825	Reliable
Customer Value-Service Quality & Flexibility	15	.806	Reliable

Acceptable range for construct reliability attained (> 0.6) Bäuml (2014), Field (2013) and Hair, et al. (2010).

Validity of the Contracts

Variable	Factors	CR	AVE	Factor 1 (Process-5)	Factor 2 (Actors-3)	Factor 3 (Customers-4)	Factor 4 (Situation-2)
Breadth (15 → 13)	Factor 1	0.850	0.534	$\sqrt{AVE}$ 1 =0.730			
	Factor 2	0.870	0.695	Corr.=.045	$\sqrt{AVE}$ 2 =0.833		
	Factor 3	0.793	0.501	Corr.=.107	Corr.=.393² (0.153)	$\sqrt{AVE}$ 3 =0.700	
	Factor 4	0.756	0.609	Corr.=.154	Corr.=.261	Corr.=.115	$\sqrt{AVE}$ 3 =0.780
				Factor 1 (Level of Disaggregation-3)	Factor 2 (Strategic Focus-3)		
Depth (6 → 6)	Factor 1	0.819	0.606	$\sqrt{AVE}$ 1 =0.779			
	Factor 2	0.791	0.565	Corr.=.387² (0.149)	$\sqrt{AVE}$ 2 =0.751		
				Factor 1 (Strategic Integration-3)	Factor 2 (Operational Integration-2)		
Strategic Alignment (7 → 5)	Factor 1	0.828	0.561	$\sqrt{AVE}$ 1 =0.749			
	Factor 2	0.834	0.718	Corr.=.356² (0.126)	$\sqrt{AVE}$ 2 =0.847		
				Factor 1 (Flexibility-5)			
Flexibility (5 → 5)	Factor 1	0.901	0.648	$\sqrt{AVE}$ 1 =0.805			
				Factor 1 (Reliability-4)	Factor 2 (Responsiveness-3)	Factor 3 (Availability-3)	Factor 4 (Flexibility-2)
Customer Value (13 → 12)	Factor 1	0.972	0.900	$\sqrt{AVE}$ 1 =0.948			
	Factor 2	0.852	0.658	Corr.=.124	$\sqrt{AVE}$ 2 =0.811		
	Factor 3	0.803	0.582	Corr.=.034	Corr.=.407² (0.165)	$\sqrt{AVE}$ 3 =0.763	
	Factor 4	0.867	0.766	Corr.=.133	Corr.=.196	Corr.=.155	$\sqrt{AVE}$ 3 =0.875

KMO values > 0.5 and significant Bartletts test of Sphericity ($p < 0.05$). Data adequacy for EFA, Field (2013)

Convergent Validity: Indicator loadings > 0.5; AVE values > 0.50, Hair, et al. (2010). Confirmed

Discriminant Validity: SQRT AVE > SQR the Highest correlation between constructs, Hair, et al. (2010). Confirmed

Validity (Pearson Correlation)

		Breadth	Depth	Alignment	Flexibility	PMS Design	Customer Value
Breadth	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	37					
Depth	Pearson Correlation	**.253****	1				
	Sig. (2-tailed)	.001					
	N	37	37				
Alignment	Pearson Correlation	**.498**	**.358****	1			
	Sig. (2-tailed)	.062	.001				
	N	37	37	37			
Flexibility	Pearson Correlation	**.357****	**.269**	**.260****	1		
	Sig. (2-tailed)	.000	.108	.000			
	N	37	37	37	37		
PMS Design	Pearson Correlation	**.752****	**.754****	**.876****	**.769****	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	37	37	37	37	37	
Customer Value	Pearson Correlation	**.688****	**.526****	**.575****	**.531****	**.715****	1
	Sig. (2-tailed)	.000	.001	.000	.001	.000	
	N	37	37	37	37	37	37
Firm Performance	Pearson Correlation	**.691****	**.549****	**.594****	**.569****	**.711****	**.904****
	Sig. (2-tailed)	.000	.004	.000	.000	.000	.000
	N	37	37	37	37	37	37

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations between IVs: Lower than alpha (<0.5). Correlation > 0.85 are a major problem of multi-collinearity and a sign of failure to meet discriminant validity (Field, 2013). Discriminant Validity Confirmed

Correlations between IVs and Composite/Mediator/DV: Obtained values > critical value of 0.3246 at 35 DF (0.05) and are highly significant (p<0.05). Convergent Validity Confirmed.

Appendix X: List of Sampled Mediums Sized Service Firms

S/No.	Name	Category
1.	Acacia Studios	Arts & Entertainment
2.	City Platinum	Arts & Entertainment
3.	City Space	Arts & Entertainment
4.	Cotes Du Rhone	Arts & Entertainment
5.	Maro Limited	Arts & Entertainment
6.	Mawezi Conference Centre	Arts & Entertainment
7.	Phat! Music & Entertainment Ltd	Arts & Entertainment
8.	Southcape Investment Limited	Arts & Entertainment
9.	Africa College Of Aviation & Management	Education
10.	Rocky Driving School	Education
11.	St Nicholas Training College	Education
12.	St. Juliet Preparatory School	Education
13.	Tulips Commercial Institute	Education
14.	Westford International Training Centre	Education
15.	Aar Credit Service Ltd	Finance & Insurance
16.	Acumen Fund Inc	Finance & Insurance
17.	Bcf Kenya Limited	Finance & Insurance
18.	Comet Credit	Finance & Insurance
19.	Complete Credit Ltd.	Finance & Insurance
20.	Faida Investment Bank Limited	Finance & Insurance
21.	Helios Investment Partners (Kenya) Limited	Finance & Insurance
22.	Interswitch East Africa [Kenya] Limited	Finance & Insurance
23.	Izwe Loans Kenya Ltd	Finance & Insurance
24.	Jabali Microserve Ltd	Finance & Insurance
25.	Jitegemee Trust Ltd	Finance & Insurance
26.	Junction Forex Bureau Limited	Finance & Insurance
27.	M'c Global Insurance Company	Finance & Insurance
28.	Meridian Acceptances Ltd	Finance & Insurance
29.	Middle Town Forex Bureau	Finance & Insurance
30.	Moriental Bank Ltd	Finance & Insurance
31.	Musoni Kenya Ltd	Finance & Insurance
32.	Mutana Holdings Ltd	Finance & Insurance
33.	Nima Investments Ltd	Finance & Insurance
34.	Oikocredit Services Kenya Limited	Finance & Insurance
35.	Okolea International Limited	Finance & Insurance
36.	Paddy Micro Investment Ltd	Finance & Insurance
37.	Prime Bank Limited	Finance & Insurance

S/No.	Name	Category
38.	Select Management Services Ltd	Finance & Insurance
39.	Sumac Microfinance Bank Ltd	Finance & Insurance
40.	Sunny Forex Bureau Ltd	Finance & Insurance
41.	The Monarch Insurance Co.	Finance & Insurance
42.	Visa Cemea Holdings Limited	Finance & Insurance
43.	Huruma Nursing Home	Heath
44.	Mariakani Cottage Hospital	Heath
45.	Marura Nursing Home	Heath
46.	Mid Hill Hospital	Heath
47.	Parkroad Nursing Home	Heath
48.	Radiant Pangani Hospital	Heath
49.	Access Africa Safaris	Hospitality
50.	Achanya Travel Agencies	Hospitality
51.	African Horizon	Hospitality
52.	African Quest Safaris	Hospitality
53.	Afro-Century Investments Ltd/ Restaurant	Hospitality
54.	Abyssinia Exotic Ethiopian Restaurant	Hospitality
55.	Ahoy Unique Bar And Restaurant	Hospitality
56.	Albertos Restaurant & Bar	Hospitality
57.	Amalayi Enterprise Ltd	Hospitality
58.	Ambassador Hotel	Hospitality
59.	Anchor Bistro Bar And Restaurant	Hospitality
60.	Anchor Hotel	Hospitality
61.	Arizon Fish And Chips	Hospitality
62.	Arizona Fish And Chips	Hospitality
63.	Acharya Travel Agencies	Hospitality
64.	Artcaffe Yaya	Hospitality
65.	Atmosphere Lounge	Hospitality
66.	Baraza Cafe	Hospitality
67.	Barwaka Lodge	Hospitality
68.	Bcd Travels	Hospitality
69.	Bedouin Lounge	Hospitality
70.	Beefton Green Ltd	Hospitality
71.	Beepee Investment Ltd	Hospitality
72.	Big 'D' Sport Club	Hospitality
73.	Black Oak	Hospitality
74.	Blue Sky Holding Limited	Hospitality

S/No.	Name	Category
75.	Akwaaba Restaurant	Hospitality
76.	Arbor Place Ltd	Hospitality
77.	Brooke Heaven Garden	Hospitality
78.	Bunson Travel	Hospitality
79.	Bush Park And Bistro	Hospitality
80.	Bushra City Hotel	Hospitality
81.	Berns Pub & Restaurant	Hospitality
82.	Charleston Travel Ltd	Hospitality
83.	Charleston Travels	Hospitality
84.	Check Point Lounge	Hospitality
85.	Chimes Launge	Hospitality
86.	Chinese Corner (Ngong) Ltd	Hospitality
87.	Chuan Wangfu Restaurant	Hospitality
88.	Club Panamas	Hospitality
89.	Club Sevens	Hospitality
90.	Club Truth Sports & Restaurant	Hospitality
91.	Covenant Tours Company	Hospitality
92.	Cyndir Bar & Restaurant	Hospitality
93.	D.C Hotel	Hospitality
94.	Discover Kenya Safaris	Hospitality
95.	Eastleigh Bahati Bar and Restaurant	Hospitality
96.	Edge Lounge Ltd	Hospitality
97.	Elite Travel Services Ltd	Hospitality
98.	Elysian Resort	Hospitality
99.	Emmacra Hotel	Hospitality
100.	Eureka Fish N Chips	Hospitality
101.	Evolution Place	Hospitality
102.	Excess International Ltd	Hospitality
103.	Extropica K. Ltd	Hospitality
104.	Fahari Palace Ltd	Hospitality
105.	Fancy Bar and Restaurant	Hospitality
106.	Fire Pit Kitchen and Bar Limited	Hospitality
107.	Flight Centres Services	Hospitality
108.	Fountain Rock and Restaurant	Hospitality
109.	Four Point by Sheraton Nairobi	Hospitality
110.	Phoenix Bar & Grill	Hospitality
111.	Fullrich Housing Limited	Hospitality

S/No.	Name	Category
112.	G.V. Pub	Hospitality
113.	Garden Inn Restaurant & Bar	Hospitality
114.	Gates Club	Hospitality
115.	Go Home Company	Hospitality
116.	Golf Mike Enterprises Ltd	Hospitality
117.	Grand Royal Hotel	Hospitality
118.	Green Rose	Hospitality
119.	Guavara Bar & Restaurant	Hospitality
120.	Gulf Palace Hotel Limited	Hospitality
121.	Han Di Yuani	Hospitality
122.	Heela Hotel Limited	Hospitality
123.	Hollywood Anex Bar & Grill	Hospitality
124.	Holyday Cars/Tours Ltd	Hospitality
125.	Hotel 2000	Hospitality
126.	Hotel Jaffers	Hospitality
127.	Hotel Metro	Hospitality
128.	Incentive Travel	Hospitality
129.	International Amani Lodge	Hospitality
130.	Itune Inspiration	Hospitality
131.	J. Garden City	Hospitality
132.	J.K. Safari Adventures	Hospitality
133.	Jacaranda Mini Pub	Hospitality
134.	Jack Tours & Travel	Hospitality
135.	Jack Tours And Travel	Hospitality
136.	Jade Lotus Chinese Restaurant Limited	Hospitality
137.	Jerry Westgate Ltd	Hospitality
138.	Joom Caterers	Hospitality
139.	Jupistan Pub	Hospitality
140.	Kamau Family Investment Ltd	Hospitality
141.	Karibu Hotel	Hospitality
142.	Karibu Travel and Tours	Hospitality
143.	Karikario Ltd	Hospitality
144.	Kasima Holdings Limited	Hospitality
145.	Kenia Tours and Safaris Ltd	Hospitality
146.	Keppy Bar and Restaurant	Hospitality
147.	Kiahiti New Butchery	Hospitality
148.	Kibo Slopes Safaris Ltd	Hospitality

S/No.	Name	Category
149.	Kilimanjaro Lodge Hotel	Hospitality
150.	Kingsbury Group Ltd T/A Misterwok	Hospitality
151.	Kirubros Plaza Hotel	Hospitality
152.	Le Sixty-Three Launge	Hospitality
153.	Let’s Go Travel	Hospitality
154.	Liberty Africa Safaris	Hospitality
155.	Locshed Bar and Restaurant	Hospitality
156.	Luca Safaris	Hospitality
157.	Luca Safaris Ltd	Hospitality
158.	Maje Investments Ltd T/A Coffee Casa	Hospitality
159.	Makuti Inn Bar and Restaurant	Hospitality
160.	Maryland Bar and Restaurant	Hospitality
161.	Masari Oasis Ltd	Hospitality
162.	Mash Park Hotel	Hospitality
163.	Membrey Grill	Hospitality
164.	Micato Safaris	Hospitality
165.	Midwest Lounge & Grill	Hospitality
166.	Mincema Tree Bar	Hospitality
167.	Mint Leaf Ltd	Hospitality
168.	Mirangi Tours Inn	Hospitality
169.	Mountain View Hostel	Hospitality
170.	Mukono Bar and Restaurant	Hospitality
171.	Muthaiga Travel Ltd	Hospitality
172.	Mwiki Pub Abd Restaurant	Hospitality
173.	New John's Pub	Hospitality
174.	New Smart Joint Pub	Hospitality
175.	Nigel Archer Safaris	Hospitality
176.	Nyumbani Restaurant	Hospitality
177.	Oasis Entertainment	Hospitality
178.	Okelea Enterprises	Hospitality
179.	Olive Gardens	Hospitality
180.	Olives Garden Hotel	Hospitality
181.	Om Nom Nom Ltd	Hospitality
182.	Origins Safaris	Hospitality
183.	Palm Travel Agencies	Hospitality
184.	Palm Travel Agency	Hospitality
185.	Papa Roti Restaurant	Hospitality

S/No.	Name	Category
186.	Parama Hotel	Hospitality
187.	Parkside Hotel	Hospitality
188.	Persia Resto and Pub	Hospitality
189.	Phoenix Pork City Bar and Restaurant	Hospitality
190.	Piccolina Club & Restaurant	Hospitality
191.	Pit Stop Grills	Hospitality
192.	Powerex Trading Company Limited T/A Clay Oven	Hospitality
193.	Prideinn Hotels & Investments Ltd	Hospitality
194.	Pyasa Pub	Hospitality
195.	Queens Park Villa	Hospitality
196.	Relax Pub	Hospitality
197.	Rhine Safaris	Hospitality
198.	Rickshow Travels (K) Limited	Hospitality
199.	Rivoli Restaurant	Hospitality
200.	Roddys Inn	Hospitality
201.	Saape Lounge	Hospitality
202.	Sagas Hotel	Hospitality
203.	Santena Club	Hospitality
204.	Seasons Restaurant and Hotels	Hospitality
205.	Seven Forty-Nine	Hospitality
206.	Side Work Bar & Restaurant	Hospitality
207.	Skyline Boarding & Lodging	Hospitality
208.	Sportspub	Hospitality
209.	Stella Mediterranean Restaurant	Hospitality
210.	Sun Developers T/A Golden Tulip	Hospitality
211.	Sunworld Safaris	Hospitality
212.	Super Premium Tours and Travel	Hospitality
213.	Taffy Restaurant	Hospitality
214.	Tandala Transport Limited	Hospitality
215.	Tarifa Gardens (Holdings) Ltd	Hospitality
216.	Tea Zone Hotel	Hospitality
217.	Tee Tee Restaurant	Hospitality
218.	Testy Food	Hospitality
219.	Texcal Four by Four Safaris	Hospitality
220.	The Base Club	Hospitality
221.	The Bull's Head Bar and Restaurant	Hospitality
222.	The Clarion Hotel Ltd	Hospitality

S/No.	Name	Category
223.	The Nairobi Bread Company	Hospitality
224.	The Safari Company Management	Hospitality
225.	Tin-Roof Productions Ltd	Hospitality
226.	Town Lodge	Hospitality
227.	Transworld Safaris	Hospitality
228.	Transworld Safaris (Kenya) Limited	Hospitality
229.	Transworld Safaris Kenya Ltd	Hospitality
230.	Travel and Style	Hospitality
231.	Travellers Pub	Hospitality
232.	Tropical Ice Ltd	Hospitality
233.	Vee One Lounge	Hospitality
234.	Vesba Eating House	Hospitality
235.	Virginiah Njeri Karanja T/A K.M.K Bar And Restaurant	Hospitality
236.	Visit Africa	Hospitality
237.	Wildlife Safaris Kenya	Hospitality
238.	Wote Group Safaris	Hospitality
239.	Xuguang Restaurant Co. Ltd	Hospitality
240.	Yaya Hotel	Hospitality
241.	Yunaitas Bar & Restaurant	Hospitality
242.	Feast Limited	Hospitality
243.	Software Technologies Ltd	Ict & Media
244.	Mojo Productions Ltd	Ict & Media
245.	Protel Studio	Ict & Media
246.	Specicom Technologies Ltd	Ict & Media
247.	Stangy Boyz Promotions Ltd	Ict & Media
248.	Tbn Family Media Ltd	Ict & Media
249.	Transcend Media Group	Ict & Media
250.	Well Told Story Ltd	Ict & Media
251.	Xtranet Communications Ltd	Ict & Media
252.	Aar Health Care Ltd	Professional Services
253.	Career Directions Ltd	Professional Services
254.	Corat Africa	Professional Services
255.	Fairacres Development Ltd	Professional Services
256.	General Cargo Services	Professional Services
257.	Graduate Africa Limited	Professional Services
258.	Tunkey Africa Ltd	Professional Services
259.	Usafi Solid Waste Management	Professional Services

S/No.	Name	Category
260.	Abb Ltd	Transport & Warehousing
261.	Afrisali Air Cargo	Transport & Warehousing
262.	Ags Worldwide Movers	Transport & Warehousing
263.	Akwaaba Ltd	Transport & Warehousing
264.	Alice Store	Transport & Warehousing
265.	Allied Industries Ltd	Transport & Warehousing
266.	Allied Wharfage Limited	Transport & Warehousing
267.	Al-Rajab Star Company Ltd	Transport & Warehousing
268.	Armstrong Movers and Storage Ltd	Transport & Warehousing
269.	Asachi Limited	Transport & Warehousing
270.	Beder Wholesalers	Transport & Warehousing
271.	Belbin Travel Ltd	Transport & Warehousing
272.	Blue Bird	Transport & Warehousing
273.	Bonje Distributors Ltd	Transport & Warehousing
274.	Bosky Industries Ltd	Transport & Warehousing
275.	Brits Freighters Ltd	Transport & Warehousing
276.	Buscar (Ea) Ltd	Transport & Warehousing
277.	Commercial Transporters	Transport & Warehousing
278.	Conventional Cargo Conveyer	Transport & Warehousing
279.	Convex Commercial Logistics Limited	Transport & Warehousing
280.	Cool Collections Ltd	Transport & Warehousing
281.	Crown Bus	Transport & Warehousing
282.	Damco Logistics Kenya Ltd	Transport & Warehousing
283.	Delta Handling Services	Transport & Warehousing
284.	Devshibhai And Sons Ltd	Transport & Warehousing
285.	Dhasni Enterprises	Transport & Warehousing
286.	Diamond Wholesalers	Transport & Warehousing
287.	Diamond Wholesalers Limited	Transport & Warehousing
288.	Digrio Traders	Transport & Warehousing
289.	Do International Kenya Limited	Transport & Warehousing
290.	Dodhia Packaging Kenya Ltd	Transport & Warehousing
291.	Easy Coach	Transport & Warehousing
292.	E-Cart Services Kenya Ltd	Transport & Warehousing
293.	E-Manage Africa Ltd	Transport & Warehousing
294.	Emco Holdings Limited	Transport & Warehousing
295.	Eminence International	Transport & Warehousing
296.	Emoss Global Company Ltd	Transport & Warehousing

S/No.	Name	Category
297.	Eye Link Cargo Limited	Transport & Warehousing
298.	Forties (40's)	Transport & Warehousing
299.	General Cargo Services Limited	Transport & Warehousing
300.	General Industries Ltd	Transport & Warehousing
301.	Golden Gate Cargo Services	Transport & Warehousing
302.	Grand Bus Services Limited	Transport & Warehousing
303.	Indian Transporters	Transport & Warehousing
304.	Jacaranda Logistics Ltd	Transport & Warehousing
305.	Kate Freight and Travels Ltd	Transport & Warehousing
306.	Bini Wholesalers Ltd	Transport & Warehousing
307.	Kings Metal Limited	Transport & Warehousing
308.	Likana Bus Services	Transport & Warehousing
309.	Logistics Lynk Limited	Transport & Warehousing
310.	Masaba Services Limited	Transport & Warehousing
311.	Mash East Africa	Transport & Warehousing
312.	Mesora Distributors	Transport & Warehousing
313.	Mobilax Cargo & Supplies Ltd	Transport & Warehousing
314.	Modern Coast	Transport & Warehousing
315.	Murunga Forward Limited	Transport & Warehousing
316.	Nurex Cargo & Cleaning	Transport & Warehousing
317.	Raha Express	Transport & Warehousing
318.	Rwakea	Transport & Warehousing
319.	South Lemon Ltd	Transport & Warehousing
320.	Sun World Safaris	Transport & Warehousing
321.	Uneek Freight Services	Transport & Warehousing
322.	Unisel Pharma Kenya Limited	Transport & Warehousing
323.	Ward General Trading	Transport & Warehousing