LEAN-AGILE PERFORMANCE MEASUREMENT FOR BUSINESS PROCESS OUTSOURCE SERVICE IN MALAYSIA

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ABSTRAK

Selama sedekad yang lalu, luar pesisir memainkan impak yang besar dalam proses pembuatan melalui pengurangan kos secara drastik. Idea menjalankan luar pesisir di negara-negara lain adalah untuk memanfaat dari sumber negara-negara tersebut telah membawa kepada anjakan global seterusnya, iaitu Penyumberan Luar. Oleh kerana wujudnya pelbagai teori yang mendasari konsep penyumberan luar, ia menjadi satu cabaran untuk membangunkan model pengukuran yang seragam. Oleh itu, tesis ini cuba menerokai pelbagai aspek berbeza teori penyumberan luar serta model, menyeragamkan teori-teori tersebut untuk dijadikan asas kepada kejayaan proses perniagaan penyumberan luar. Pemerhatian menunjukkan bahawa kekurangan model pengukuran yang seragam untuk proses perniagaan penyumberan luar membuktikan perlunya kajian yang lebih menyeluruh. Dalam kajian ini, penyelidik menilai dengan teliti teori penyumberan luar dari perspektif metodologi *lean* dan *agile*. Matlamat keseluruhan kajian ini adalah untuk membangunkan satu model pengukuran prestasi untuk proses perniagaan penyumberan luar. Berbeza dengan kajian penyumberan luar sebelum ini yang bertumpu kepada kelebihan daya saing kos, kajian terdahulu mengutarakan bahawa penyumberan luar yang hanya bertumpu kepada kelebihan daya saing kos akan menjejaskan prestasi perniagaan pada jangka masa yang panjang. Ini disokong oleh keputusan kajian yang menunjukkan bahawa terdapat korelasi tinggi antara kos dan kecepatan dan servis. Ini menunjukkan bahawa kesan dalaman kelajuan mempunyai banyak kaitan dengan pengurangan kos. Sebagai organisasi memproses / menyampaikan perkhidmatan kepada pelanggan mereka tepat pada masanya, semakin rendah kos overhead. Sebaliknya, kos mempunyai hubungan yang sangat rendah dengan inovasi. Ini menunjukkan bahawa keupayaan inovatif dihalang oleh organisasi yang memfokuskan semua sumber pada pengurangan kos. Bagi syarikat BPO, terdapat dua bidang di mana kelajuan mengurangkan kos (mengurangkan inventori dan mengurangkan risiko). Mempercepatkan kelajuan sebagai sebahagian daripada pengukuran prestasi operasi BPO akan membantu organisasi untuk menjangkakan kos pemulihan perkhidmatan, kos inventori penstoran semula dan menjangkakan kos risiko. Selain itu, hasil kajian ini juga menunjukkan bahawa pengukuran prestasi BPO yang memberi tumpuan kepada pengurangan kos akan meminimumkan pelaburan sumber daya dalam operasi perniagaan ini seterusnya akan membawa kepada kesulitan dalam menanggapi keperluan pelanggan yang berubah dari segi jumlah, penyampaian, dan produk baru. Implikasinya ialah strategi tumpuan kos jangka panjang memberi kesan negatif terhadap inovasi dan kelenturan. Ini penting kerana syarikat BPO bekerja dengan metrik yang telah ditetapkan yang telah mendorong kesedaran inovatif ke latar belakang. Tidak dinafikan, inovasi adalah usaha kreatif yang membayangkan bahawa kreativiti secara inheren tidak dapat diramalkan dan tidak dirancang. Oleh itu, adalah penting bagi syarikat untuk beralih dari pandangan tradisional untuk penyumberan luar semata-mata dengan kelebihan kos kepada pengurusan hubungan pelanggan yang kreatif dan kepuasan, untuk meningkatkan penglibatan pekerja sambil mengekalkan perkhidmatan yang tepat pada masanya. Walau bagaimanapun, kajian ini mempunyai had untuk mengurung kawasan perlindungan penilaian ke Malaysia. Penyelidik ingin melihat lanjutan lanjut ke negara-negara penyumberan luar yang terkenal seperti India, China dan secara besar-besaran ke benua lain.

ABSTRACT

Decades ago, offshoring plays a significant impact on manufacturing processes by drastically reducing the production cost. The idea to offshore to other countries in order to tap from their resources have led to the next global shift, Outsourcing. However, numerous underlying outsourcing theories makes it a challenge to have a unify measurement model. It was observed that there is lack of a unified performance measurement model for an outsource business processes and changes in business orientation to business as a service thus, necessitated a careful examination. Therefore, this thesis explored different facet of outsourcing theories and frameworks, consolidate these theories as the building blocks of achieving a successful business process outsourcing. Hence, in this study the researcher carefully reviewed outsourcing theories from lean and agile methodological perspectives. The overall goal of this study is to introduce a set of key quality factors that are intended to facilitate the effective performance measurement of business process outsourcing. To achieve this objective, a confirmatory factor analysis was used. Contrary to previous studies on outsourcing as a means to gain cost competitive advantage, the researcher posit that outsourcing solely on cost advantages will adversely affect innovative capability and flexibility on a long run. The researcher's argument is supported by the result of this study which showed that cost have high correlation with speed and service level. This indicates that the internal effects of speed have much to do with cost reduction. As organizations process / deliver services to their customer on time, the lower the overhead cost. On the other hand, cost have a very low relationship with innovation. This indicates that innovative capabilities are hindered by organizations focusing all resources on cost minimization. For BPO companies there are two areas where speed reduces cost (reducing inventories and reducing risks). Inculcating speed as part of performance measurement of a BPO operation will help organizations to anticipate the cost of service recovery, the cost of restocking inventory and anticipate cost of risk. Furthermore, by extension the result of this study also indicate that BPO performance measurement focusing on cost reduction will minimize the investment of resources in business operations this, in turn, will lead to difficulties in responding to changing customer's requirements in terms of volume, delivery, and new product. The implication is that on the long run cost focus strategy have a negative effect on innovation and flexibility. This is pertinent because BPO companies work with a predefined metrics which has pushed innovative consciousness to the background. Undoubtedly, innovation is a creative endeavor which implies that creativity is inherently unpredictable and unplanned. Moving forward, it is imperative for companies to shift from traditional view of outsourcing solely on cost advantage to creative customer relationship management and satisfaction, to improve employee engagement while maintaining timely service. This study however, have its limit in confining the coverage area of assessment to Malaysia. The researcher would like to see a further extension to other notable outsourcing countries like India, China and at large to other continent.

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α	Cronbach Alpha
x^2	Chi-Square

LIST OF ABBREVIATIONS

BPO	Business Process Outsourcing
FDI	Foreign Direct Investment
EMGS	Education Malaysia Global Services
MSC	Multi-media Super Corridor
MDeC	Multimedia Development Corporation
IVR	Interactive voice response
SCC	Service call center
NVA	Non-value-added
CE	Customer Expectation

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter takes a deeper look at the current trend in the international market with emphases on outsourcing of operation and service to an offshore location. The researcher explored the background and development of outsourcing service related function of an organization.

1.2 Research Background

In recent years outsourcing business process operation have created significant opportunities for developing economies to strengthen their national competitiveness and attractiveness for a foreign investor from developed economies, however, this often ignites considerable controversy and debates. These controversies are mostly linked with the quality of service performed by the outsource locations, employee selection and management culture. In many instances, companies in western countries have had to use offshore locations for their business process operation because of a shortage of skilled labor or low labor cost. One of the most attractive feature of Malaysia as an offshore destination for the business process operation is the lower labor cost if compared to western economies with for example the labor cost for technical support executive between US and Malaysia at about 8:1 (Kearney A&T., 2016).

Countries like India, China and Malaysia have been the top destinations for outsourcing business operation. For example, Malaysia's economy enjoys a boom in its foreign direct investment (FDI) over the last decade due to her enabling environment for western economies to outsource their back office operation to Malaysia. According to the Multimedia Development Corporation Malaysia (MDeC), there has also been an

upsurge growth in numbers of companies established every year in Malaysia Business Process Outsource industry (BPO). Through government support and private investment, there are 299 multinational companies and 80 local companies operating a business process outsource centers in Malaysia. MSC Malaysia (2015) showed that there were 113,000 jobs created within the Outsourcing Sector. It is no surprise, therefore, that A.T. Kearney Global Management Consultant (2016) index showed Malaysia as the world's third most attractive location for business process outsource.

In general, the definition of business process outsource encompasses all operational activities in or outside the parent company's environment. McIvor (2006) defines Business Process Outsourcing (BPO) as the management of one or more specific business processes or function (such as procurement, finance, and accounting, human resources, asset or property management) by a third party, together with the information technology that supports the process or function. Its aim is to serve as a means to revitalize business processes and methodologies in order to reduce cost and to transform organizational culture to a global standard.

In the advent of globalization era, many companies choose to outsource their business operation because of the need to diversify and free up resource. In the words of Jan Servaes (2008), "global economy now swung in a constantly changing world, partly driven by human's behaviour in the constant acquisition of material things and the desire for continuous scientific and technological advancements". While the need for change in itself may not be considered bad, the rapidity with which it has taken place in recent times has been a major cause for concern for those businesses struggling to keep pace with. Quick product life cycle, changing customer tastes, and intense global competition is just some examples. Further, Ramanathan (2014) posit that supply chain management has taken on additional strategic tasks that extend beyond its previous operational scope of activity. In order to respond to these changes and remain competitive, supply chain managers need to be able to identify and understand new sustainability issues in their company and business environment. This calls, especially in respect of global and fragmented supply chains, not only for highly efficient supply chain operations but also for networking skills that must continuously adapt to demands in order to create a sustainable process that translates to a competitive advantage in a turbulent market.

Later in the wake of the global financial crises in 2007-2008, customer perceived value for product and services has increasingly being influenced by it's psychological and social advantages (Wagner & Kemmerling 2014). While explaining the relationship of customer's need to business process outsource Wagner & Kemmerling (2014) pointed that customer's changing attitudes are pushing businesses to rethink their strategies, and those that are able to stand up to the challenge are taking advantage of it. For instance, customers are not only demanding products and services to be delivered at almost immediate availability, but their needs are constantly changing as well. Hence, the market is dominated by uncertainty and unpredictability. The result? Abdulrahman, Subramanian, Liu, & Shu (2014) noted that the production, logistics, and supply chain processes are more, therefore many companies are responding to the changes by considering diversification through outsourcing of their non-core competence service. This

1.3 Problem Statement

Diversification is one common avenue to which a company pursuing growth strategy employs in order to free up resources. This process involves series of upskills in performance level, change in management style and re-allocation of resources. By measuring performance of service quality with the use of balance score card, many organisations have chosen to outsource their operations to countries such as China, India, and Malaysia (Mukherjee, Gaur, & Datta, 2013). At the inception of outsourcing boom, Amit R., (1988) noted that the problems included the inherent risk of losing control (Amit, 1988), and because the services are performed outside the parent company the difficulty to accurately measure the performance of the business process is still very elusive (Purdy & Wei, 2014). Furthermore, as noted by Kyratzoglou (2013) with the increase in growths of outsourcing and offshoring, supply chains become geographically dispersed and exposed to various types of risks. One of such risk is the fear of performance failure (Franca, Jones, Richards, & Carlson, 2010). According to Franca et al., (2010) when performing activities internally, companies believed that they can exercise greater control over an internal function with less chance of failure. Additionally, Yusuf & Adeleye (2002) research showed that it is difficult to implement changes to processes delivery when the service(s) are outsource to another company.

Like every other industry, the BPO service industry is characterized by intangibility, simultaneity, heterogeneity, and perishability. This is because of the unpredictability of the market in which the BPO's operate as such, it is crystal clear that they face greater variability than other types of businesses (Khang, Yu, & Lee, 2013; Maull, Geraldi, & Johnston, 2012). The question is: How well could the BPO companies align themselves to the variability in order to improve performance? How can performance indicators from extant outsourcing theories be used to explain lean and agile performance process in a BPO environment? This yet to be given adequate attention in past literature (Lu, Meng, & Goh, 2014; Neu, 2005). In order to improve business operation performance, BPO service companies need to understand the variability they face and then match their strategies to that variability.

This research work is structured and designed with the intent of creating a performance model for BPO industry and in particular the Malaysian BPO industry. Having a performance measurement model will help to further strengthen the strategic positioning of Malaysia as a top destination for BPO and to secure the employment of 113, 000 employees currently working in BPO sector (MSC Malaysia, 2015b).

For instance, in order for Malaysia to maintain and retain her position as the best location for BPO, there is need to rise above cost advantage to performance base driven, striving for zero defect in its operation and become more responsive to customer's need. BPO industries in Malaysia need to improve the process of creating customer value and create a self-organized team which require less management that are suitable for a wide range of services to improve innovative capability.

1.4 Research Question

This research work focuses on finding answers to the following questions

(i) To what extent do existing outsourcing theories measure performance?

(ii) What is the most important factor to be considered for measuring BPO performance?

1.5 Research Objectives

The purpose of conducting this research is to develop a sustainable performance model by incorporating market-based and environmental practices which will translate to speed, flexibility, quality, and modularity. The researcher has identified 2 main objectives namely;

(i) To examine underlying outsourcing theories.

(ii) To introduce a set of key quality factors that are intended to facilitate the effective performance measurement of business process outsourcing.

1.6 Significance of Research

With the aforementioned objectives in mind, this research work is carried out in order to add to existing body of knowledge and to help policy maker in the industry. Thus, this part is sub-divided into two.

1.6.1 Significance of Research to the Policy Maker / Industry

The degree at which business process outsourcing companies suffer from the economic, social and environmental effect of global financial crises is enormous thus pushing investment and innovation to the background (van Bommel, 2011). When a company has the ability to optimize their business processes, they can save money at thesame time be more efficient and effective in their operational activities. A proven production practice that meets these three successes is Lean manufacturing. This research will investigate in which way the successes of Lean manufacturing can also be used to improve companies in business process outsource industry especially with regard to Malaysia economy. The result of this research will contribute to the achievement of the Malaysian government 10th economy plan by strengthening one of its national key economy earnings – The Global Business Service Sector.

Another way to optimize business processes is to make processes responsive and manageable with the support of modern technology. Agile supports fast changes in business operations and reduces the time to market (Gligor, Esmark, & Holcomb, 2015). Agile pays more attention to the way business processes are supported, where Lean pays more attention to value creation and waste elimination. This research is about

to bring to the fore the business benefits that will result from a combination of lean and agile performance measurement to BPO industry.

1.6.2 Significance of Research to Academic Literature

Existing research (Morais et al., 2014; Vaxevanou & Konstantopoulos, 2015; Jharkharia & Shankar, 2007; Folinas, 2012; Robertson & Jones, 1999) review and evaluate the early stages of outsourcing decision-making process, the outsourcing models, work culture and turnover in BPO business environment. These past research were confined to pragmatic review without much to the conceptual model for performance measurement. Hence, this study creates first of its kind – development of a performance model through empirical findings and validation of the factors that should be included in performance measurement.

This research will fill the in quality target and result. This gap is evidently shown between the outlined Quality Objective and the observed current performance through the Quality Questions. Several Quality Metrics can be associated for the same Quality Factor as there might be several ways for evaluating it.

1.7 Operational Definition of Terms

(i) Business Process Outsourcing: This is the delegation of one or more IT-intensive business processes to an external provider that, in turn, owns, administrates and manages the selected process based on defined and measurable performance metrics. In this research work, the term BPO will be used to refer to companies at offshore locations (S. Liu & Deng, 2015).

(ii) Sustainable BPO : Environmental impact on delivery good service based on measurable metric (S. Liu & Deng, 2015).

(iii) Education Malaysia Global Service : A typical example of modern BPO by Malaysia Ministry of Education charged with the primary objective of promoting Malaysia as a global education destination for providing high-quality study programs of international standards.

(iv) Multi-media Super Corridor: This is Malaysia's most exciting initiative for the global information and communication technology (ICT) industry.

(v) The Multimedia Development Corporation (MDeC - previously known as MDC) is a government-owned institution responsible for the management of

the Multimedia Super Corridor (MSC Malaysia) in Malaysia as a technology industry and commerce zone.

(vi) Service Level Agreement (SLA): Deokar & Sen (2014) defines it as a document that cross check the interplay of various process elements (e.g., activities, resources, events) with key performance indicators (KPIs).

(vii) Lean: Developing a value stream to eliminate all types of waste (non-value added activities), including time, and to ensure a level schedule (Gligor et al., 2014).

(viii) Agility is using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile marketplace (Kisperska-Moron & de Haan, 2011).

1.8 Scope of the Study

The purpose of the study is to develop a performance measurement model for BPO industry in Malaysia. The rigor and complexity of the key aspect of this study moved the research to transverse over different organizational theories that have shaped outsourcing decision over the last decades. Observing the global economy trend which entails customer re-orientation, geographical changes in value creation and business vertical integration (automation) moved the researcher to postulate that these changes are as a result of an increased demand for performance measurable model. Thus a hypothesis about this phenomenon was coined out. To explain this phenomenon, the researcher carefully selected companies in the business outsourcing service in Malaysia and thereafter numeric data were collected. This research work has 8 units of analysis for the two unobserved variables. Each unit is measured with at least 6 items for proper dimension. The first set of the questionnaire were sent to project managers and quality analyst working in the BPO industry. However, for robustness, the second phase of the questionnaire was distributed to 250 companies but only 200 were complete and usable for this research. The detailed demographics of each respondent are presented in Chapter 4.

The collected data were sanitized, scrutinized and synthesize through series of statistical analysis. Among other, this piece of research work has its novelty in that it brought about significant changes to performance measurement of BPO industry because the measuring instrument includes both metric and non-metric measurement.

1.9 Summary of the Chapter

This chapter had shed light on why companies in western countries outsource their business operation to offshore locations and the inherent risk associated with outsourcing. The researcher thereafter identifies the pertinent questions which this research will answer. Therefore, the rest of this research is divided into 4 chapters. Chapter 2 of this research discusses the empirical findings. The researcher therein explain why lean and agile have been so successful in different industries, excavate key variables that measure performance through outsourcing theories and then relate how this could be used to enhance performance in BPO industry. Chapter 3 explains the methodological steps in validating the empirical findings through factor analysis. Chapter 4 reports the data analyses from field survey from Jan 2016 – May 2016. In chapter 5, the researcher discusses the result and its implication. The researcher infer with a statement on the overall objectives of this study and proposes further areas in which this research could be extended.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter reviews current models and scholarly articles on BPO and its impact on global economies. The researcher explores theories on outsourcing and performance measurement model on agile and lean manufacturing which forms the latent factor of this research. The gaps in the reviewed research work help to structure the items in each of the constructs before conducting statistical analyses.

2.2 Quality in Business Process Industry

Quality has been the topic of research in several disciplines such as manufacturing, software engineering, information management, and services management (Loucopoulos & Heidari, 2012). As a result a variety of standards and frameworks have been introduced to define, manage, assure, control and improve the quality of processes (Meidan, García-García, Escalona, & Ramos, 2017). Different levels of granularity can be considered for realizing and measuring quality in an organization involving many organizational layers from the very general, i.e. organization-wide quality to increasing detail through organizational units, business processes and elements of business processes. Evaluating quality at different levels of granularity can involve a wide range of issues, from measuring the achievement of an organization vision at the highest level to measuring quality of individual concepts of a business process. This section examines quality requirements of business processes from two perspectives, managerial and technical perspectives. The researcher then gives a critical enumeration of quality measurement in BPO.

2.2.1 Technical Approach to Quality in Business Process Industry

Technical method of measuring quality performance is the appropriate use of tools and techniques. Capturing quality dimensions of a business process with the aim of building a holistic framework are considered in Glykas (2011). With regards to the four essential process competencies in operation management: (a) process cost, (b) process flow time, (c) process flexibility and (d) process quality, Glykas (2011) identify four generic quality categories for business process quality. These categories are: "function", "input–output", "non-human resource" and "human resource". Based on related works from software engineering, they identify thirteen quality dimensions for functions, product quality and quality-of-services for web services, quality dimensions of non-human resource category and finally they identify quality dimensions for input–output and human resource.

Technical approaches from closely interrelated fields such as requirement engineering, software engineering, workflow analysis, industrial engineering, system dynamics and discrete event simulation are investigated in the work of Knuplesch, Reichert, & Kumar (2017). Knuplesch, Reichert, & Kumar (2017) focuses on software systems and adequacy of business processes in supporting these systems rather than measuring quality of business process itself. These works focuses on the understanding of quality issues based on goal analysis, and is heavily relying on interviews (arguably a subjective activity).

A quality model for workflow Quality of Service (QoS) is developed by Madeira et al., (2012). They develop methods to compute and predict QoS. The model consists of "task time", "task cost", "task fidelity", and "task reliability" referred to quality dimensions of a workflow. These quality dimensions can be adapted for activity as one of the business process concepts.

Ageron et al., (2012) enunciate business process management's monitoring and performance management phase. They introduce a framework for measuring and aligning processes and goals. In their work, user requirements notation (URN) is given a further detailed analyses with key performance indicators (KPI) and some other aspects that are claimed to measure business processes and align business processes with goals. The idea is on whole business processes and not on their concepts. On the concepts of business process, a methodology and a toolset for BPM and analysis were

introduced in Glykas (2011) for defining and measuring key performance indicators (KPI) in qualitative as well as quantitative approach. The toolset is able to define different scenarios, assess the performance and reports the deviation from desired situation. The approach however, does not offer a set of generic KPIs and metrics but demonstrates its applicability in just one domain –banking services.

In a recent discovery, Heinrich et al., (2016) use quality characteristics and attributes of processes by adopting the ISO/IEC 9126 standard for software quality (ISO/IEC, 2004) and use these to enhance business process model. They argue that there is a close relationship between software and business processes. In this work, activities, actors, information, physical objects and required resources are considered for evaluation. The work is extended in Heinrich et al., (2017) by introducing graphical techniques associated with the quality factors for the concepts of a business process model such as activity, process owner, cost and resource. Their research focus is on business process model models with the aim being that of visualization rather than evaluation.

Heidari et al, (2011) introduce a framework for evaluation of business process quality. This framework includes a business process meta-model, a quality-based business process meta-model, enrichment of business process meta-models, selection/execution of quality services, quality requirements, definition of quality factors and metrics and definition of quality evaluation services and quality repository as its elements. The need to address non-functional characteristics is business critical for certain tasks. Therefore, there is a need for a more complete representation of the elements/considerations for evaluating business processes in the form of a quality evaluation framework. Their work extended the requirements engineering framework with the aim of allowing active stakeholder participation (Bresciani & Donzelli, 2010). With the usage of an abstraction to encourage participation of stakeholders, the focus is on examining the impact of requirements subjectively on business processes and organizational model beforehand and not during the execution of business processes.

Whereas Heidari et al. (2011) introduced a business process meta-model as an integration of concept of seven business process model framework. The meta-model is enriched with quality related information (i.e. quality factors). The result presented as a quality-oriented meta-model encompassing quality factors of throughput, cycle time,

timeliness, cost, resource efficiency, cost efficiency, maturity, recoverability, security and availability.

Moving further, the use of domain knowledge for improving semantic quality of business process model with the aid of meta-modelling is expanded in the work of (Si-Said Cherfi, Ayad, Comyn-Wattiau, Si-Said Cherfi, & Ayad, 2013). Their work considers ontologies in a number of domains. They developed business process model examples in these domains and tried to align them. In general, the approach focuses on some specific domain and model creation in these domains. This approach complement Heidari et al. (2011) ontology for quality requirement specification and measurement which is just a conceptual framework.

Recently Lohrmann & Reichert (2012) discusses the factors required for obtaining a basic understanding on business process quality. These factors include existing business process definitions in the literature and notion on quality and approaches toward that. Based on these observations, they offer a definition of business process quality as consuming minimum economic value to achieve a given business objective. They also offer a formal definition on business objective achievement. Few years later Lohrmann & Reichert (2016) provide a definition for business process quality and introduce business process quality model. However, there are no details provided on how measurement may be conducted.

2.2.2 Managerial Approach to Quality in Business Process Industry

This section focuses on some of the most relevant approaches proposed and practiced within the area of business and management. Although this research work is much more aligned to the technical approach to quality in business process industry, this short discussion is included for completeness purposes.

One common managerial approach to quality is Total Quality Management (TQM). In TQM, the mutual cooperation of everyone in an organization and associated business processes is encouraged to produce value-for-money products and services which meet and hopefully, exceed the needs and expectations of customers (Giaccio, Canfora, & Del Signore, 2013). In TQM, general guidelines and recommendations for quality are proposed at the organizational level. The ISO 9000 series of standards focus on quality management systems (Sroufe & Curkovic, 2008). Like TQM, these quality

standards act as general guidelines to be applicable to all types of organization regardless of the types of product and service they offer, organization size, turnover, location, type of industry, etc. These guidelines are general and specifically focused on the organizational level.

However, as showed in original studies, performance can be measured at different levels of business, business units and business processes itself (Evans & Lindsay, 2014). Business performance measurement systems try to realize performance factors at the organizational level or the organizational unit (Low & Chen, 2013). The existing research on business process performance measurements systems such as Heckl, Moormann, & Rosemann (2010) and Van Looy & Shafagatova (2016) try to provide guidelines for developing business process performance measurement systems. Quality tools, techniques and tools for process improvements such as Kaizen, Poka-Yoke and process simulation are provided to assist stakeholders in improving their processes and presenting output of quality measurements without realizing quality dimensions, factors and metrics (Berger, 2013; García-Alcaraz, Oropesa-Vento, & Maldonado-Macías, 2017).

2.3.3 Critical Enumeration of Quality Measurement in Business Process Industry

The plethora of conceptual modelling approaches has led many authors to consider the value of comparing and evaluating such approaches. Different evaluation techniques have been proposed from the development of framework (N. V. K. Jasti & Kodali, 2015), to the use of structuralism (R. B. Kline, 2010), the exploitation of paradigmatic discussion (Moyano-Fuentes & Sacristán-Díaz, 2012) and the use of ontological, qualitative and quantitative analysis (Coltman, Devinney, Midgley, & Venaik, 2008). Previous understudied research work do not distinctively express quality performance in technical term but rather on general area of conceptual modelling. Variations is seen in methodology, in the specification approaches used, in the way that quality is measured and the target applications of these quality approaches.

However, this research work approach of evaluating quality performance is based on an introduction of quality and improvement methodologies rooted in lean and agile. This approach focuses on measuring quality performance based on criteria that addresses both theory and usability. The following section will discuss the development of lean and agile with regards to quality measurement as used in literature.

2.3 Development of Lean Manufacturing

The concept of lean became popular through Womack et al., (1990) book 'The Machine That Changed the World'. Womack et al. highlighted that the overral objective of lean is to eliminate "waste". In the lean context, waste is defined as "anything other than the minimum amount of equipment, materials, parts, space and time which are absolutely essential to add value to the product or service". Seven forms of waste were identified namely: transport, inventory, motion, waiting, overprocessing, overproduction, and defects. All of these wastes have a direct impact on performance, quality and costs, and these are all non–value–adding operations for which customers do not want to pay.

With the rise of environmental and social consciousness, the definition of lean has been expanded to incorporate concepts of economic, social, and environmental sustainability (Ansah & Sorooshian, 2017). Lean Manufacturing (LM) is widely seen as one of the most commonly use production systems. Evidences in literature indicates a positive association between implementing LM and improving operational performance (Marodin & Saurin, 2013). In a general approach, LM practices and principles aim at reducing waste and variability in the processes, adding more value to customers and providing operational performance improvement (Ansah & Sorooshian, 2017). Nevertheless, most successful companies are the ones that are expanding and linking their internal improvement processes with external customers and suppliers (Frohlich & Westbrook, 2001). Thus, supplier and customer integration emerges as an important element to improve competitiveness beyond the organizational boundaries (Tortorella, Miorando, & Tlapa, 2017). This concept is perfectly aligned with BPO definitions, especially with the advent of offshoring service operation overseas. In this sense, the focus of BPO practices must shift from functional and independent to general and integrative initiatives which calls for investment in innovation and flexibility.

Lean applications are based on the maximum involvement of people by means of tools and techniques such as Six Sigma, 5S, Single–Minute–Exchange–of–Die (SMED), Total Productive Maintenance (TPM), Kanban. Chiarini & Vagnoni (2015) discussed the practical applications of these tools to service industry especially the product development companies. Although, many companies developing large software-intensive systems have implemented lean manufacturing, but to make full use

of this competitive weapon – squeezing out more waste of lean manufacturing processes – lean needs also to be extended to the product development processes (Chiarini & Vagnoni, 2017). To increase the effectiveness in the product development processes, several companies have started to implement some inherent principles and practices of LM. Continuous improvement (Kaizen), Kanban, Concurrent Engineering, Customers and Suppliers' involvement, Visual Management, group work and cross-functional teams emerge as some of the practices used to achieve effective quality performance measurement (García-Alcaraz et al., 2017).

Practically, professionals named Black and Green Belts carry out problem–solving projects using quality and statistical tools derived from the Total Quality Management (TQM) world. Typically, after having stated the kind of problem in the Define phase, particular tools are employed for measuring the current state of the problem, analyzing and finding what the root–causes are. Then the causes are removed, improving the process with specific action plans. Finally in the control phase the achieved savings and the sigma level of the Critical–To–Quality (CTQ) characteristics are measured and certified for the senior manager who is sponsoring the project.

Kuei & Madu (2010) states that "the domain of the traditional Six Sigma approach should be expanded and extended to include the environmental safety, integrity and social responsibility that are mutually dependent and are critical to achieving six sigma". In response to Kuei and Madu (2010), Jasti & Kodali (2015) have proposed a procedure to integrate environmental considerations into the Six Sigma technique as a way to increase the eco-efficiency level of the firms. In general, the studies conducted in the area of Six Sigma and sustainability seem to suggest that the adoption of Six Sigma has a beneficial effect on the sustainability performance.

To achieve sustainable performance, Naga Vamsi Krishna Jasti & Kodali (2015) proposes seven pillar framework. They empirically validated four bundles of inter-related and internally consistent lean six sigma practices, these were: customer-supplier relationship management (CSRM), logistics management (LOM), elimination of waste and continuous improvement (EWCI), and top management commitment (TMC). Whereas previous research has argued that a truly lean system may obtain benefits from the mutual application of several complementary practices, whose adoption intensities

may vary according to the existing problems within the organization (Kisperska-Moron & de Haan, 2011).

This implies that in order to adopt lean processes in service, every process should be evaluated against the customer relevance and either considered a waste or a value-add. In a service organisation this often entails that the whole meeting-approach is turned upside down (and slashed), a strong push towards automation, eradicating multi-tasking, etc. The time expenditure is geared towards the things of which the organisation knows customers will need in the future and aim for a delivery as-fast-as-possible – a flexible approach.

2.4 Development of Agile

Agile was launched in 2001 and comprises a set of principles put forth in the infamous Agile Manifesto and stems from the software industry as a reaction against the heavyweight methodologies that were the norm and out of frustration because so many projects were never really delivered on time and within budget. To avoid, or counter, large overhead and enabling being highly responsive to change, software development organizations have turned to agile software development over the past years, yielding some good results (Schmidt, 2016).

Nerur & Moe (2012) explained that Agile starts with a set of values which are at its core: Individuals and interactions over processes and tools: i.e. self-organisation and motivation through co-location, working in pairs; working software over comprehensive documentation: focus on the added value (working software) over wasting time on writing lengthy manuals; customer collaboration over contract negotiation: not all the software requirements can be clear at the start of a project; responding to change over following a plan: quick responses to change and a continuous development. The typical work method is called the Scrum which is a flexible, "holistic" product development strategy where a development team works as a unit to reach a common goal. Therefore a continuous involvement of the customers is necessary throughout the project.

Cawley, Wang, & Richardson (2010) carry out an investigation on the extent of how lean and agile software development methods have been adopted in regulated safety critical systems development. Most of the studies identified were based on agile

practices (XP and Scrum) combined with traditional plan-driven development methods, but they found no studies where lean and agile had been used in business process service industry. However, they believe that lean and agile has a potential of improving the development of safety-critical systems, and thus, point out the need of further investigations in this area.

Wang, Conboy, & Cawley (2012) reviewed 30 experience reports published in agile conferences in which lean principles and practices had been applied to agile software development. They divided the reports into six categories of lean applications in agile software development. One of those concerned applications of lean approaches for improving the interaction with other units that had already implemented lean principles and practices established in the overall process while keeping the agile software development processes internally. Furthermore, they found that several recently published papers reporting on mature agile organizations show that these organizations have a tendency to move from time-boxed agile processes to more flow-based lean processes. The growing interest in lean-agile is also reflected by the fact that special issue on lean has recently been published in emerging themes in agile software development (Dingsøyr & Lassenius, 2016).

The empirical development of this research work anchored on existing theorectical framework used in lean and agile environment. A sizeable proportion of the reviews had been in production and manufacturing. Dora & Gellynck (2015) explored perfomance factors and their impacts on lean manufacturing in small- and medium-sized enterprises (SMEs) operating in food-processing industries. In order to get an in-depth insight into the real situation on the work floor, their study adopted a multiple-case-study research approach. While Jasti & Kodali (2015) identified 39 frameworks using validity and reliability analysis for a lean production system.

Other scholar such as Serrano, Hegge, Sato, Richmond, & Stahnke (2010)Burström et al. (2012), Rewa, Mottes, & Bagshaw (2015), Andersen, Røvik, & Ingebrigtsen (2014), Haleem, Salem, Fatahallah, & Abdelfattah (2015), Mason, Nicolay, & Darzi (2015) and D'Andreamatteo, Ianni, Lega, & Sargiacomo (2015) have all used lean quality improvement method in health and clinical discoveries. However,Arezes, Dinis-Carvalho, & Alves (2015) cautioned that negative impacts or disadvantages of lean production system (LPS) implementations may result from the

misunderstanding of the lean principles. Possibly, they also happen due to partial lean implementations (when only one or two tools were implemented) that may be effective in a specific work context but not suitable for all possible situations as the principles of LPS should not lead, by definition, to any of the reported drawbacks in terms of workplace ergonomics

This is important because it is usually common for most companies to use metrics as a key determinant of efficiency. In their study Kupiainen, Mäntylä, & Itkonen (2015) seeks to increase knowledge on the reasons for using metrics. Their results indicate that the reasons for using metrics are focused on the following areas: sprint planning, progress tracking, and software quality measurement, fixing software process problems, and motivating people. Earlier, Martínez-Jurado & Moyano-Fuentes (2013) have discussed the contradictions and inconsistencies found in the literature regarding organization's adoption of lean and agile in measuring performance efficiency. Their views are further reinforced by (Bhamu & Singh Sangwan, 2014; Vamsi Krishna Jasti & Kodali, 2014; Johansson, Abrahamsson, & Johansson, 2013; Powell, 2013)

Further, supply chain agility has primarily been explored in the literature through a focus on manufacturing flexibility, supply chain speed, or lean manufacturing (Gligor & Holcomb, 2012). However, the level of agility in a supply chain can be determined by the efficiency and effectiveness of the collective efforts taking into consideration those factors outside the production and manufacturing working environment (Hasle, Bojesen, Langaa Jensen, & Bramming, 2012). To buttress this, Moyano-Fuentes & Sacristán-Díaz (2012) created an extended model for lean manufacturing to include work organization and impact of geographical context on lean production and manufacturing. The result is that as the organization grows, the need for diversification also grows in tandem.

As a prototype for this research, manufacturing organizations have pursued performance improvements by adhering to lean and agile manufacturing paradigms. Ben Naylor et al., (1999) relate both paradigms to supply chain strategies as leanness means developing a value stream to eliminate all types of waste (non-value added activities), including time, and to ensure a level schedule and agility means using market knowledge and a virtual corporation to exploit profitable opportunities in a

volatile marketplace. In a recentdevelopment, however, Gligor et al. (2014) mention that lean and agile are adopted as a top world-class manufacturing system. This is because of lean response to competitive pressures with limited resources. On the other hand, agile manufacturing works with complexity brought by constant change. In their research both Štefanić, Tošanović, & Čala (2010) and Kisperska-Moron & de Haan (2011) pointed out that lean is a collection of operational techniques focused on productive use (no waste) of resources. Whereas, agile is an overall strategy that focuses on thriving in an unpredictable market environment (responsiveness).

Therefore, the growing unpredictable demand by the customers necessitates the combination and development of performance model in the business process outsourcing industry.

2.5 Business Process Outsourcing

Business Process Outsourcing (BPO) is an organization mechanism in which business processes are designated to a service provider who in turn possesses, manages, and administrates selected IT-intensive processes based on predefined and measurable metrics (S. Liu & Deng, 2015). These selected processes handled by BPO companies comprises of procurement, finance and accounting, training, human resource, and customer relationship management. Malik, A. , Sinha, A. and Blumenfeld (2012) identified two types of organizations in BPO process which are client and service provider. Clients should articulate their requirements to allow the service provider to appropriately manage the outsourced business processes (K. Han, Kauffman, Mann, & Nault, 2009). Clients should also acquire, integrate, and use knowledge generated by the service provider to ensure that the BPO is well executed and delivered with high performance (Narayanan, Jayaraman, Luo, & Swaminathan, 2011).

It is alarming that many research focuses on information technology outsourcing (ITO) and thus mismatch it for BPO. In their comprehensive review of the ITO and BPO body of research, Lacity, Solomon, Yan, & Willcocks (2015) identify promising BPO research opportunities based on gaps that exist in the ITO and BPO literatures. They suggest that new studies should reflect the shift in BPO relationships and outcomes from a short-term to a long-term orientation. In particular, BPO clients increasingly expect service providers to not only offer short-term benefits (e. g., lower

costs, valuable service on back office processes) but also to support their long-term goals (e.g., technological innovations and process maturity). Lacity et al., (2015) also note that recent BPO projects (e.g., business analytics) require more knowledge-intensive activities compared with BPO activities (e.g., human resources, marketing, and supply chain functions) that have been examined in previous studies. These knowledge-process outsourcing projects support the client's long-term and strategic goals that are related to innovation and competitive actions (Rai, Keil, Hornyak, & Wüllenweber, 2012). For example, BPO typically entails strategic processes (e.g., customer analytics) to facilitate innovation and business transformation, which processes require ongoing knowledge contribution from both the client (e.g., BPO requirements) and the services provider (e.g., business domain, knowledge of process improvement). Achieving this type of knowledge-process outsourcing typically requires the client and the provider to commit to a long-term relationship.

From a theoretical perspective, Lacity et al., (2010) suggest that transaction cost economics logic that seems to highlight a short-term orientation of outsourcing offers diminishing marginal insights to outsourcing problems. This conclusion is derived from evidence that the "findings have been repeatedly examined and found to have no significant effects on BPO outcome because there are simply no patterns to find." (p. 241). Current BPO practices among businesses and a critical review of outsourcing research seems to suggest that researchers must draw on a long-term orientation to theorize BPO outsourcing relationships and partnerships as a basis from which to understand outsourcing outcomes.

The unique characteristics of BPO relationships suggest that outsourcing outcomes (e.g., satisfaction, project performance) and their antecedents in prior ITO research may not fully capture the spirit of BPO performance (Lacity et al., 2010). This hold true because ITO focuses on the short-term benefits that may accrue from IT services, and thus many ITO studies mainly zoom in on theoretical arguments from transaction cost economics and the resource-based view to examine antecedents of commitment from a cost reduction and IT-related resource capability perspectives, respectively. In contrast, BPO emphasizes the importance of strategic management and relationship-specific resources to commitment (Lacity et al., 2015).

In the context of this research, the researcher looks at "offshore outsourcing" – the practice of hiring an external organization to perform some business functions in a country other than the one where the products or services are actually developed or manufactured. It can be contrasted with offshoring, in which a company moves entirely to another country, or where functions are performed in a foreign country by a foreign subsidiary. L.-C. Wu & Wu (2015) reviewed BPO operational environment in past two decades and summed it up that the initial purpose of outsourcing has shifted from basic activities to more complex and strategically activities. In early 2000, BPO was all about cost efficiency, which allowed a certain level of flexibility at the time (Y. Liu & Aron, 2015). However, due to technological advancement and changes in the industry specifically the move to more service-based rather than product-based contracts, companies who choose to outsource their back-office are now increasingly looking for time flexibility and direct quality control (Wu & Barnes, 2011).

2.6 Outsourcing Theories

It is unarguable that outsourcing business operations have a very complex structure which necessitates series of operational and managerial procedure. To help BPO companies, numbers of theories have been used to explain the phenomenon of outsourcing business operation. Hence, the researcher explored these theories as they relate to the development of our latent construct.

2.6.1 Transaction Cost Economics Theory – Cost

In this study, cost performance function is examined from the perspective of transaction cost economy theory (TCE). TCE is the most widely used outsourcing theory which provided the best way to measure the cost of decision, cost of organizational changes, the cost of location selection and cost of supplier selection. However, TCE as a measure of cost has often been criticized as to its non-practicability for long term planning (Angappa Gunasekaran, Irani, Choy, Filippi, & Papadopoulos, 2014). The unsuitability for long-term planning to this type of cost approach arises from the cost of relocating services and the information technology to support such services overseas. Hence, on a long-term, multinational companies need to incorporate the cost function of outsourcing their business by measuring the return on investment after outsourcing, financial support from the government (if any), a comparative analysis of competitors, and the value of goods/services sold.

The importance of making provision for positive transaction costs becomes evident upon pushing the logic of zero transaction costs to completion. The origin of this theory stem from Coase (1960) when he reformulated torts (or, more generally, externalities) as a contracting problem in his famous article on "The Problem of Social Cost". Plainly, provision for positive transaction costs would thereafter have to be made if externalities, and the study of complex contracting more generally, were to be accurately described and assessed. Years later, Arrow (1969, p 12) contribution in his famous research work "The Organization of Economic Activity: Issues Pertinent to the Choice of Market versus Non-market Allocation" likewise opined for positive transaction costs, both in general and with respect to vertical integration. Upon recognizing that vertical integration entails the "replacement of the costs of buying and selling on the market by the costs of intra-firm transfers, the existence of vertical integration may suggest that *the costs of operating competitive markets are not zero, as is usually assumed by theoretical analysis*" (Arrow 1969, p. 48; emphasis added).

But while it is easy to agree that zero transaction cost is a fiction, how does the analysis of positive transaction costs get implemented? Coase (1937) concluded that "every firm is confronted with a vast buzzing, blooming profusion of transaction cost possibilities few of which are easy to quantify". Transaction cost economics assumptions could be described in Robert Solow's three precepts: keep it simple; get it right; make it plausible (2001, p. 111). Keeping it simple is accomplished by stripping away inessentials, thereby to focus on first order effects — the main case, as it were — after which measure, analyse and control can be introduced. Getting it right entails working out the logic. Making it plausible in itself means to preserve contact with the phenomena.

Solow observes with reference to the simplicity precept that "the very complexity of real life is what makes simple models so necessary" (2001, p. 111). Keeping it simple requires the organizations to prioritize. In same line of thought, Friedman believed that central features and key regularities are uncovered by the application of a focused lens (Friedman, 1997, p. 196). Hence, getting it right entails "translating economic concepts into accurate mathematics (or diagrams, or words) and making sure that further logical operations are correctly performed and verified" (2001,

p. 112); and plausible simple models of complex phenomena are expected to “make sense for ‘reasonable’ or ‘plausible’ values of the important parameters” (2001, p. 112).

It thus suffice to conclude that the main purpose of including TCE in outsourcing performance measurement framework is the theory’s adaptation to changing cost. Interestingly, both the economist Friedrich Hayek and the organization theorist Chester Barnard were in agreement on this point, albeit with differences. The adaptations to which Hayek (1945, pp. 526-527) refers are autonomous adaptations accomplished in the market, whereas the adaptations of concern to Barnard (1968, p. 9) are consciously coordinated adaptations accomplished through the use of management within the firm.

2.6.2 Core Competency Theory - Service Level and Speed

Prahalad & Hamel (1990) popularized the theory by using the concept of core competences. While competences express what a firm is able to do well, core competencies encompass what the firm is able to do better than others(Lawson & Lorenz, 1999, p. 306). It is imperative to state that core competency unit of measurement is time. The ability to adapt core competencies quickly to changing opportunities at a given point in time is what ultimately drives competitiveness. *In the words of Prahalad and Hamel, "in the long run, competitiveness derives from an ability to build, at lower cost and more speedily than competitors, the core competencies that spawn unanticipated products"*(1990, p. 81). Monteverde & Teecerefer to this ability as the dynamic capabilities of a firm (1982, p. 516). In practice the concept of core competences can be operationalized in three criteria. First, core competences enable organizations to deliver product- or service characteristics that are relevant in the eyes of the customers. They make a significant difference between the organization and its competitors. Second, competitive advantage must be sustainable over time to protect from imitation by competitors. Third, the resources involved must be usable for more purposes than just a limited number of products or services; it must be a competitive advantage for the entire organization to meet its customers’ needs.

The main focus of this theory is to determine the success of an agreement between the supplier and the vendor. Noteworthy, a teeming number of scholars alludes that the performance metrics of a BPO service company are embedded in a contractual text known as the service-level agreement (SLA) which are although voluminous

(Deokar & Sen, 2014) but of extremely important for business continuity (Tucker, 2015). Deokar & Sen (2014) defines service level agreement "as a document that cross check the interplay of various process elements (e.g., activities, resources, events) with key performance indicators (KPIs)". However, measuring key performance indicator could be challenging with the advent of green technology (Jose Arturo Garza-Reyes, Gabriela Winck Jacques, Ming K. Lim, Vikas Kumar, 2014) and in other cases with the dispersed geographical location of business process outsource (Y. Liu & Aron, 2015).

This difficulty gives rise to an important question on waste management in the BPO. Core competency perspective help companies to leverage their employees' responsibilities with the clients' requirements as documented in the SLA. However, as often the case in the business environment, caution has to be taken because an unguided implementation of terms in the SLA will result to mechanical approach without much modularity thereby affecting processing time (Deokar & Sen, 2014; Tucker, 2015).

It has become conventional wisdom that core activities should stay in house, while non-core activities should be outsourced (Kakabadse & Kakabadse, 2000). Kakabadse & Kakabadse(2001) show that 36% to 46% of private and public service enterprises in the USA and Europe outsource facilitating, noncore activities in order to focus more on their core competences. A related top ten reason is the aim to achieve best practices (58% – 68% of the respondents depending on industry sector). Hussey & Jenster (2003)Hussey and Jenster (2003) cite the same decision drivers, both on the buyer's as on the supplier's side. The result is that outsourcing enhances organization's response time by leveraging on the core competencies which are otherwise wouldn't have been possible should the service are performed internally.

2.6.3 Resource Base Theory - Flexibility and Innovation

In the 1990s the resource based view emerged as outsourcing strategic management plan. The resource based view originated in the work of Thompson (1967) but did not become prominent until the mid-1980. Barney & Hesterly (1996) showed that resources and capabilities can differ significantly among organizations and that these differences remain stable. In another word, a balance and strategic application of available resources and capabilities will create a competitive advantage for the enterprise.

The resource-based view theorist ideally believed that firms compete on the basis of unique resources that are valuable, rare, difficult to imitate and non-substitutable by other resources (Barney, 1991). These "unique" resources include physical assets, knowledge, technology, organizational capabilities, and operation procedures. Grant (1991) classifies a firm's critical resources as intangible, and personnel-based resources. For a firms' strategy to be an edge over competitor, every unit of the unique resources must be assembled together in combination or co-presence (RUSSO & FOUTS, 1997). This motion is supported by Grant (1991) "that a hierarchy of organizational capabilities should be integrated into functional capabilities such as marketing, manufacturing, R&D, and IT capabilities". Each functional capability can be upward integrated to form cross-functional capabilities such as new product development capabilities, customer relationship maintenance capabilities, and corporate venturing capabilities. Following this reasoning, in this study, the researcher extend the argument further that a firm's competitive advantages can be derived from inter-firm capabilities in the industry network context. Examples of inter-firm capabilities are the capabilities to manage its supply chains efficiently, to cooperate with its channel and to collaborate with competitors for the next generation technology research. In this sense, business process outsourcing can be seen as an avenue to integrate outsourcer and IT vender's resources for competitive advantages. Extending the traditional notion of resource-based view of the firm, inter-firm partnership can be seen as a governance structure to exchange, assemble, integrate, and deploy valued resources that is originally isolated by organizational boundaries. In addition, Inter-firm partnership can create joint capabilities that goes beyond resources exchange through market transactions.

"To annex a firm's competitive advantage it is imperative to examine the internal organization of a company and its resources. In other words, the central premise of resource base view addresses the fundamental question of why firms are different and how firms achieve and sustain competitive advantage by deploying their resources" (Konstantinos, Kostopoulos, Spanos, & Prastacos, 2002). The foremost idea of viewing a firm competitive advantage from interdependency of resources can be traced back to Wernerfelt (1984) who argues "that the evaluation of companies in terms of their disposable resources could lead to different insights from traditional perspectives that a firm's strength is one that align with its external environment rather

than internal resources". Decades later in his widely known framework, Barney (1991) underscores the key resources needed for the generation of a sustainable competitive advantage (Figure 2.1). Barney's model assumes "that firms within an industry may be heterogeneous with respect to strategic resources they control and that these resources may not be perfectly mobile across firms and thus heterogeneity can be long lasting. Barney's further stressed that firm's flexibility drivers are seen from how it deals with threats from external environmental and how these threats can be transformed into opportunity by innovative capabilities.

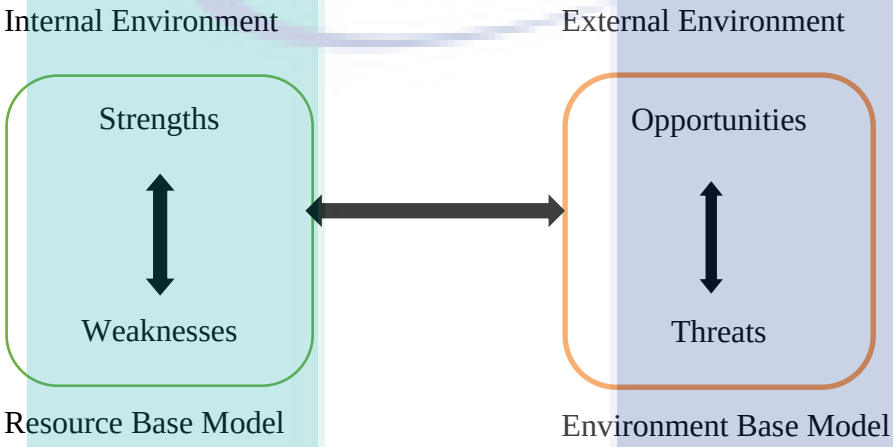

Figure 2.1 Resource Base View of Outsourcing Performance
Adapted from Barney (1991)

Barney's assumption further enumerated that strength and weaknesses of a firm to a large extent depends on whether resources are valuable, rare among a firm's current and potential competitors, inimitable, and non-substitutable (Figure 2.1). If resources have these characteristics they can be seen as strategic assets. Subsequently, this notion has been adopted by many researchers (Baier, Rammer, & Schubert, 2015a; Bhatti, Larimo, & Coudounaris, 2015; Mukherjee et al., 2013; Nowacki & Bachnik, 2015) and expanded to include the resource durability, non-tradability, and innovative capabilities

Dierickx & Cool enunciated in their research that the availability of financial resources in the form of external or internal funds has a major influence on firm's performance measurement since it expands or limits firm level of innovation. Furthermore, carrying out innovative activities in many cases requires a minimum prior investment in sophisticated technical equipment since this will raise the possibility of producing innovative output of increased value for the firm in form of unique products,

and for its customers through increased quality (Figure 2.2). Thus, technical resources present a crucial resource (Kostopoulos et al, 2002). *Kostopoulos et al opined that intangible resources in the form of highly qualified human capital and the firm's stock of knowledge (explicit or tacit) are necessary strategic resources in order to enjoy success through innovation.*

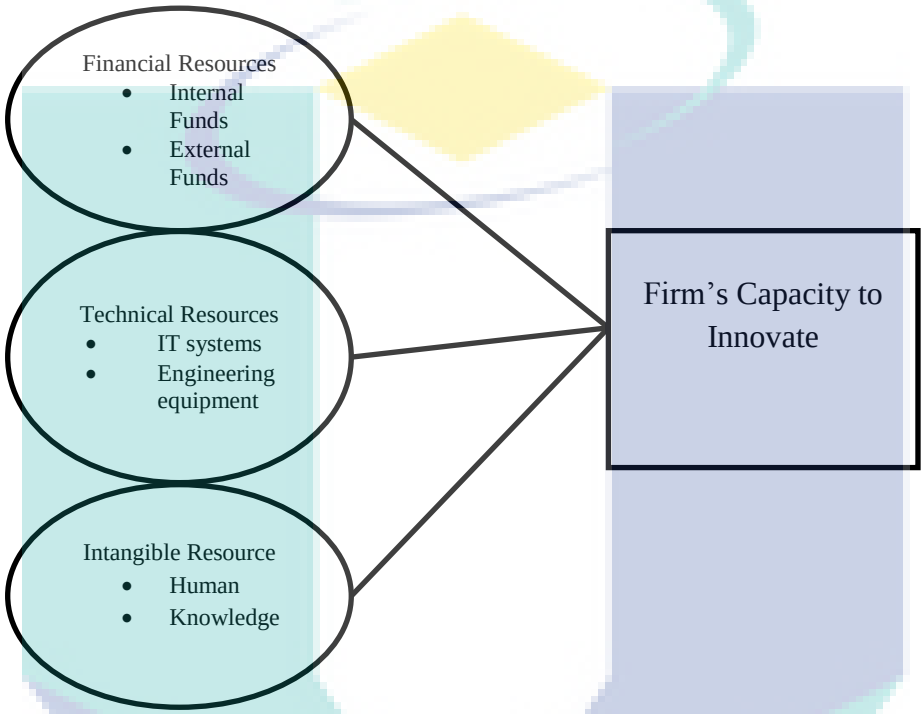

Figure 2.2 Firms Innovative Capability as Influenced by Flexibility
Source: Adapted from Kostopoulos et al, (2002)

Over the years, it has been observed that "the resource-based perspective has proven useful for analysing cost impacts on firms' innovative capabilities" (Grimpe & Kaiser, 2010; Nieto & Rodríguez, 2011). However, the diversity of opinion on the proper use of resource base theory as a basis for outsourcing is a serious concern for researchers. Baier, Rammer, & Schubert, (2015) reviewed different facet of the effect of innovative capabilities on organization structure and sum it up this way: "One strand of literature emphasizes the importance of offshoring for tapping into new knowledge sources (Bardhan, Jaffee, Bardhan, & Jaffee, 2005; Barthélemy & Quélin, 2006; Maskell, Pedersen, Petersen, & Dick-Nielsen, 2007) and benefiting from complementarities between different knowledge sources (Cassiman & Veugelers,

2002). However, it has also been argued that outsourcing knowledge activities weaken internal resources and reduce their productivity due to a loss in absorptive capacities (Grimpe & Kaiser, 2010; Helfat & Raubitschek, 2000) which leads to a downgrading of onshore capabilities". Therefore, when considering outsourcing of business operation, organizations should create a flexible working environment in order to improve employee participation and innovativeness.

2.6.4 Knowledge base theory - Process Integration

At the outset of globalization era, companies outsourcing their business operation did so in order to tap the offshore resources while little attention is given to knowledge management. Admittedly, Grant (1996) showed that the resource-based perspective does not go far enough. Specifically, knowledge base theory emphasizes that knowledge should be treated as a generic resource, rather than having special characteristics. This shortcoming led to the development of the knowledge base theory. The knowledge base theory distinguishes between different types of knowledge-based capabilities and provides an understanding of how individuals cooperate to produce goods or to provide services. Sakas, Vlachos, & Nasiopoulos (2014) categorize this to two namely: knowledge generation and knowledge application. The application of knowledge-based view to outsourcing is to demonstrate that knowledge-sharing is positively related to performance in volume and services.

Different dimension of research domains has also suggested that a set of individual, organizational, economic, social, and strategic factors is associated with BPO commitment (Ageron et al., 2012). Accordingly, outsourcing research has examined the influence of a number of antecedents on such commitment, including strategic management variables (e.g., absorptive capacity, capability), economic variables (e.g., relationship-specific investments or resources), and relational governance variables (e.g., behaviour control, interaction and alignment of actions between the client and the service provider) (Lacity et al., 2015). Although prior research has investigated these factors separately, this research work took an integrated view and empirically evaluate these variables together. In particular, this study focuses on how relational value generated from the client and service provider relationship influences performance. The novelty of our theoretical approach is that we comprehensively assess the antecedents of performance measurement to offer an open

understanding of how relationship-specific capabilities influence the performance that underlies the success of BPO outcomes.

Thus, BPO requires a knowledge supply chain to be established between the client and the service provider (e.g., knowledge sharing and knowledge integration between them and the client's domain knowledge). These knowledge-related capabilities help to improve BPO performance and increase commitment.

To buttress this Chen, McQueen, & Sun (2013) examines the effect of effective knowledge transfer and knowledge building on overall performance of an outsource company with a result similar to Han, Lee, & Seo, (2008); Law & Ngai, (2008) research which shows that employees are better equipped to perform their daily duties when processes are well communicated to them, when they are part of the process planning and when their contributions are included.

2.6.5 Complexity theory - Market Sensitivity

Complexity theory found its root in the uncertainty and non-linearity of the market. "While the study of complex systems stems from mathematics and natural sciences, it is today a cross-disciplinary field gaining momentum in social sciences as well" (Bastardas i Boada, 2015). The problem as pointed out by Bastardas i Boada (2015) is "not that we need better simplistic, linear models, but that we should be able to create theory based on market complexity – customer's changing demand". Changing customer's attitude toward a brand, mounting pressure to keep up with technology advancement and new customer specification or wants are pushing business to constantly evolve and in all ramification makes complexity notoriously difficult to define. Johnson & Johnson (2010, p. 3) defines complexity science to be "the study of the phenomena that emerge from a collection of interacting objects". While this is a good definition, it does not exactly help us understand the feedback component. Hence, this research work extend previous work by adding changing customers attitude as feedback to performance measurement of an outsource company.

The feedbacks from the business environment are an important feature to measure performance effectiveness. Baier et al., (2015) observed that "moving beyond the view that costs and benefits of offshoring primarily emerge through impacts on internal (knowledge-related) resources, it is a challenge for organizational features such

as changes in managerial complexity and an organization's ability to effectively adapt to changes in the environment" (Han et al., 2008; Law & Ngai, 2008). Johnson & Johnson opined that "Interaction or interdependence of different parts is one of the most important features of all complex system studies. Interaction obviously relates to feedback loops. Feedback means that there are mechanisms which feed information back into the system, and feedback comes in two flavours, positive (amplifying) and negative (dampening)" (2010, p. 4). Hence, market sensitivity effect on cost and service level should be of concern to the BPO organization when measuring performance effectiveness.

2.6.6 Contingency Theory – Quality

Contingency theory generally presents a body of work which argues that "not all organizations are the same, and therefore they should be structured and managed differently" (Wadongo & Abdel-Kader, 2014). Equally, contingency approach, as a concept in management suggests that there is "no one universally applicable set of management styles to manage organizations". This is based on the fact that organizations are individually different, face different situations, and require different ways of management. In project management, contingency theory presents "a body of literature that argues that not all projects are the same, and therefore they should not all be structured and managed the same way" (Howell et al., 2010 p.256).

Contingency theory is used by the researcher in this study to underscore the development of methodologies in the business process outsource industry. Sauser, Reilly, & Shenhar (2009, p. 665), described a contingency approach to the extent of "fit or misfit" of purpose. Wysocki (2009) further explained that "in analysing empirical data, the detection of fit/misfit may help better explain project success/failure".

Sauser et al., observed that the popularity of contingency theory among scholars has had an increased momentum in the different field of study such as innovation, organizational theory, management, computer science, product management and engineering (2009, p.667). Furthermore, Howell et al. (2010, p.256) eloquently discuss how contingency theory has over the years evolved such that "fit for use" as in the case of quality is now extended to refer to innovation (Shenhar & Dvir, 2007) and organizational response time (van Donk & Molloy, 2008). Thus, the effectiveness of an organization's performance is related to its 'fit' to its environment (Baier, Rammer, &

Schubert, 2015; Wadongo & Abdel-Kader, 2014). This line of thought is consistent with this research aim which proposes that organizational effectiveness is dependent upon the organization's ability to adapt to the environment, and that there "is a need for congruence between the environment and structure". In a similar vein, "it has often been suggested that more turbulent environments should be addressed by organic structures because coping with uncertainty is a core problem for complex organizations" (Wadongo & Abdel-Kader, 2014).

According to the advocates of contingency theory, firm's performance is affected by three variables: environment, strategy, and organizational design (Boyd, Takacs Haynes, Hitt, Bergh, & Ketchen, 2011; Mintzberg, 1979; Neu, 2005; Wadongo & Abdel-Kader, 2014). To achieve good performance, organizations need to react appropriately to these variables. More than ever, it has become evident that the service sector is characterized by intangibility and variability due to customer's demanding nature. This implies that there must be a responsive strategy to improve performance in the same direction that the development of lean production has brought about pressing need for operational excellence.

Vinekar, Slinkman, & Nerur (2006) used a contingency approach and found that the adoption of agile or traditional approach is contingent upon the product or organizational factors like size, criticality, dynamism, staff competence and culture. Similarly, Sauser et al. (2009) adopted the contingency approach to investigate the extent of fit (success) or misfit (failure) between project characteristics and project management approach. Through their comparative analysis of NASA's Mars Climate Orbiter (project) loss, their findings revealed that "contingency theory provided the new insights as to why one of the biggest American NASA's projects had failed". Whereas Howell et al., (2010) developed a detailed contingency framework in uncertainty consequence approach. Their framework drawn from 88 project contingency theory classify contingency into 3, "plan-driven", "problem structuring", and "emergent" (Figure 2.3).

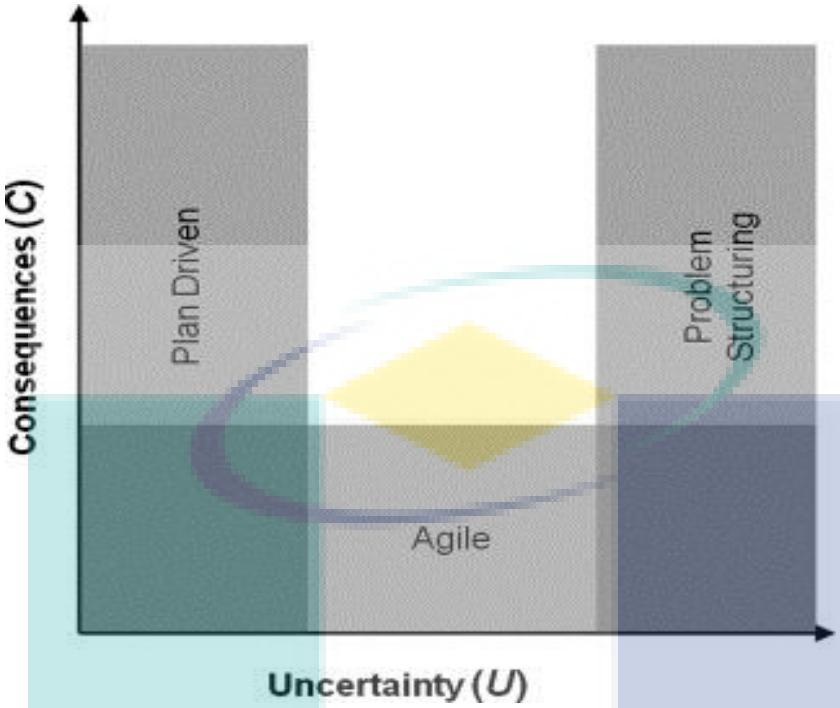

Figure 2.3 A Contigency Outsourcing Framework
Adapted from Howell et al., (2010)

The plan driven contingency approach is used to identifying project goals and the necessary steps to achieve them. These goals are prioritizes and organized in an optimal sequence given resource and other constraints to form a project plan. The quality "fit for use" is administer by the management with the aim of controlling variations and where such variations cannot be control the management shall initiate plan review. The problem structuring contingency approach presumes that the dominant issue to be dealt with in the project is the understanding of its objectives and environment. To curb the effect on organization performance, a modelling of cause-effect relationships approach is usually used. Emergent or agile contingency on the other hand is a presumption that the project goals will be ill-defined at the initial stages. Hence, a highly iterative process involving partial implementation of the goals, followed by redefinition of those goals based on feedback from this implementation is used to improve performance.

In summary, contingency theory suggests that there is no optimal strategy for all organizations and posits that the most desirable choice of strategy variables varies according to contextual factors, sometimes termed as contingency factors. Although, contingency theory was not a major focus in the past, it is more relevant today for two

reasons. A growing diversity of outsource projects is now reflected in a growing diversity of ways to manage them. Thus, contingency theory seems to be more appropriate for studying business process outsourcing success due to their temporary nature and the existence of a large number of success factors that may provide an optimal performance.

2.7 Relationship of Outsourcing Theories to Lean and Agile

Lean manufacturing has been defined as a collection of operational techniques that focuses on productive use (no waste) of resources, to reduce internal and external variability which are produced along the supply chain (Štefanić, Tošanović, & Čala, 2010). Shah & Ward (2007) defined lean manufacturing "as an integrated socio-technical system whose main objective is to eliminate waste by concurrently reducing or minimizing supplier, customer, and internal variability". Extending this definition, Lakhe (2008), identified 4 variabilities which are evident in the service industry. These are variability caused by the (i) operator; (ii) variability caused by machine; (iii) variability caused by machine set-up and (iv) variability caused by the management. Agile, on the other hand, is an overall strategy that focuses on thriving in an unpredictable market environment (responsiveness). Going by these views, the researcher infers that both lean and agile are closely related and could be useful in examining the performance of a BPO company.

2.8 Gaps in Lean Measurement Criteria in Relation to Outsourcing Theories

In the last 20 years, lean production and agile manufacturing have been used to enhance the efficiency and effectiveness of manufacturing firms (Lee, 2015). In practice, these are largely achieved through the use of metrics in the lean business environment. Prompted by the abuses of metrics to measure effectiveness and efficiency Schonberger (2011) examines five companies and demonstrate how inventory should be equivocal as an upper-management-level marker of lean effectiveness. Their studies also show that lean's dominant purpose should be seen as cycle-time (wait-time) reduction, which is counted in units of inventory and is visually prominent and easily measured at low (efficiency) levels and high (effectiveness) levels in the hierarchy.

On the contrary, Zammori, Braglia, & Frosolini (2011) believed that the dominant purpose of lean effectiveness should be to reduce variation. They used an approximated procedure based on the application of the Central Limit Theorem to prove that stochastic overall equipment effectiveness (OEE) can help in battling variation and thus improve effectiveness. In other research such as Celo, Nebus, & Kim Wang (2015) and Khadem (2010) they used simulation to measure lean effectiveness and efficiency. Lean metrics are embedded into simulation model so that the simulator is able to provide automatically lean metrics for the systems without any extra effort. Thereafter, the embedded lean simulation is used to investigate the significance of various improvement opportunities.

To solidify the significance of effectiveness and efficiency measurement on improvement opportunities various researchers such as (Aguado, Alvarez, & Domingo, 2013; Aziz & Hafez, 2013; Dave, Kubler, Främling, & Koskela, 2015; Freire & Alarcón, 2002; Holtskog, 2013; Mullaney, 2010) have identified 4 stages on lean performance measurement in construction industry with a result of up to 58% decrease of waiting time in process and an expansion of utilization in cycle times.

Due to the dispersed geographical location of business process outsource, the reviewed literature indicate that there are enormous gap in performance metric measure in process integration due to inadequate individual involvement. Lack of flexibility on operational procedures, market sensitivity in business process outsource environment and lack of individual improvement initiatives have all dealt a death blow on effective performance evaluation in BPO business environment.

2.9 Gaps in Agile Measurement Criteria in Relation to Outsourcing Theories

Over the years, a number of scholars have reviewed Agility with respect to companies in the software industry. Frequently in literature, agile has been defined with respect to the agile enterprise without much to the BPO industries (Gehani 1995; Browne et al. 2010; Dwayne Whitten et al. 2012; Gligor et al., 2014; Gligor et al., 2015; Yusuf, Musa, et al., 2014). Notably among the literature is Breu et al. (2002) analyses on products, workforce, capabilities with respect to the agile industries which underscore the important of using market driven approach rather than product driven approach emphasize earlier by Gehani (1995). In same direction, Degroote & Marx

(2013) research result demonstrate the positive impact of supply chain agility on the firm's sales, market share, profitability, speed to market, and more importantly customer satisfaction.

The result of Degroote and Marx's research brought to attention the core attributes of agility which describesexceptional internal capabilities to meet the rapidly changing needs of the marketplace with speed and flexibility. In the words of Zäschke, Leone, Gmünder, & Norrie (2015), agile methods promote iterative development with short cycles, where user feedback from the previous iteration is used to refactor and improve the current version. A system that shifts quickly (with speed and high responsiveness) among product models or between product lines is said to be flexible (Gligor et al., 2015). Flexibility for BPO industries thus implies responding to customer demand almost in real time and yet maintains 100% quality.

2.10 Literature Categorization

Over the years, optimal performance has been given utmost priority for manufacturing and production industry by employing lean and agile methods because performance is increasingly viewed as a means of achieving a competitive advantage. The role that a resilient and well – performing measure can play in operational planning and control, as well as company's strategic goal, is not to be overemphasized. Similarly, BPO industry has to give priority to their performance improvement. The traditional way of measuring performance based on cost alone have giving way to more innovative approach incorporating noncost performance measures like quality, flexibility, speed, and the need for customer satisfaction as seen on theories of outsourcing.

The review has also shown that company's effectiveness is the extent to which customers' requirement is met while efficiency measures how economically the firm's resources are utilized to produce a given level of customer satisfaction. Aligning this to BPO industries, performance measurement is, therefore, the process of quantifying the effectiveness and efficiency of action performed by individuals toward the customer. Organizations that wishes to perform well must be effective and efficient in managing its functions toward the end users. It can thus be said that efficiency in the economical utilization of a firm's resources to achieve effectiveness.

Additionally, the reviewed studies have all produced mixed results. This failure to produce consistent results could be due to; (1) some studies such as (Gutierrez Gutierrez, Barrales-Molina, & Tamayo-Torres, 2016) used insufficient construct to analyse relationships between determinants of firm's performance; (2) the instrument and method used for measuring performance vary among the studies. For example, Maasouman (2014) operationalize performance only at operating levels, while Fullerton & Wempe (2009) measure only financial performance. Furthermore, when studied variables are lesser than 100 (Gutierrez Gutierrez et al., 2016), analyses of correlation may not predict which level of construct have a direct/indirect effect on performance.

An exhaustive literature review was undertaken to understand the theoretical and application of agile methodology in different sectors/industries as previously used by scholars. However, the researcher did not find any single study which has studied all construct in the agile business process outsourcing industry. Most of the studies were either a review paper or conceptual article. Thus, most of the frameworks were developed using pragmatic philosophy confined to software development (Afzal et al., 2014; Jedlitschka et al., 2014; Kupiainen et al., 2015; Mäntylä & Itkonen, 2013, 2014). To address our second objectives, the researcher took a clue from those studies and introduce a set of key quality factors that are intended to facilitate the effective performance measurement of business process outsourcing. Each of these key factors are denoted with the domain in Table 2.1.

Table 2.1 Literature Categorization Based on Theories

Domain	**Literature**	**Theory**	**Performance Method**
Quality	(Berger, 2013; Bhasin, 2008; Kaynak, 2003; Maasouman & Demirli, 2015; Parvadavardini, Vivek, & Devadasan, 2016)	Core Competency Theory	Lean
Cost	(Chauhan & Singh, 2012; Chiarini, 2013; Fullerton & Wempe, 2009; Pakdil & Leonard, 2014)	Transaction Cost Economics Theory	Lean
Speed	(Chiarini, 2013; Huntsman, 2012; Pakdil & Leonard, 2014)	Core Competency Theory	Lean

Table 2.1 Continued

Domain	Literature	Theory	Performance Method
Process Integration	(Amin & Karim, 2011; Gutierrez Gutierrez et al., 2016; Maasouman & Demirli, 2015)	Knowledge Base Theory	Lean
Flexibility	(Huntsman, 2012; Lee, 2015; Santos Bernardes & Hanna, 2009; Yusuf, Adeleye, & Sivayoganathan, 2003)	Resource Base View Theory	Agile
Innovation	(Conforto, Amaral, da Silva, Di Felippo, & Kamikawachi, 2016; Gligor et al., 2015)	Resource Base View Theory	Agile
Market Sensitivity	(Gligor et al., 2015; Huntsman, 2012; Santos Bernardes & Hanna, 2009)	Complexity Theory	Agile
Service Level	(Costantino, Dotoli, Falagario, Fanti, & Mangini, 2012; Gligor et al., 2015; Lee, 2015)	Core Competency Theory	Agile

In summary, it suffices to say that lean and agile has greatly benefited manufacturing, production and software industries. Similarly, the key component of these two methods can be extended to business process outsourcing operation in order to improve performance.

2.11 Direction of Study

Building on the outsourcing literature and the relational view, this study develops a theoretical model of factors that influence BPO performance and then tests it empirically. The relational view provides a useful lens to see through studies on how business processes can be improved by leveraging relationship-specific resources (or capabilities). The researcher argue that the success of a BPO company depends on whether the outsourced task is performed effectively. The researcher draw from the key dimensions of the relational view—knowledge-sharing routines, relation-specific assets, complementary capabilities, and effective control—to identify the meaningful antecedents of performance in BPOs. These antecedents include the cost control, the innovative capability, the service provider's response rate in achieving service level, the service provider's task–knowledge coordination, the service provider's process alignment/integration, and the service provider's process flexibility (Figure 2.4) within their respective domain.

The novelty of this theoretical approach (Figure 2.4) is that the researcher comprehensively assess the antecedents of performance measurement to offer an open understanding of how relationship-specific capabilities influence the performance that underlies the success of BPO outcomes. This provides a holistic view of how each of the antecedent relate within an organization and how each can be annexed, strengthened and improved to sustain performance.

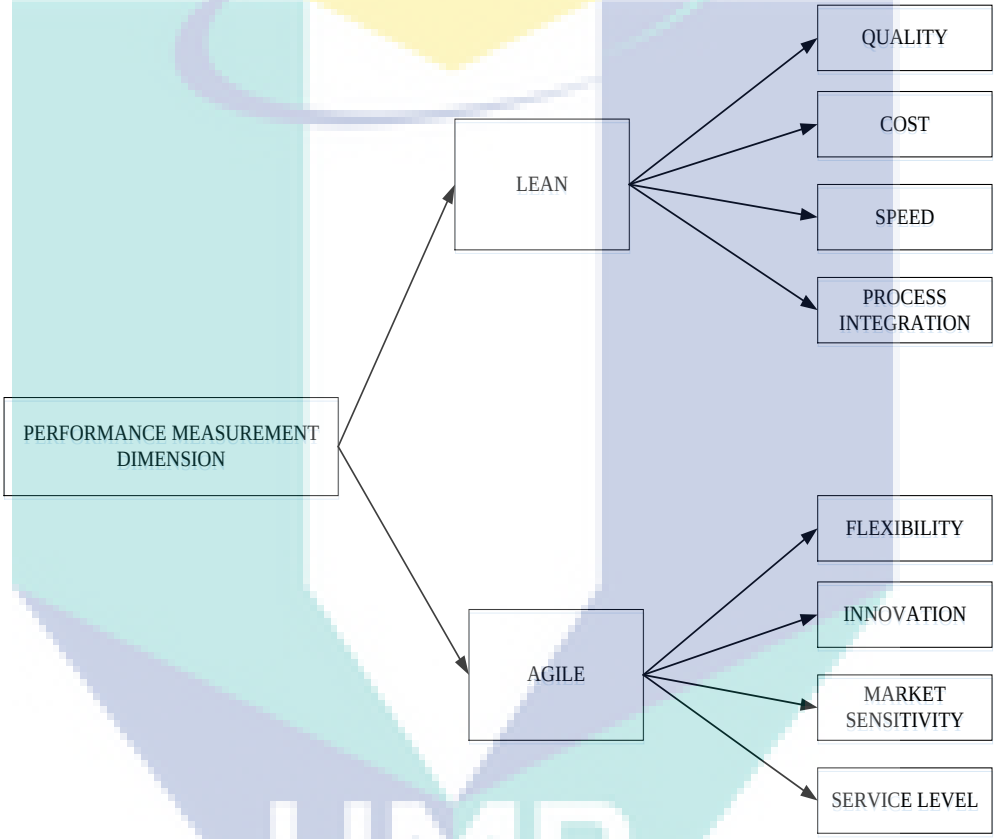

Figure 2.4 Theoretical Framework of Lean and Agile Performance Model

The transaction cost economics theory gives an overview of how firms implement strategies to expand their boundaries while reducing transaction (exchange) cost. In effect, transaction cost economics emphasizes effective cost management of participating in a market. Following cost management, a firm determines what distinguishes it from other competitors through well-defined systemic principles and ideologies. These ideologies are the core competency of a firm. The resource base view theory advocates creating capabilities that will add value to the customer through innovation. According to this theory, it is believed that the uniqueness of each economy

necessitates outsourcing to offshore locations in order to tap from different knowledge source. Unlike resource base view theory, knowledge base theory proposes that knowledge should be dependent on characteristics of individual firms' resources rather than being generic. The argument of the adherent of knowledge base theory has found their root in employee performance and capability. On the other hand, complexity theory postulates that the unpredictability of the market connotes that a firm should be responsive to the peculiar needs of its customer. Moving further from this theory is the contingency theory. This theory alludes to the variability that exists in the market. Therefore, for a firm to compete better, it is imperative to be adaptive to this variability. This study will follow this line of research in developing a performance measurement incorporating the key element of each of these theories. This research explores these theories from the lean and agile perspective and infers based on their factor loadings which item(s) positively/negatively influence performance.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter discusses the structure of the study. The fundamental stages and step by step of the method used in explaining the objectives of this research quantitatively. Research design, target population, the sample size, questionnaire design, data collection, measurement of variables and statistical analysis technique are used.

3.2 Research Design

The research design was according to factor analysis techniques outlined in Hair et. al (2010). Factor analysis is an interdependence technique used primarily to define the underlying structure among variables. In the development of this research model, the researcher establishes relationships among latent, unobserved constructs through theories and how these correlation are explain the indicators of the latent constructs. Coltman, Devinney, Midgley, & Venaik(2008) explained that "The process of measuring if variation in an indicator X is associated in variation with latent construct Y, then exogenous interventions that change Y can be detected in the indicator X" is referred to as a reflective model measurement. Hence, this research uses a reflective measurement to determine if variation of construct X affects Y.

According to Hair et al., (2010) and Coltman et al., (2008), the design of a factor analysis model is divided into 6 stages (Figure 3.1).

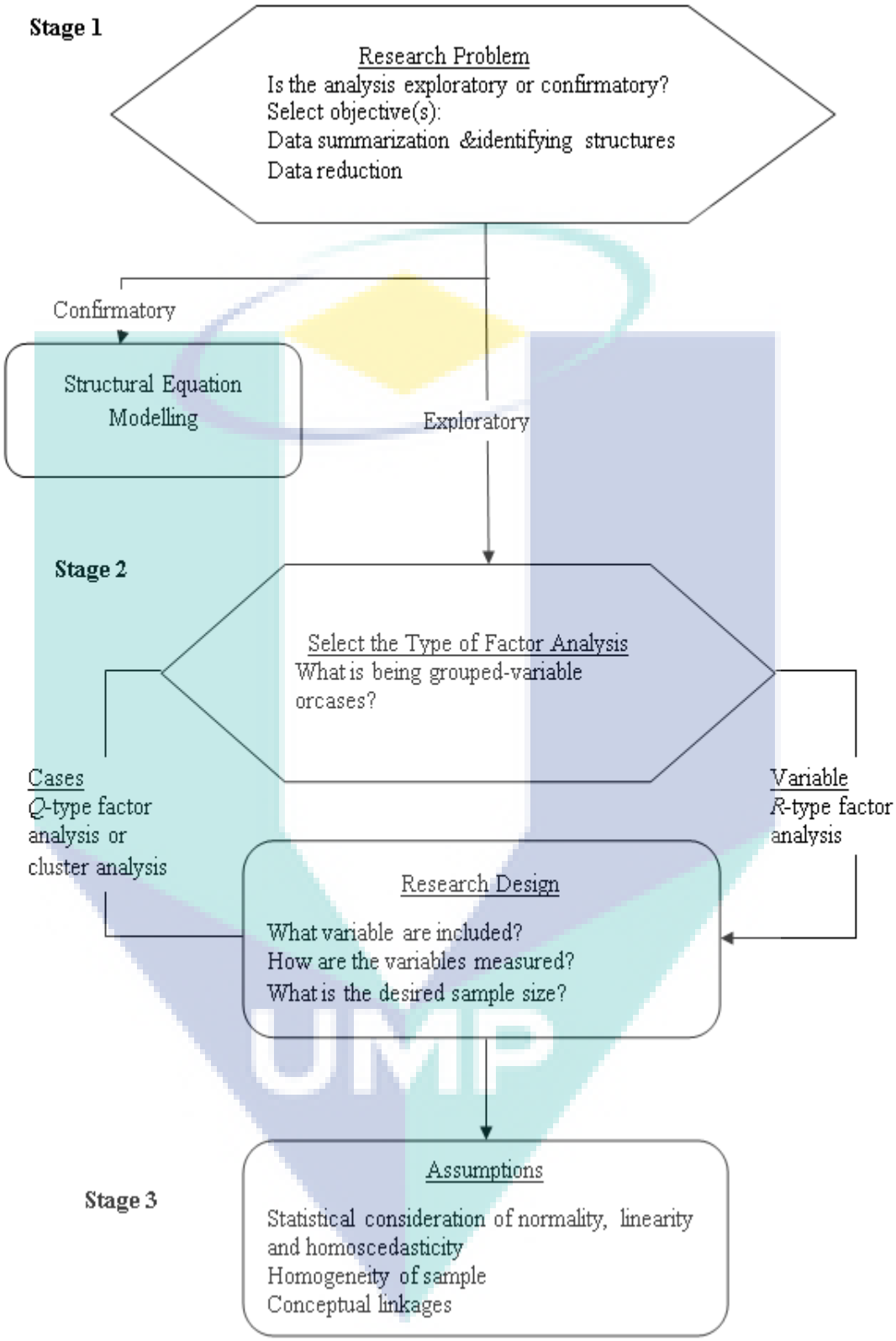

Figure 3.1Research Flow Chat

Source: Adapted from Hair et al (2010)

Figure 3.1 Continued

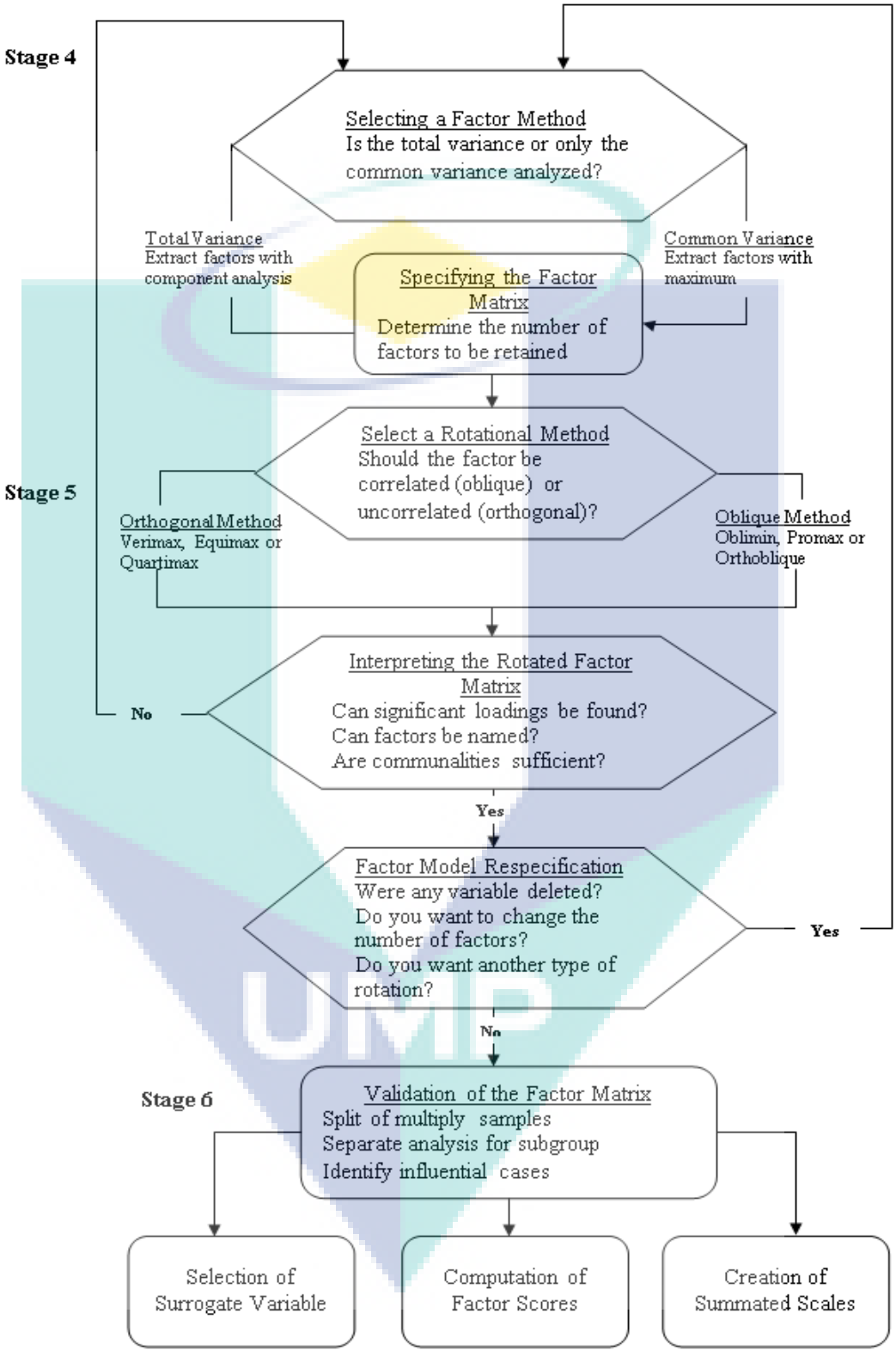

Figure 3.1Research Flow Chat

Source: Adapted from Hair et al (2010)

3.3 Population and Sampling Techniques

A population is a collection of individuals who have one or more personal or environmental characteristics in common (Wolf et al, 2013). This research work population was all the companies in outsourcing industry in Malaysia as published in Malaysia Digital Economy Corporation portal (MSC Malaysia, 2015b).

3.3.1 Sample of Study – Stage 1

A sample is a proportion of the population, a slice of it, a part of it and all its characteristics. A sample is a scientifically drawn group that actually possesses the same characteristics as the population (Allen, 1997). Sampling is the process of selecting a group of subjects for a study in such a way that the individuals represent the larger group from which they were selected. The best sampling is probability sampling, because it increases the likelihood of obtaining samples that are representative of the population. Probability samples are selected in such a way as to be representative of the population. They provide the most valid or credible results because they reflect the characteristics of the population from which they are selected (Allen, 1997).

Simple random sampling has been used in this study. "Simple random sampling is adopted in this piece of research work because it is the most commonly method employed in many practical situations" (Wolf et al, 2013). Each group of respondent have distinct characteristics from each other. Each group is classified based on their sector and job description as shown in Table 4.7. One main reason why this sampling technique was chosen is the ease of assembling the sample. It is also considered as a fair way of selecting a sample from a given population since every member is given equal opportunities of being selected. Another key feature of simple random sampling is its representativeness of the population (Wolf et al, 2013).

According to Hair et al. (2010) and Sekaran and Bougie (2010) in order to determine the sample size, the following must be taken into consideration:

(i) The response rate that would determine the final number of usable cases.

(ii) The statistical requirement.

(iii) Manageability of the administration of the survey and cost.

Many recommendations have been reviewed by researchers in relation to the number of sufficient sample size, most of these studies recommended sample of more than 100 responses to avoid sampling error and low reliability (Saunders, Lewis, Thornhill, Lewis, & Thornhill, 2009; Hair et al, 2010). Furthermore, Hair et al (2010) and Sekaran and Bougie (2010) also recommended that the acceptable minimum sample size should be 10:1 ratio, this ratio is between the number of observations and the number of variables. Therefore in this study, the number of observation is 8 and our response rate is 200 which translated to ratio is 25:1.

Kline R. B(2010) concluded that using a sample of less than 100 for factor analysis could lead to bias, ineffective measurement and a complicated null model (2005, 45-60). In the same line of reasoning, Loehlin (1992) and (Hoyle, 1995) recommended that sample size should be between 100- 200 for a covariance analysis technique. Loehlin (1992) opined that a sample of about 200 to 300 participants provide sufficient statistical power needed to conduct the most rigorous test of the data using SEM technique. In recent research, Wolf, Harrington, Clark, & Miller (2013) suggested that as a rule of thumb, any number above 200 is understood to provide sufficient statistical power for data analysis for factor analysis. This research follows the same approach as Wolf et al, (2013) and Hair et al (2010)

3.3.2 Variable Classification – Stage 2

The inter-relationships of all imputed set of variable are computed in a reflective measurement model (Figure 3.2). Hair et al (2010) defined a "reflective measurement model an indicator of a construct. The construct is the cause of the observed measures, so a variation in the construct leads to a variation in all its measures". Constructs are phenomena that exist independently of awareness or interpretation by the researcher, even if they are not observable. Each of the unobserved variable is depicted with the oval shape while the measuring instrument as coined from the theory is depicted with the square boxes. Figure 3.2 showed interrelationship of each variable and how these could correlate such that they form a unit of measurement.

From the foregoing literature reviews, performance measurement dimension can be grouped into two namely; Lean and Agile as showed in the research conceptual model (Figure 2.4).

3.3.3 Constructs and Variable Measurement

Measurements of variables are adapted from (Eyong, 2009; Wan, 2012) framework. Process integration Practices, Service Level Outcomes, and flexibility constructs are modified to be suitable for this study. Item measurement of governmental support in cost, which has been added to the research framework as a new variable, are developed as needed. For proper dimension and variation of measurement, items were measured on a five-level degree of agreement, 1 "Strongly Disagree" to 5 "Strongly Agree".

The novelty of this measurement is that the researcher added 2 new dimension which are process integration and cost. This enabled an open understanding of how relationship-specific capabilities influence the performance that underlies the success of BPO outcomes.

3.3.4 Questionnaire Design

The questionnaire is divided into three parts. The first part consisted of items related to demographics. The second part of the questionnaire consisted of existing practice of performance evaluation in the industry and the third part consist items related to the eight constructs that were identified through outsourcing theories.

(i) Add "process integration and cost" as a new variable: The researcher developed this variable following review of the literature, and the interviews and the correspondence with employees from major BPO companies in Malaysia. Furthermore, to know the kind of support the Malaysia government provided to BPO companies, the researcher included cost as a measure of support from the government. Several bulletins, books and operational text that relates to the government support were also reviewed.

(ii) Modify the Questionnaire and used the most commonly used terms in Malaysia: after designing the questions, the researcher modifies and simplified the questions by using common terms that are familiar to the respondent.

(iii) Pilot Study: The researcher conducted a pilot study with 10 respondents from the BPO industry to check the reliability of questions. The pilot study

afforded the experts to add/delete some of the questions which are not clear or may be misleading.

(iv) Re-modify the Questionnaire: after the definition of the questions that present the content of the variable, the researcher re-modified and arranged the questions.

(v) Distribute the questionnaires: The final questionnaire were distributed through email, personal distribution and social network (LinkedIn).

Additionally, measures were adopted or modified from scales established in extant research to avoid scale proliferation. The researcher used multi-item measures of constructs for the theoretical framework in order to improve reliability, reduce measurement error, have a greater variability among survey individuals and improve validity (RENNINGER & HIDI, 2011; Rotgans, 2015). Each construct was operationalized using at least 6 items for effective measurement and analysis (Haidari, Samani, & Sohrabi, 2016). All items included in the survey were pretested to ensure precise operationalization of defined variables in the questionnaire.

Each of the construct were label as either lean or agile with each domain of performance measurement as coined from the literature. For lean construct, the performance domain are Cost, Quality, Speed and Process Integration. Agile on the other hand has Innovation, Flexibility, Market Sensitivity and Service Level as its performance domain. In chapter 2, the researcher theoretically explained the purpose of each of these domain to BPO and why they have been added as performance measuring instrument. Therefore, the construct of the items in each domain represent a concept of the Lean-Agile performance model shown in Figure 3.2.

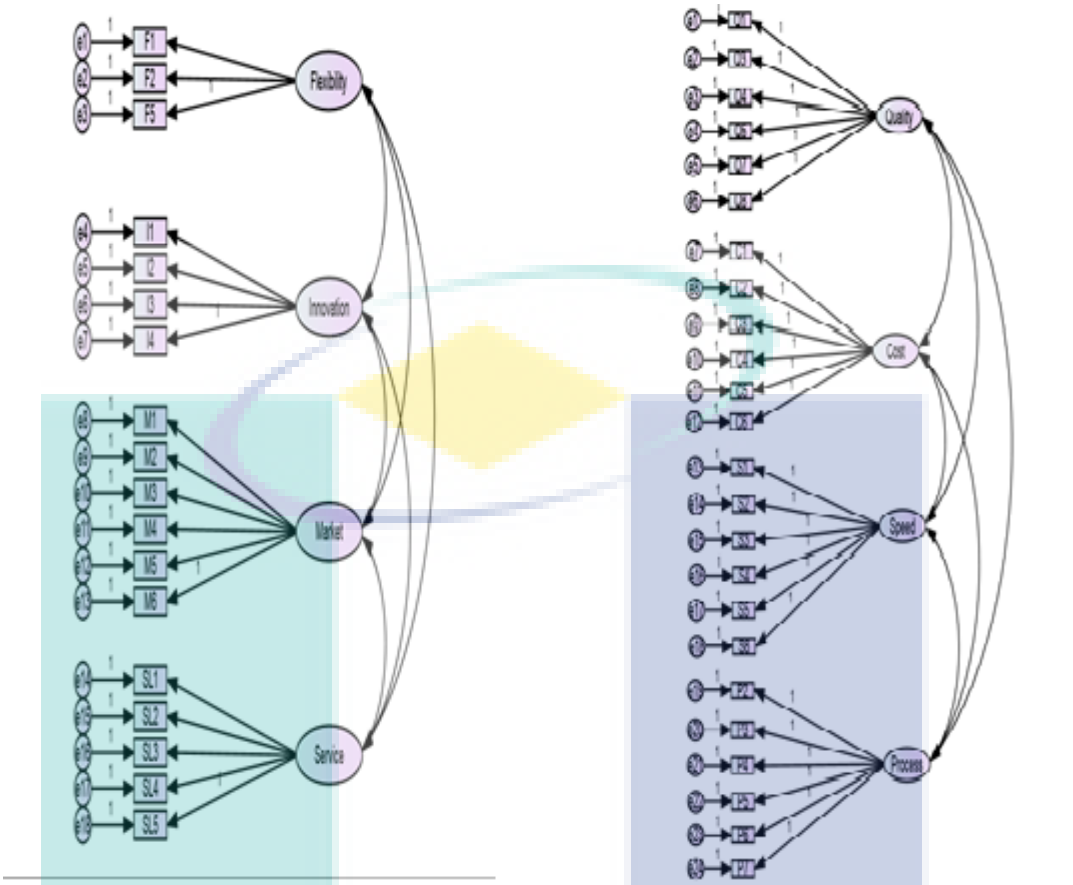

Figure 3.2 A Lean-Agile First Order Factor Model

3.3.5 Data Collection

Data collected were through an electronic survey and hand distribution. The questionnaire was distributed to the correspondent in BPO industries comprising of procurement, finance and accounting, training, human resource, and customer relationship management. The researcher employed the use of probability sampling since our sample size is known. There are 379 firms operating BPO solutions in Malaysia as published on the Multimedia Super Corridor Malaysia website (MSC Malaysia, 2015b). The data collection mode was according to the 4th edition of total design method (Dillman, 2014).The researcher chooses this total design method because according to Dillman "The total design method was formulated as an extension of social exchange theory, a sociological theory used to explain why individuals are motivated to engage in certain social behaviours and not others. Applied to surveys it emphasized writing questionnaires that included interesting questions that respondents would see as useful and easy to answer". The use of this method resulted in remarkable

response rate. Overall, out of 250 questionnaire that were sent out, 200 was complete and usable for the analysis.

3.3.6 Pilot Study

Put simply, a pilot study is a prototype of a full-scale study (Babbie, 1990). Conducting pilot study helps the researcher to identify unclear or ambiguous items in a questionnaire. During this process, the researcher refine the questionnaire according to the respondent's comprehension. Initial questionnaire where put through a reliability test to improve its internal consistency while some were reworded for respondent understanding. Detailed respondent characteristic and summary of the deleted items during this process were presented in chapter 4.

3.4 Plan of Data Analysis

This section provides the data reduction and factoring technique used to address the second research question raised in chapter one.

3.4.1 Factor Analysis

The general purpose of factor analytic techniques is to find a way to condense the information contained in a number of original variables into a smaller set of new, composite dimensions or variates with a minimum loss of information. In meeting this objective, factor analysis is keyed to four issues: specifying the unit of analysis, achieving data summarization or data reduction, variable selection and using factor analysis results with other multivariate techniques (Hair, J. F., Black, W. C., Babin, B. J. and Anderson, 2010).

3.4.2 Assumptions of Normality and Distribution – Stage 3

Prior to evaluating the reliability and validity of the model, the data were checked for anomalies, the existence of outliers and normality. In this regard, Dubey, Gunasekaran, & Samar Ali (2015) research supported the uses of skewness and kurtosis. Using plots of residuals, the researcher calculated values and statistics of skewness and kurtosis to get the maximum absolute value of s skewness and kurtosis of the indicators in the dataset. To further establish saturation of the dataset, the researcher conducted wave analysis test to check the significance of nonresponse bias (Lambert Douglas M and Harrington, 1990). As proposed by Armstrong cited in Dubey &

Gunasekaran (2014) nonresponse bias measures the difference between the answers of early respondents and late respondents. In this research, the early responses are usable questionnaires received within five months after distribution. Out of the 250 questionnaire that were sent, Table 3.1 list the breakdown of the response rate.(Dennis, 2003) and (Babbie, 1990) suggested that a response rate of 60% is good; 70% is very good and above 80% is excellently good.

Table 3.1 Questionnaire Response Rate

	Sent	Early Response	Late Response	Cumulative Response Rate %
LinkedIn	100	95	5	.38
Email	50	20	30	.72
Hand distribution	100	85	15	.80

3.4.3 Descriptive Analysis – Stage 4

The descriptive analysis of this study provides clear demographic profile of respondents. Following Hair et al (2010) suggestions, the researcher performed the followings in stages:

(i) Confirmatory Factor Analysis: "Confirmatory factor analysis is used to explore the underlying dimensions that could have caused correlations among the observed variables" (Hair et al., 2010). During this stage, the data extraction method, rotation method, and distribution analysis were specified.

(ii) Data Preparation: Missing data, reliability, and normality were examined during the data preparation stage. The researcher uses the values of Skewness and Kurtosis statistics to explain the distribution and sample adequacy was performed through Kaiser-Meyer-Olkin measure. Sekaran and Bougie (2013) referred to the acceptable limit of Skewness value is within ±2.0 cut-off point, while Kurtosis the cut-off point of less than 7 is acceptable.

(iii) Descriptive Analysis: To understand the characteristics of respondents, Demographic Descriptive Statistics through frequencies and percentage was used to describe the features of the employee, no of years in the industry,

type of BPO service, the level of education, years of the company operation and job description.

3.5 Model and Extraction Techniques – Stage 5

This study analyses common variance between the factors using maximum likelihood approach. Hair et al 2010 refer to maximum likelihood estimation method as "a procedure that iteratively improves parameter estimate to minimize a specified fit function". This is fitting for this research because recently, the usage of factor analysis has increased remarkably in most fields of research, especially to analyze management strategic phenomena.

The plethora of research adopting factor analysis attest to its viability for social management research. Factor analysis technique is attributed to its graphical interpretation of complex multivariable models. Additionally, when testing causal relationships, factor analysis provide best approach than other multivariate techniques (Hair, J. F., Black, W. C., Babin, B. J. and Anderson, 2010). Additionally, the researcher favour the user of factor analysis in order to check the error variance in the model (Hair et al., 2010; Anderson & Gerbing, 1988).

3.6 Evaluation of the Measurement Model – Stage 6

The purpose of evaluating a measurement is to assess the unidimensionality, validity, and its reliability. In this study, the following rule of thumb guided the researcher in the development of the measurement model:

(i) Unidimensionality: The factor loading for each of the items were set to a cut-off point of above 0.5. All items below 0.5 were deleted.

(ii) Validity is the ability of the instrument to measure what it supposed to be measuring. This study subjected the data to all of validity testing. During the convergent validity testing, the researcher verifies that the value of average variance extracted are all greater than 0.5. For construct validity, the researcher uses fit indices value. The acceptable fit indices benchmark was adopted from Hair et al (2010) recommendation. Goodness fit (GFI .90 or higher), comparative fit (CFI .90 or higher), root mean square error of

approximation (RAMSEA ≤ .08) and the ratio of Chisq/df is < 5.0. While for discriminant validity values of maximum shared variance and average shared variance should be less than AVE.

(iii) Reliability is the extent to which an item is consistent in measuring the latent construct. In this study, the researcher checked the internal consistency of the items through Cronbach's Alpha value following Hair et al (2010) benchmark > 0.7 and construct reliability (CR)> 0.7, while average variance extracted (AVE) > 0.5.

3.7 Summary and Conclusion

This chapter provided the stage 1-6 of the quantitative analysis technique used by the researcher. The sample size, questionnaire design, and data collection are also defined from the population of BPO companies in Malaysia. In the following chapter, the researcher presents the findings of each stage in descriptive, analytical and graphical form. These findings provides the clearer picture of how the research objectives have been met.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

This chapter report the results of the field study. The results were analysed with the use of statistical software (SPSS 22). For clarity of the analysis, the results are organized into sections. The pilot study section report the characteristics of the respondent and the overview of the items that were deleted. The demographic section report the different characteristics of all the respondents while the distribution and normality test section shed more light on the meaning of their responses. The CFA section focuses on reporting the correlation and sample adequacy as well as the pattern matrix. In addition, the section provides the reliability and validity report of the items which provides evidences as to the fitness of the data for measurement validation.

4.2 Pilot Study

The researcher conducted a pilot study to examine the comprehensibility of each the questionnaire. According Byrne (2010) this "process help to aid the understanding of the respondent by removing difficult question". In addition, the pilot study helps the researcher to validate the items in terms of its content and as well to estimate the response time. The participants having similar characteristics to the study population were selected. Five person of the respondents are operation managers, four persons are quality analysis and one person is a team leader. All the respondents have all spent average of 7 years in the outsourcing industry with diverse knowledge areas.

With the aid of the pilot study, unclear items are reworded while some were deleted. Table 4.1 below gives the overview of items that were deleted (See Appendix A).

Table 4.1 Summary of Deleted Items

Item-Total Statistics	
	Cronbach's Alpha if Item Deleted
The company gives freedom to its employee.(Q2)	0.720
The company doesn't have a formal method in the performance appraisal for the purpose of providing feedback to employees(Q6)	0.739
In general, the performance of this company is much better than the performance of competitors.(C7)	0.723
I am generally known for introducing excellent service to the customer.(S7)	0.729
I do not enjoy talking about this company with other people.(P1)	0.781
I share only approved information with my team members.(P8)	0.766
The company uses cash incentives to motivate employees.(F3)	0.706
Cross-functional job activities are not encouraged by the company.(F4)	0.620
There is a platform for employee knowledge sharing with others.(I5)	0.715
Customers are satisfied with the performance of this company.(SL6)	0.755

4.3 Demographic Descriptive

Table 4.2 shows the distribution of respondents according to the numbers of years that they have spent in their current companies. The majority of the respondents' have spent 3-5 years which is exactly 35% (n=70). Meanwhile, 27.5% (n = 55) and 20% (n = 40) have spent 1-2 years and 6-10 years respectively in their current company. Just next to that is 12.5% (n = 25) of respondent which have spent 1 year in their current companies while 5% (n = 10) have spent 10 years.

Table 4.2 No of Years Spent inCurrent Company

Years	**Frequency**	**%**
Below 1 year	25	12.5%
1 – 2	55	27.5%
3 – 5	70	35.0%
6 – 10	40	20.0%
Above 10 years	10	5.0%
Total	**200**	**100%**

Table 4.2 tabulates the distribution of respondents according to the number of years that they have spent in the BPO industry. The majority of the respondents' have spent 3-5 years which is exactly 33% (n=66). Closely following that is 32% (n = 64) who have spent 10 years and above in the industry. The total of 25% (n = 50) have

spent 6-10 years. Meanwhile, 6% (n = 12) and 4% (n = 8) have spent 1-2 years and below 1 respectively year in the industry.

Table 4.3 No ofYears Spent in BPO Industry

Years	Frequency	%
Below 1 year	8	4.0%
1 – 2	12	6.0%
3 – 5	66	33.0%
6 – 10	50	25.0%
Above 10 years	64	32.0%
Total	200	100%

Out of the total respondents, 27.5% (n = 55) have diploma certificate. Meanwhile, there is a close gap between respondent with bachelor degree and professional certificate holders with 22.5% (n = 45) and 21.5% (n = 43) respectively. Respondent with master degree occupy 18.5% (n = 37) while the remaining 10% (n = 20) are respondents with secondary school certificates (Table 4.4).

Table 4.4 Respondent Level of Education

Education	Frequency	%
Secondary School	20	10.0%
Diploma	55	27.5%
Professional Certificate	43	21.5%
Bachelor Degree	45	22.5%
Master Degree	37	18.5%
Total	200	100%

Table 4.5 shows the description of the sector in which the outsourcing industry operates. The majority of the respondents are from customer call center and IT technical support operations occupying 36% (n = 72) and 32% (n = 64) respectively. The production sector of the industry occupy 12.5% (n = 25) while the logistics and insurance sector took 10.5% (n = 21) and 9% (n =18) respectively.

Table 4.5 Sector of Industry the Company Operate

Sector	Frequency	%
Customer Call Centre (e.g financial, e-payment & services)	72	36.0%
IT Tech. Support	64	32.0%

Table 4.5 Continued

Sector	Frequency	%
Production	25	12.5%
Logistic	21	10.5%
Insurance	18	9.0%
Total	200	100%

Table 4.6 shows the company's years of existence. A total of 54% (n = 108) of our respondent comes from a company with over 10 years of existence. Companies with 6-10 years and 3-5 years occupy 40% (n = 80) and 5% (n = 10) respectively. While companies below 1 year to 2 years have 0.5% (n = 1) each.

Table 4.6 Company's Years of Operation

Years	Frequency	%
Below 1 year	1	0.5%
1 – 2	1	0.5%
3 – 5	10	5.0%
6 – 10	80	40.0%
Above 10 years	108	54.0%
Total	200	100%

The job description of the respondent is described in Table 4.7. Quality analyst took 36% (n =72) of our total respondent. Meanwhile, agent and supervisor had 25.5% (n = 51) and 22% (n = 44) respectively. Operation managers account for 14% (n = 28) and CEO occupy 2.5% (n = 5).

Table 4.7 Respondent Job Description

Job Description	Frequency	%
CEO	5	2.5%
Operation Managers	28	14.0%
Supervisor/Team Lead	44	22.0%
Quality Analyst	72	36.0%
Agent	51	25.5%
Total	200	100%

4.4 Distribution and Normality Test

To understand the characteristics of each construct in this study, the researcher analyses the Demographic Descriptive Statistics through mean, skewness and kurtosis. The data analysis result were presented in (Table 4.8 – 4.15).

Table 4.8 Descriptive of Quality Items

	Mean	Std Factor Loading	Variance	Skew	Kurt	Std Error
The company compares the performance of employees who perform similar work.(Q1)	2.930	0.811	0.658	-0.042	-0.239	0.057
The company uses a high proportion of managers and supervisors when compared to other companies.(Q3)	3.040	0.801	0.642	0.046	-0.253	0.057
The managers and supervisors use a predefined checklist for performance appraisal.(Q4)	2.965	0.766	0.587	-0.008	0.325	0.054
The managers monitor accurately the speed and the schedule that must be accomplished by the agents.(Q5)	2.935	0.863	0.744	-0.064	-0.139	0.061
The managers directly control the daily activities of the agents.(Q7)	2.920	0.804	0.647	0.029	-0.001	0.057
The company uses the results of performance appraisal only to assist in employee skill development.(Q8)	2.950	0.843	0.711	0.095	-0.115	0.060

The responses to the quality items in Table 4.8 indicated that performance measurement of employees (Q1), accurate performance checklist (Q4), and accurate response rate (Q5) are negatively skewed. This showed that respondent believed these are currently being practice in their respective organizations. The effect of using a predefined checklist is evident in Q5 which showed a very high standard factor loading.

Table 4.9 Descriptive of Cost Items

	Mean	Std Factor Loading	Variance	Skew	Kurt	Std Error
The earning of this company increased from last year.(C1)	3.040	0.856	0.732	-0.077	-0.474	0.061
This company has achieved the expected level of sales/services. (C2)	2.985	0.753	0.568	0.167	0.325	0.053
The handling time doesn't have bearing on cost performance.(C3)	3.010	0.821	0.673	-0.239	-0.133	0.058
This company doesn't benefit very much from government financial assistance because many reservations impose upon it which restricts our activities and decisions.(C4)	3.045	0.816	0.666	0.029	-0.400	0.058
The financial aid empowers this company to introduce new techniques and adopts advanced work methods, which lead to improving the organizational performance.(C5)	2.945	0.920	0.846	-0.008	-0.546	0.065
The assistance that this company gets from the government is just financial.(C6)	3.095	0.780	0.609	0.024	-0.259	0.055

The responses to the cost items in Table 4.9 indicated the obvious fact of continuous service improvement (C2) and the assistance the industry is getting from the government (C4, C6). Majority strongly disagree hence, agreeing that the financial aid empowers their company to introduce new techniques and adopts advanced work methods, which lead to improving the organizational performance as shown in standard factor loading for C5.

Table 4.10 Descriptive of Speed Item

	Mean	Std Factor Loading	Variance	Skew	Kurt	Std Error
I consider the completion of my work the most important thing for me.(S1)	3.070	0.818	0.668	-0.130	-0.658	0.058
The company provides good opportunity and platform to multi-task.(S2)	2.915	0.735	0.540	0.135	-0.282	0.052
As much as possible I try to meet all the demands of customers within first 10 min.(S3)	3.100	0.839	0.704	-0.139	-0.199	0.059
I believe that providing good service and at an appropriate time is something important in my work.(S4)	2.970	0.826	0.683	-0.052	-0.215	0.058
Escalation of cases to other team affect my processing time.(S5)	2.865	0.806	0.650	0.018	-0.107	0.057
Excessive workload doesn't affects my performance rate.(S6)	2.980	0.850	0.723	0.187	-0.298	0.060

The responses to the speed items in Table 4.10 indicated that many agreed on performing their task within a stipulated time frame as well that the services performed should be of good quality as expected. However, a recursive result on the factor loading showed that even when there are excessive workload, the finish rate must always be the same. The effect of this is further evident in process integration items.

The responses to the process integration items shown in Table 4.11 indicated that many disagreed on information sharing practice in their organization. This sometimes is due to engagement / house rules on standardization within their respective project team. With high volume of task to be accomplished within a stipulated time frame, employee's reaction is shown in their attitude toward their company. Most of the respondent truthfully opined that they don't feel that the company's problem are theirs.

Table 4.11 Descriptive of Process Integration Item

	Mean	Std Factor Loading	Variance	Skew	Kurt	Std Error
I don't really feel that the company's problems are my problems.(P2)	3.000	0.757	0.573	-0.140	-0.489	0.054
I help to guide new employees in the company.(P3)	2.940	0.824	0.680	0.004	-0.209	0.058
I always offer important information to other colleagues in my section.(P4)	3.045	0.835	0.696	0.177	-0.209	0.059
I feel comfortable with the way the manager deal with the problem that influences me even if I could not bear his actions.(P5)	3.050	0.800	0.641	-0.031	-0.387	0.057
The company provides good compensation for the best employee.(P6)	3.030	0.814	0.662	-0.055	-0.638	0.058
Customer feedback is cascaded to the team members for the improvement plan.(P7)	2.935	0.815	0.664	-0.217	-0.467	0.058

The responses to the flexibility items in Table 4.12 indicated that employees are not satisfied with the current work culture because all disagreed.

Table 4.12 Descriptive of Flexibility Item

	Mean	Std Factor Loading	Variance	Skew	Kurt	Std Error
The company doesn't allows employees flexible working hours.(F1)	2.950	0.742	0.550	0.080	0.061	0.052
The company sponsor activities outside the company (for example: football, futsal, volleyball competition) in order to build community spirit.(F2)	2.945	0.846	0.716	0.155	-0.492	0.060
Information sharing between inter-department is encouraged.(F5)	3.015	0.836	0.698	0.076	-0.557	0.059

The responses to the innovation items shown in Table 4.13 indicated that many disagreed on their inclusion in process improvement plan. Employees' creativity are evidently not encouraged. While most of the employees benefited from government subsidized trainings initiatives such as Human Resources Development Fund (HRDF), the skill they acquired are relatively not been put to practice in their respective organization.

Table 4.13 Description of Innovation Item

	Mean	Std Factor Loading	Variance	Skew	Kurt	Std Error
Most of our employees take advantage of government training programs.(I1)	3.095	0.754	0.569	-0.017	-0.142	0.053
Government training programs doesn't increase employees' abilities to perform their jobs.(I2)	2.925	0.795	0.633	-0.167	-0.434	0.056
Individual decision is frown upon by the company's management.(I3)	2.99	0.851	0.724	-0.08	-0.201	0.06
Employees are involved in process improvement plan.(I4)	2.9	0.777	0.603	0.046	-0.362	0.055

The responses to the market sensitivity items shown in Table 4.14 indicated that client's requirement is very important in employee sourcing and selection (M2). However, the low loading for the same item indicated that majority believed that this is negatively affecting their innovative capabilities.

Table 4.14 Descriptive of Market Sensitivity Item

	Mean	Std Factor Loading	Variance	Skew	Kurt	Std Error
The company's selection practices focus on the compatibility of the individual with the culture of our company.(M1)	2.940	0.824	0.680	0.058	-0.058	0.058

Table 4.14 Continued

	Mean	Std Factor Loading	Variance	Skew	Kurt	Std Error
When selecting employees, the company evaluate their suitability to the client's requirements.(M2)	2.895	0.779	0.607	-0.072	-0.457	0.055
Customer's demand doesn't affect our employee selection.(M3)	3.035	0.811	0.657	-0.064	-0.323	0.057
The company tends to evaluate job applicants based on their ability to do tasks at work directly with less supervision.(M4)	3.105	0.823	0.677	0.021	-0.257	0.058
When interviewing applicants, the company mainly evaluate the extent of their ability to work with employees who are currently in the company.(M5)	3.070	0.824	0.678	-0.076	-0.319	0.058
We look for the best resources (such as top graduates) in order to get the best talents.(M6)	2.880	0.780	0.609	-0.043	-0.480	0.055

The responses to the service level items shown in Table 4.15 indicated that although their organization is not making effort to introduce new services to enhance customer satisfaction, the current customer satisfaction rating in itself does not reflect the true service quality of their organization. This indicate that many view the feedback from the customers as seemingly insignificant.

Table 4.15 Descriptive of Service Level Item

	Mean	Std Factor Loading	Variance	Skew	Kurt	Std Error
The company is making efforts to introduce new service to enhance customer satisfaction.(SL1)	2.965	0.835	0.697	0.118	-0.405	0.059

Table 4.15 Continued

	Mean	Std Factor Loading	Variance	Skew	Kurt	Std Error
The company always devises new methods to provide its products and services.(SL2)	2.885	0.758	0.575	-0.014	-0.045	0.054
The customer rating / survey doesn't reflect the true quality of our service.(SL3)	2.910	0.846	0.715	-0.180	-0.159	0.060
The Company is significantly interested in the quality of services provided to customers.(SL4)	2.955	0.810	0.656	0.312	-0.264	0.057
The company doesn't make a clear effort to please its customers.(SL5)	3.065	0.695	0.483	-0.088	-0.382	0.049

4.5 Confirmatory Factor Analysis

Hair et al (2010) defines Confirmatory Factor Analysis (CFA) "as orderly simplification of interrelated measures". Moving further, Child (2006) explained that CFA is suitable for determining factor structure of a set of observed variables. Conducting CFA solidifies the premise for which the latent construct was used and understood by scholars and industry practitioners.

The researcher uses CFA to determine the underlying methodology describing the factors in a commonalities matrix extraction under maximum likelihood method. The dataset goodness of fit in summary indicates that in overall it's significant. With the aid of the CFA, the researcher was able to correct measures in the items and subjected it to validity test. Furthermore, to ensure internal consistency of the scale items and its correlation in measuring the intended construct the researcher uses Cronbach's alpha value ($\alpha > .7$) as suggested by Brown (2006) and Curran et al., (1996).

4.6 Correlation and Sample Adequacy

To understand the relationships of the imputed data, the researcher uses R-type factor analysis. According to Hair et al (2010), R-type factor analyses relationships among variables to identify groups of variables forming latent dimensions or factors. Hair et al (2010) indicated that correlation matrix should fulfil two assumptions: the variables have to be inter-correlated, but they should not correlate too highly (extreme multicollinearity and singularity) as this would cause difficulties in determining the unique contribution of the variables to a factor (Hair 2010: 98). Table 4.16 showed the correlation of factors extracted under maximum likelihood method. The maximum likelihood method determines how well the factors explain the variation (Hair 2010: 93). The priority here is to identify the linear combination of variables that account for the largest amount of common variance. These linearity are evident from how each factor correlate with others to further strengthen the theoretical assumption.

Table 4.16 Factor Correlation Matrix

Factor	1	2	3	4	5	6	7	8
1	1.000	.406	.262	.360	.112	.145	.211	.358
2	.406	1.000	.449	.295	.208	.061	.136	.375
3	.262	.449	1.000	.018	.406	.279	.068	.025
4	.360	.295	.018	1.000	.171	.204	.098	.098
5	.112	.208	.406	.171	1.000	.058	.125	.329
6	.145	.061	.279	.204	.058	1.000	.051	.338
7	.211	.136	.068	.098	.125	.051	1.000	.244
8	.358	.375	.025	.098	.329	.338	.244	1.000

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

Additionally, to determine data appropriateness for a factor analysis, the researcher check the sample adequacy through Kaiser-Meyer-Olkin Measure of Sampling Adequacy (Kaiser, 1974) The KMO as shown in (Table 4.17) compares the observed correlation coefficients to the partial correlation coefficient. The Bartlett test of sphericity is a statistical test for the presence of correlation among the variables. This provides the statistical significance that the correction matrix has significant correlation at least to some of the variables. Furthermore, the degree of inter-correlations among

the variables and the appropriateness of factor analysis is measured by KMO. The KMO index ranges from 0 to 1, with a measure approaching 1 indicating that each variable is perfectly predicted without error by the other variables. Hair et al (2010) suggested value .80 above as being meritorious and acceptable.

Table 4.17 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.883
Bartlett's Test of Sphericity	Approx. Chi-Square	2826.886
	df	861
	Sig.	.000

4.7 Pattern Matrix

The purpose of using scree plot in this study is to satisfy the assumption of linearity in the variables. In the case of individual variables, the "linearity relates to the patterns of association between each pair of variables and the ability of the correlation coefficient to adequately represent the relationship" (Hair et al., 2010). For this research the researcher rely on the visual inspection of the relationships to determine whether non-linearity of relationship are present (Figure 4.1). The scree plot and the patter matrix containing the selected metric variable in the data set showed that the extraction based on eigenvalue as does not reveal any apparent nonlinear patterns.

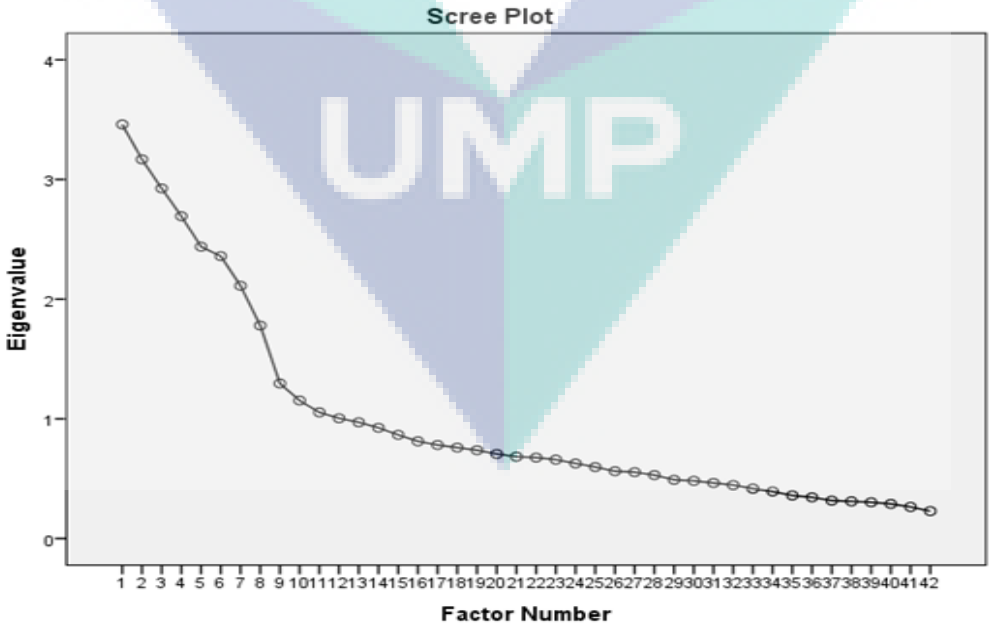

Figure 4.1 Scree Plot

The use of Eigen value is appropriate for this research because according to Hair et al., (2010), "the Eigen value indicate the column sum of squared loadings for a factor, also referred to as the latent root". Hence, it represents the amount of variance accounted for by a factor and how each factor correlate between the original variables or within its latent factor. The pattern matrix shown in Table 4.18 is the key to understanding the nature of the latent factor where the squared factor loading indicate what percentage of the variance in an original variable is explained by that factor. The Factor Pattern Matrix was carried out in an oblique rotation so that the extracted factors are correlated rather than arbitrarily constraining the factor rotation to an orthogonal solution, the oblique rotation helps the researcher to identify the extent to which each of the factor is correlated.

Table 4.18 Pattern Matrix[a]

	Component							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Quality (Q1)				.807				
Quality (Q3)				.911				
Quality (Q4)				.856				
Quality (Q5)				.815				
Quality (Q7)				.789				
Quality (Q8)		.308		.960				
Cost (C1)		.827						
Cost (C2)		.884						
Cost (C3)		.939						
Cost (C4)		.806						
Cost (C5)		.726						
Cost (C6)		.858						
Speed (S1)			.834					
Speed (S2)			.801					
Speed (S3)			.898					
Speed (S4)			.906					
Speed (S5)		.237	.825					
Speed (S6)			.894					
Process Integration (P2)	.984							
Process Integration (P3)	.741							
Process Integration (P4)	.843							
Process Integration (P5)	.926							
Process Integration (P6)	.941	.200						
Process Integration (P7)	.978							

Table 4.18 Continued

	1	2	3	4	5	6	7	8
Flexibility (F1)								.823
Flexibility (F2)								.841
Flexibility (F5)								.938
Innovation (I1)							.944	
Innovation (I2)							.862	
Innovation (I3)							.751	
Innovation (I4)							.699	
Market Sensitivity (M1)					.850			
Market Sensitivity (M2)					.902			
Market Sensitivity (M3)					.820			
Market Sensitivity (M4)					.949			
Market Sensitivity (M5)					.751			
Market Sensitivity (M6)					.828			
Service Level (SL1)						.782		
Service Level (SL2)					.248	.955		
Service Level (SL3)						.866		
Service Level (SL4)						.839		
Service Level (SL5)						.858		

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 8 iterations.

4.8 Reliability and Validity

To test the internal consistency of the items, the researcher conducted reliability using Cronbach's alpha. All the items record a remarkable consistency as shown in Table 4.19. According to Hair, et al. (2010) value of Cronbach's alpha more than .70 is acceptable and can be considered reliable.

Table 4.19 Reliability of Items

Variables	Number of items	Cronbach's Alpha values
Quality	6	.739
Cost	6	.723
Speed	6	.729
Process Integration	6	.781
Flexibility	3	.706
Innovation	4	.715
Market Sensitivity	6	.748
Service Level Optimization	5	.755
Total	42	

In order to test the homogeneity of the items and its dimension in measuring the hypothesis as represented in each domain of the model, the researcher conducted construct reliability, convergent and discriminant validity.

The researcher operationalized the theoretical measurement framework by using average variance extracted. Larcker (1981) and Richard P. Bagozzi (1991) states "that when the square root of average variance is greater than the correlation matrix, the measurement framework indicates discriminant validity" (Table 4.20).

Table 4.20 Descriminant Validity

	X1	X2	X3	X4	X5	X6	X7	X8
Quality	0.825*							
Cost	0.406	0.812*						
Speed	0.262	0.449	0.812*					
Process Integration	0.360	0.295	0.018	0.806*				
Flexibility	0.112	0.208	0.406	0.171	0.806*			
Innovation	0.145	0.061	0.279	0.204	0.058	0.794*		
Market Sensitivity	0.211	0.136	0.068	0.098	0.125	0.051	0.806*	
Service Level Optimization	0.358	0.375	0.025	0.098	0.329	0.338	0.244	0.794*

Note: (* $\sqrt{AVE}$)

The analyses shown in table 4.21 indicate that the standard loading was in all cases greater or very close to 0.7 with considerable high t values ($p<0.05$) and composite values of constructs were all above 0.7. Goodness of fit and best practices for our model are Root Mean Square Error of Approximation (RMSEA) = 0.07, Degree of Freedom (df) = 90, Chi-Square (X^2)=1362.479, likelihood ratio (X^2/df) = 1.5 which met the admissibility threshold set by past research RMSEA < 0.08 (Cheung & Rensvold, 2002; Steiger, 1990), X^2/df = 1 – 5 (Brown, 2006; P. Kline, 2014). The average variance extracted (AVE) of constructs were also greater than 0.6 in all cases. These also met or exceeded (>0.5)the minimum threshold value suggested by Hair, et al., (2010) and Hu & Bentler (1981). Therefore, we can assume that convergent validity exists in our theoretical framework.

Table 4.21 Composite Reliability and Average Variance Computation

Construct	Item	Standardized Factor Loading	Variance	Error	Scale Composite Reliability	Average Variance Extracted (AVE)
Qaulity Cronbach's alpha = 0.739	The company compares the performance of employees who perform similar work.(Q1)	0.811	0.658	0.057	0.86	0.68
	The company uses a high proportion of managers and supervisors when compared to other companies.(Q3)	0.801	0.642	0.057		
	The managers and supervisors use a predefined checklist for performance appraisal.(Q4)	0.766	0.587	0.054		
	The managers monitor accurately the speed and the schedule that must be accomplished by the agents.(Q5)	0.863	0.744	0.061		
	The managers directly control the daily activities of the agents.(Q7)	0.804	0.647	0.057		
	The company uses the results of performance appraisal only to assist in employee skill development.(Q8)	0.843	0.711	0.060		
Cost Cronbach's alpha = 0.723	The earning of this company increased from last year.(C1)	0.856	0.732	0.061	0.86	0.66
	This company has achieved the expected level of sales/services.(C2)	0.753	0.568	0.053		
	The handling time doesn't have bearing on cost performance.(C3)	0.821	0.673	0.058		
	This company doesn't benefit very much from government financial assistance because many reservations impose upon it which restricts our activities and decisions.(C4)	0.816	0.666	0.058		
	The financial aid empowers this company to introduce new techniques and adopts advanced work methods, which lead to improving the	0.920	0.846	0.065		
	The assistance that this company gets from the government is just financial.(C6)	0.780	0.609	0.055		

Table 4.21 Continued

Construct	Item	Standardized Factor Loading	Variance	Error	Scale Composite Reliability	Average Variance Extracted (AVE)
Speed Cronbach's alpha = 0.729	I consider the completion of my work the most important thing for me.(S1)	0.818	0.668	0.058	0.86	0.66
	The company provides good opportunity and platform to multi-task.(S2)	0.735	0.540	0.052		
	As much as possible I try to meet all the demands of customers within first 10 min.(S3)	0.839	0.704	0.059		
	I believe that providing good service and at an appropriate time is something important in my work.(S4)	0.826	0.683	0.058		
	Escalation of cases to other team affect my processing time.(S5)	0.806	0.650	0.057		
	Excessive workload doesn't affects my performance rate.(S6)	0.850	0.723	0.060		
Process Integration Cronbach's alpha = 0.781	I don't really feel that the company's problems are my problems.(P2)	0.757	0.573	0.054	0.86	0.65
	I help to guide new employees in the company.(P3)	0.825	0.680	0.058		
	I always offer important information to other colleagues in my section.(P4)	0.835	0.696	0.059		
	I feel comfortable with the way the manager deal with the problem that influences me even if I could not bear his actions.(P5)	0.800	0.641	0.057		
	The company provides good compensation for the best employee.(P6)	0.814	0.662	0.058		
	Customer feedback is cascaded to the team members for the improvement plan.(P7)	0.815	0.664	0.058		
Flexibility Cronbach's alpha = 0.706	The company doesn't allows employees flexible working hours.(F1)	0.742	0.550	0.052	0.75	0.65
	The company sponsor activities outside the company (for example: football, futsal, volleyball competition) in order to build community spirit.(F2)	0.846	0.716	0.060		
	Information sharing between inter-department is encouraged.(F5)	0.836	0.698	0.059		

Table 4.21 Continued

Construct	Item	Standardized Factor Loading	Variance	Error	Scale Composite Reliability	Average Variance Extracted (AVE)
Innovation Cronbach's alpha = 0.715	Most of our employees take advantage of government training programs.(I1)	0.754	0.569	0.053	0.80	0.63
	Government training programs doesn't increase employees' abilities to perform their jobs.(I2)	0.795	0.633	0.056		
	Individual decision is frown upon by the company's management.(I3)	0.851	0.724	0.060		
	Employees are involved in process improvement plan.(I4)	0.777	0.603	0.055		
Market Sensitivity Cronbach's alpha = 0.748	The company's selection practices focus on the compatibility of the individual with the culture of our company.(M1)	0.825	0.680	0.058	0.86	0.65
	When selecting employees, the company evaluate their suitability to the client's requirements.(M2)	0.779	0.607	0.055		
	Customer's demand doesn't affect our employee selection.(M3)	0.811	0.657	0.057		
	The company tends to evaluate job applicants based on their ability to do tasks at work directly with less supervision.(M4)	0.823	0.677	0.058		
	When interviewing applicants, the company mainly evaluate the extent of their ability to work with employees who are currently in the company.(M5)	0.824	0.678	0.058		
	We look for the best resources (such as top graduates) in order to get the best talents.(M6)	0.780	0.609	0.055		
Service Level Cronbach's alpha = 0.755	The company is making efforts to introduce new service to enhance customer satisfaction.(SL1)	0.835	0.697	0.059	0.83	0.63
	The company always devises new methods to provide its products and services.(SL2)	0.758	0.575	0.054		
	The customer rating / survey doesn't reflect the true quality of our service.(SL3)	0.846	0.715	0.060		
	The Company is significantly interested in the quality of services provided to customers.(SL4)	0.810	0.656	0.057		
	The company doesn't make a clear effort to please its customers.(SL5)	0.695	0.483	0.049		

Note: *Scale composite reliability (SCR) = SSI/(SSI+SEV), Average Variace (AVE) = $(Std_1^2 + Std_2^2 + Std_3^2 \ldots + Std_n^2)/n$ Sum of Standard Loading Factor (SSI) = $(Std_1 + Std_2 + Std_3 \ldots + Std_n)^2$ Sum of error variance (SEV) = $Error_1 + Error_2 + Error_3 \ldots + Error_n$*

4.9 Measurement and Model Validation

The measurement model of Lean-agile structure (Figure 4.2 & 4.3) hypothesizes a priori that (a) responses to the lean-agile performance method can be explained by eight factors: Q(Quality), C(Cost), S(Speed), P(Process Integration), F(Flexibility), I(Innovation), M(Market Sensitivity) and SL(service Level); (b) each item has a nonzero loading on the factor it was designed to measure, and zero loadings on all other factors; (c) the 8 factors are correlated, and (d) the error/uniqueness terms associated with the item measurements are uncorrelated.

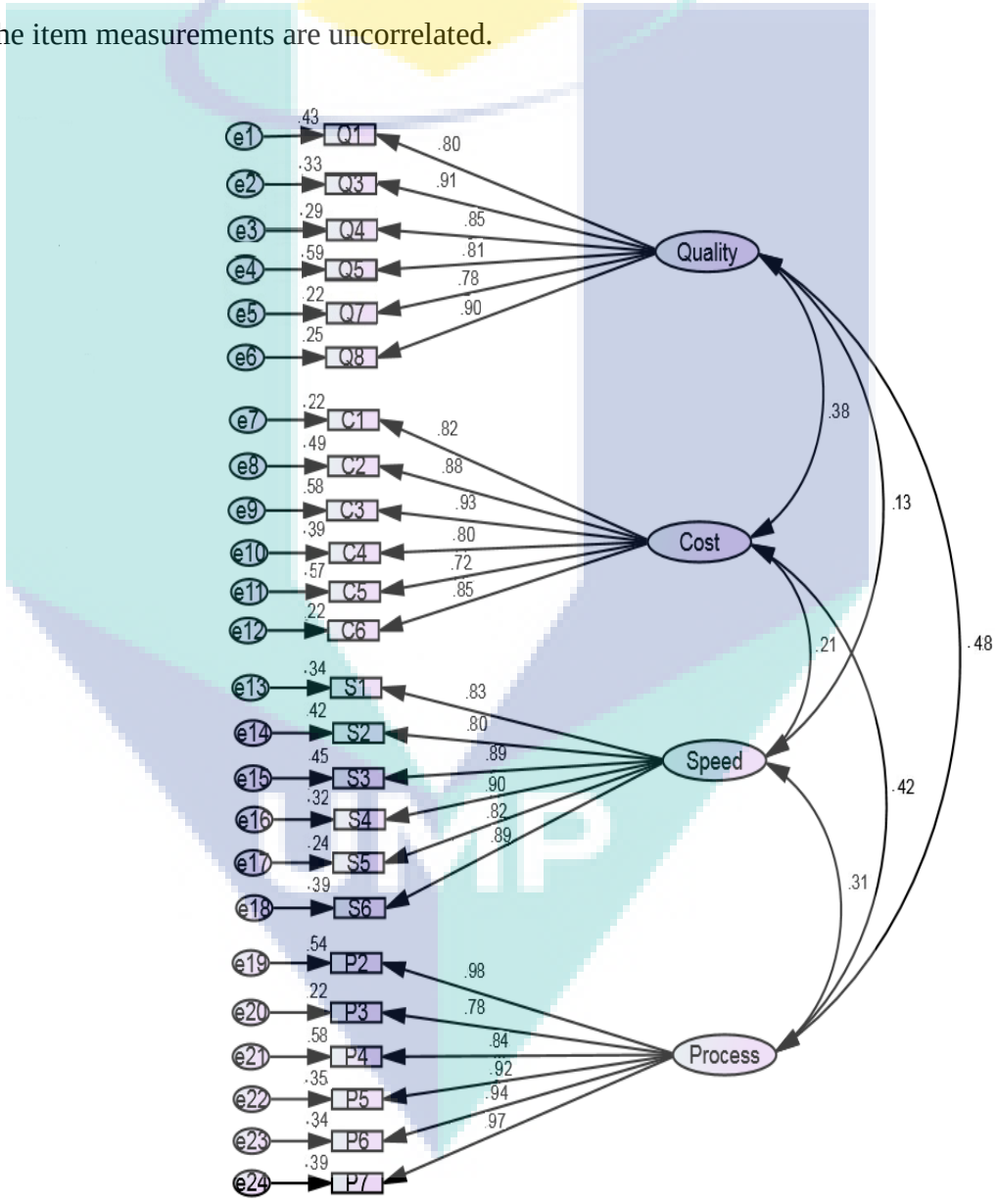

Figure 4.2 Lean First Order Measurement Model

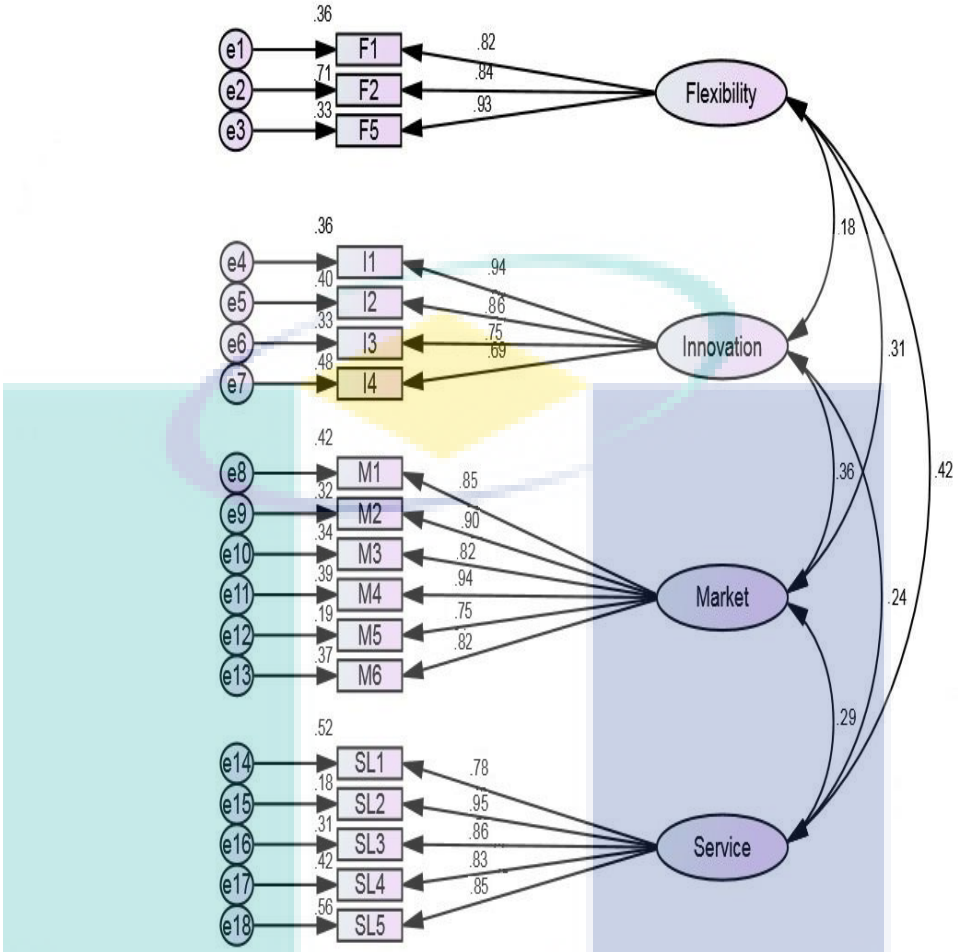

Figure 4.3 Agile First Order Measurement Model

The likelihood ratio test χ^2 for both model fit indicate the admissible threshold for goodness fit with absolute indices of fit (GFI) of .97 and .94 respectively from our model indicate that our hypothesized model fits the sample data fairly well (Li-tze Hu & Bentler, 1981). The complexity (i.e., the number of estimated parameters) of the hypothesized model in the assessment of overall model fit is measured by Parsimony Goodness-of-Fit Index (PGFI). The value of our measurement model PGFI also indicates an admissible threshold as suggested by (Mulaik, Stanley A.; James, Larry R.; Van Alstine, Judith; Bennett, Nathan; Lind, Sherri; Stilwell, 1989). A measure of variation in our hypothesized model is also evident from the comparative fit indices (CFI) pointing at .95 and .99 respectively (Li-tze Hu & Bentler, 1981). The chosen parameter of our model is thus sufficient for population covariance matrix with root mean square error of approximation (RMSEA) values of < 0.05 indicating a good fit (Li-tze Hu & Bentler, 1999) – Table 4.22

Table 4.22 Summary of Model Fit Indices for Lean and Agile

Model	Chi-Square (χ^2)	df	χ^2/df	RMSEA	GFI	IFI	TLI	CFI	PGFI
Lean	420.526	266	1.581	0.031	0.974	0.945	0.954	0.955	0.775
Agile	228.149	129	1.768	0.025	0.940	0.979	0.965	0.998	0.709

4.10 Discussion on Data Analysis

This study employs contingency theory using a factor analysis technique to explain the key factor that would facilitate effective performance of a BPO service operation. The main postulation of the contingency theory is that organization should be responsive to their environmental factor in order to be competitive. To strengthen performance capabilities, this research introduces a measurement framework which incorporates both metric and non-metric in the BPO industry. The reason for this is that when performance measurement are linked with some sort of interdependence, the optimum state of performance level will be achieved.

The researcher argues that when the performance of a service organization are solely dependent on metrics measurement as in the case of previous studies (Cho, Lee, Ahn, & Hwang, 2012), it limit the flexibility and innovative capability. This holds true regardless of whether an outsource activity is kept inside or outside the boundaries of a firm. On this premise, the researcher used items that included flexibility and innovation in the measurement.

For the sake of conciseness, the researcher refer to the BPO activities as all activities a firm performs to establish or strengthen innovative ideas, reduce cost and improve service level at a location outside the firm's home country. Innovation includes both activities which generate new scientific and technological knowledge that can be used to develop new products or new processes. This also include activities which introduce a new product to the marketplace and implement new processes within the firm. Moving further, organization flexibility herein refers to the effectiveness of organizational changes with respect to performance. This is important because a firm's innovative activities may revolve around different stages. These stages typically represent steps in the development process, and may include the general ideas, research,

experimentation, technological development, prototyping, testing, commercialization, and implementation.

The no of items in innovation and flexibility decline simply because the BPO companies work with a predefined performance metrics as evident in the factor loading. This holds true that for BPO companies, the urge to meet up with client's requirement have pushed their innovative consciousness to the background. Innovation is a creative endeavour, which implies that creativity is inherently unpredictable and un-plannable. The implication is that on the long run cost focus strategy (from client's perspective) negatively influence innovation (from BPO Company's perspective). The result of this study alluded to that of Lo (2016) that "firms focusing on cost will minimize the investment of resources in business operations, this, in turn, will lead to difficulties in responding to changing customer's requirements in terms of volume, delivery, and new product".

To enhance performance effectiveness, BPO organizations should ideally strive for zero defects in servicing customers. To a large extent, customer's loyalty depends on rendering quality and responsive service (Kadłubek & Grabara, 2015). Thus, performance measuring instrument should be homogeneous. In this study, the homogeneity of the items in each of the construct attest to the construct validity. Construct validity is "the degree to which instruments truly measure the constructs which they are intended to measure" (Peter, 1981) which oftentimes are divided into two discriminant validity and divergent validity. Churchill (1979) argues that a measuring item is said to pass convergent validity when it correlates highly with other items in the same construct. On the other hand, discriminant validity exists in a measuring item when the items are distinct in nature and are not just simply a reflection of some other items in the same construct. Validity exists in our measurement model because the covariance and the loadings of each item fittingly describe the data when compared to a null model.

Furthermore, the loading of each item were all > .7 to indicate that there were no violation of the assumption of linearity and multi-collinearity (Hair, J. F., Black, W. C., Babin, B. J. and Anderson, 2010). The relationship between a firm's cost efficiency strategy and flexibility performance can be explained from the resource's base theory viewpoint (Awais Ahmad Tipu & A. Fantazy, 2014). Flexibility here denote how BPO

companies should handle multiple dimensions of customer-induced variability, quick response and service quality strategies are believed to positively affect a firm's flexibility performance. This is evident from the factor loading of the items in the construct. The higher the factor loading the higher the degree of correspondence between the variable and the factor. Flexibility also dictate that BPO companies should strive to maintain a flexible working hours for its employees which in turn will leads to a variable cost structure. A variable cost structure will help BPO company to respond to changes in required capacity and does not require heavy investment in assets, thereby making the company more flexible, maintain growth goals while avoiding usual business bottlenecks. Incorporating flexible items in evaluating the performance of a BPO service company helps to retain their entrepreneurial speed and quality, which they would otherwise sacrifice in order to become efficient as they expanded.

A closer look at the correlation coefficient also indicates that (1) cost have high correlation with speed and service level. This indicate that when measuring BPO performance on transaction cost economy perspective, the response rate of service delivery increases in tandem. On the other hand, cost have a very low relationship with innovation. Innovative capabilities are hindered by organizations focusing all resources on cost minimization; (2) cost correlate highly with speed indicate that as much as multinational companies wish to minimize cost, they are also increasing their service response time. This is supported by previous research in the production industry (Gunasekaran et al., 2014). Further, the internal effects of speed have much to do with cost reduction. As organizations process / deliver services to their customer on time, the lower the overhead cost. For BPO companies there are two areas where speed reduces cost (reducing inventories and reducing risks). Inculcating speed as part of performance measurement of a BPO operation will help organizations to anticipate the cost of service recovery, the cost of restocking inventory and anticipate cost of risk. However, calculating the cost of risk is a broad area which is not within the scope of this current study.

Furthermore, previous theories (Gannage, 2009; Tenner & DeToro, 1992) on BPO have opined that 'continuous improvement of agile paradigms cannot be applied to the intangibles of the sector' and with the recent extolling literature on automation it is becoming harder for service industry to adopting agile methodology. However, as the

global economy continue to shift to a service-oriented market there is a pressing need to focus on service performance enhancement of both tangible and intangible sector of the service organization.

CHAPTER 5

CONCLUSION

5.1 Introduction

This chapter summarizes the research findings and provides its relevance to the underlying theories. Secondly, in the summary section of this chapter the researcher discusses how the field data aptly shed more light on the research objectives. Furthermore, the implication section of this chapter highlights the research gap that this piece of study filled and thus its practicability and significance. Lastly, the limitation section provide an insightful area of study that this research could be expanded for future research.

5.2 Summary of Result

It suffices to recapitulate the research questions outlined in chapter one of this study. These questions have served as a guide in shaping the questionnaire development and the method used in arriving at the conclusion of this study.

- To what extent do existing outsourcing theories measure performance?

Existing literature have showed that the costs of operating in a competitive markets are not zero, as is usually assumed by theoretical analysis. TCE emphasizes adaptation of operating cost to the changing nature of the market. On Service Level and Speed, Prahalad and Hamel, aptly remarked "in the long run, competitiveness derives from firms' ability to build, at lower cost and more speedily than their competitors, the core competencies that spawn unanticipated products". The key emphases here is speed and service level. On Flexibility driven through innovation. The researcher extend the argument further that a firm's competitive advantages can be derived from inter-firm

capabilities in the industry network context. This line of reasoning is synonymous to Kostopoulos et al's opinion that intangible resources in the form of highly qualified human capital and the firm's stock of knowledge (explicit or tacit) are necessary strategic resources of any successful organization.

The reviews in this study together with the analysis on employee engagement, alludes to Han, Lee, & Seo, (2008); Law & Ngai, (2008) research which shows that employees are better equipped to perform their daily duties when processes are well communicated to them, when they are part of the process planning and when their contributions are included. Similarly, the feedbacks from the business environment are an important feature to measure performance effectiveness. Baier et al., (2015) observed that "moving beyond the view that costs and benefits of offshoring primarily emerge through impacts on internal (knowledge-related) resources, it is a challenge for organizational features such as changes in managerial complexity and an organization's ability to effectively adapt to changes in the environment". On this premise the researcher further extend Baier's assumption by incorporating the feedback element in the performance measurement model because quality - "Fit for use" in the BPO is contingent on three characteristic, "plan-driven", "problem structuring", and "emergent" which are all element of customer induced variability.

- What is the most important factor to be considered for measuring BPO performance?

The correlation indices indicate that innovation and flexibility should be prioritized when designing performance measurement. The proposed model fit indices also showed that this performance model provides guidance in making an informed decisions when it comes to performance measurement of a BPO and therefore makes an important contribution to outsourcing practice as well. Secondly, the analysis highlighted an important factors to consider for a BPO company to maintain a competitive advantage in cases where the outsource activities whose underlying knowledge is strategic and evolving. These factors include Quality, Cost, Speed, Process Integration, Flexibility, Innovation, Market Sensitivity and Service Level.

The relationship of lean-agile methodologies in measuring performance is carried out through (1) studying the underlying organizational theories that shed light on how the core attributes of each methodology influence performance; (2) testing the

unidimensionality of the construct through total correlations, and reliability estimation using Cronbach's alpha and (3) testing of the relationship between the measurement models.

At the first stage, the researcher performed series of analytical test to test the internal consistency of the items and how each item explain the construct it is meant to measure while significantly different from other items in subsequent construct. At that stage, the researcher wants to found out how a particular item explain the relationship. Items that do not load significantly on a scale and/or have low item reliabilities were dropped. Moving forward, the researcher accesses the unidimensionality through convergence reliability, discriminant validity. Here the researcher is interested to know how a particular item relates to other items in the entire set. Thus each of the items have been put through definite test to and hence could be used to measure performance effectiveness.

5.3 Implications and Suggestion

BPO is a global phenomenon that has changed the way businesses operate and thus leverage their resources toward optimal service realization. Out of the initial 48 items in the questionnaire, only 42 was statistically significant to our study. Thus far, on the basis of our goodness-of-fit results, we could very well conclude that our hypothesized 8-factor measurement model fits the sample data well. The loadings of the items in our construct well fit the hypothesized description of our priori theory as well substantially different from the other factor as in the case of validity (Churchill, 1979). Hence the significance of this study is based on theories and model fit indices of latent variables.

The current growth rate of establishing BPO companies in Malaysia is partly driven by the low cost of labour whereas emerging countries such as Indonesia and Sri Lanka are also becoming a major challenge. Thus, to sustain Malaysia's position as one of the top spot for BPO Company, there is need for organizational adaptability. Organizational adaptability is used here to describe the effectiveness of organizational changes with respect to performance. Since performance is a "journey", policy makers in Malaysia will do well to strengthen existing policies, develop more enabling

processes and implement iterative strategies which focus not only on cost attractiveness but also on innovativeness.

As "performance evaluation" becomes a concept familiar to the practitioners and academicians alike, literature abounds in extolling the benefits of continuous improvement. However, the majority of this extant literature is descriptive, lacking solid theoretical basis. Particularly lacking is a validation of performance framework for BPO companies. In order to narrow this gap, this research work had examines how the interrelationships among the existing theoretical performance framework should be maximized to provide a performance measurement framework for BPO companies in Malaysia. Through the review of academic journals, this study identified different organizational theory and how they relate to BPO. Hence, this study fulfil its objective to develop a novel performance measurement framework for BPO companies with respect to Malaysia.

5.4 Limitation of Study

The limitation of this study are of different degrees but it suffices to enumerate major ones. At the initial stage of this study, the researcher has to sift out many unrelated branches of the supply chain in order to focus and narrow down the problem. This involves series of empirical scrutiny, changing of methods and instrument. However, after getting the direction of the study another problem is the relatively few number of literature on outsourcing performance measurement. This present theoretical challenges because the few literature are pragmatic and confined to software industry without much to the service industry.

Financial constraint is another major challenge for this study. The location of BPO companies in Malaysia is scattered around different geographical region and this makes it extremely difficult to contact many of the companies. In order to overcome this challenges, the researcher depended to a large extent on social media facilities (Facebook, LinkedIn, and e-mail) to facilitate the data collection. This present a huge challenge because it delays the data collection period.

Another limitation of this study is the use of only BPO companies in Malaysia. Given the theoretical and validation technique used, it is believed that the overall

benefit of using the proposed method could be extended to other countries in Asia like India, China and at large to other continent.

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APPENDIX A

Quality Items Reliability Test

	Cronbach's Alpha if Item Deleted
The company compares the performance of employees who perform similar work.(Q1)	.710
The company gives freedom to its employee.(Q2)	.720
The company uses a high proportion of managers and supervisors when compared to other companies.(Q3)	.688
The managers and supervisors use a predefined checklist for performance appraisal.(Q4)	.699
The managers monitor accurately the speed and the schedule that must be accomplished by the agents.(Q5)	.695
The company doesn't have a formal method in the performance appraisal for the purpose of providing feedback to employees(Q6)	.739
The managers directly control the daily activities of the agents.(Q7	.659
The company uses the results of performance appraisal only to assist in employee skill development.(Q8)	.682

Cost Items Reliability Test

	Cronbach's Alpha if Item Deleted
The earning of this company increased from last year.(C1)	.651
This company has achieved the expected level of sales/services.(C2)	.646
The handling time doesn't have bearing on cost performance.(C3)	.631
This company doesn't benefit very much from government financial assistance because many reservations impose upon it which restricts our activities and decisions.(C4)	.609
The financial aid empowers this company to introduce new techniques and adopts advanced work methods, which lead to improving the organizational performance.(C5)	.598
The assistance that this company gets from the government is just financial.(C6)	.716
In general, the performance of this company is much better than the performance of competitors.(C7)	.723

Speed Items Reliability Test

	Cronbach's Alpha if Item Deleted
I consider the completion of my work the most important thing for me.(S1)	.575
The company provides good opportunity and platform to multi-task.(S2)	.547
As much as possible I try to meet all the demands of customers within first 10 min.(S3)	.574
I believe that providing good service and at an appropriate time is something important in my work.(S4)	.562
Escalation of cases to other team affect my processing time.(S5)	.579
Excessive workload doesn't affects my performance rate.(S6)	.626
I am known generally for introducing excellent service to the customer.(S7)	.729

Process Integration Items Reliability Test

	Cronbach's Alpha if Item Deleted
I do not enjoy talking about this company with other people.(P1)	.781
I don't really feel that the company's problems are my problems.(P2)	.647
I help to guide new employees in the company.(P3)	.665
I always offer important information to other colleagues in my section.(P4)	.652
I feel comfortable with the way the manager deal with the problem that influences me even if I could not bear his actions.(P5)	.673
The company provides good compensation for the best employee.(P6)	.670
Customer feedback is cascaded to the team members for the improvement plan.(P7)	.748
I share only approved information with my team members (P8)	.766

Flexibility Items Reliability Test

	Cronbach's Alpha if Item Deleted
The company doesn't allows employees flexible working hours.(F1)	.444
The company sponsor activities outside the company (for example: football, futsal, volleyball competition) in order to build community spirit.(F2)	.408
The company uses cash incentives to motivate employees.(F3)	.706
Cross-functional job activities are not encouraged by the company.(F4)	.634
Information sharing between inter-department is encouraged.(F5)	.620

Innovation Items Reliability Test

	Cronbach's Alpha if Item Deleted
Most of our employees take advantage of government training programs.(I1)	.454
Government training programs doesn't increase employees' abilities to perform their jobs.(I2)	.455
Individual decision is frown upon by the company's management.(I3)	.489
Employees are involved in process improvement plan.(I4)	.434
There is a platform for employee knowledge sharing with others.(I5)	.715

Market Sensitivity Items Reliability Test

	Cronbach's Alpha if Item Deleted
The company's selection practices focus on the compatibility of the individual with the culture of our company.(M1)	.696
When selecting employees, the company evaluate their suitability to the client's requirements.(M2)	.716
Customer's demand doesn't affect our employee selection.(M3)	.712
The company tends to evaluate job applicants based on their ability to do tasks at work directly with less supervision.(M4)	.702
When interviewing applicants, the company mainly evaluate the extent of their ability to work with employees who are currently in the company.(M5)	.748
We Look for the best resources (such as top graduates) in order to get the best talents.(M6)	.702

Service Level Items Reliability Test

	Cronbach's Alpha if Item Deleted
The company is making efforts to introduce new service to enhance customer satisfaction.(SL1)	.606
The company always devises new methods to provide its products and services.(SL2)	.691
The customer rating / survey doesn't reflect the true quality of our service.(SL3)	.658
The Company is significantly interested in the quality of services provided to customers.(SL4)	.643
The company doesn't make a clear effort to please its customers.(SL5)	.607
Customers are satisfied with the performance of this company.(SL6)	.755

APPENDIX B

OLUDAPO, Samson
Postgraduate Research Student,
University Malaysia Pahang,
Faculty of Industrial Management

To whom it may concern:

I would like to thank you for your time to participate in this questionnaire.

I am a research student from the University Malaysia Pahang. My research objective is to develop a performance measurement model for BPO companies in Malaysia.

The questionnaire you are about to participate in is strictly confidential and neither your personal information nor your company information will be made public. To that end, this questionnaire has 2 sections. Section 1 is about the demographics. Section 2 focuses on the existing critical success factor to be considered in performance measurement scale.

Yours Sincerely,
Oludapo Samson O.

SECTION A

The following questions relate to your background and job description.

1) How old are you? Please select your age category

□ 20 – 25 | □ 26 – 30 | □ 31 – 35 | □ 36 – 40 | □ 41 – 45 | □ 46 – 50 | □ 51 – above

2) What is your highest education qualification?

□ High School | □ Diploma| □ Professional Cert. | □Bachelor Degree|□ Master Degree

3) How long have you been working for your current company?

□ 6 months – 1 year | □ 1 – 2 year | □ 3 – 5 years | □ 6 – 10 years | □ above 10 years

4) What is your job function?

□ CEO | □ Manager | □ Supervisor / Team lead | □ Quality Analyst | □ Agent

5) When was your company established?

□ 6 months – 1 year | □ 1 – 2 year | □ 3 – 5 years | □ 6 – 10 years | □ above 10 years

6) In which sector of the business process outsourcing is your company?

□ Banking and financial services | □ Insurance | □ Telecommunications | □ Energy | □ Airline | □ Media and entertainment | □ Procurement | □ Logistics | □ NGO (non-governmental organisation) | □ Government / parastatal | □ Other - please state: _____

SECTION B

Part I: Question 7 – 13

7) The earning of this company increased from last year.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

8) This company has achieved the expected level of sales/services.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

9) In general, the performance of this company is much better than the performance of competitors.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

10) This company doesn't benefit very much from government financial assistance because many reservations impose upon it which restricts our activities and decisions.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

11) The financial aid empowers this company to introduce new techniques and adopts advanced work methods, which lead to improving the organizational performance.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

12) The assistance that this company gets from the government is just financial.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

13) The handling time doesn't have bearing on cost performance.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

Part II: Question 14 – 20

14) I consider the completion of my work the most important thing for me.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

15) I am known generally for introducing excellent service to the customer.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

16) As much as possible I try to meet all the demands of customers within first 10 min.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

17) I believe that providing good service and at an appropriate time is something important in my work.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

18) Escalation of cases to other team affect my processing time.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

19) Excessive workload doesn't affects my performance rate.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

20) The company provides good opportunity and platform to multi-task.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

Part III: Question 21 – 27

21) I do not enjoy talking about this company with people from outside.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

22) I don't really feel that the company's problems are my problems.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

23) I help to guide new employees in the company.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

24) I feel comfortable with the way the manager deal with the problem that influences me even if I could not bear his actions.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

25) The company provides good compensation for the best employee.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

26) I share only approved information with my team members.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

27) Customer feedback is cascaded to the team members for the improvement plan.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

Part IV: Question 28 – 32

28) The company doesn't allows employees flexible working hours.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

29) The company sponsor activities outside the company (for example: football, futsal, volleyball competition) in order to build community spirit.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

30) The company uses cash incentives to motivate employees.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

31) Cross-functional job activities are not encouraged by the company.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

32) Information sharing between inter-department is encouraged.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

Part V: Question 33 – 39

33) Most of our employees take advantage of government training programs.

□Strongly agree | □Agree | □Neither agree nor disagree | □Disagree | □Strongly disagree

34) There is continual coordination among this company and government institutions concerning global business development and training.
□Strongly agree | □Agree | □Neither agree nor disagree | □Disagree | □Strongly disagree

35) Government training programs doesn't increase employees' abilities to perform their jobs.
□Strongly agree | □Agree | □Neither agree nor disagree | □Disagree | □Strongly disagree

36) Individual decision is frown upon by the company's management.
□Strongly agree | □Agree | □Neither agree nor disagree | □Disagree | □Strongly disagree

37) Employees are involved in process improvement plan.
□Strongly agree | □Agree | □Neither agree nor disagree | □Disagree | □Strongly disagree

38) There is no clear reflection of government policy on our company's: services, production, sales, and annual revenues.
□Strongly agree | □Agree | □Neither agree nor disagree | □Disagree | □Strongly disagree

39) There is a platform for employee knowledge sharing with others.
□Strongly agree | □Agree | □Neither agree nor disagree | □Disagree | □Strongly disagree

Part VI: Question 40 – 47

40) The company compares the performance of employees who perform similar work.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

41) The company gives freedom to its employee.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

42) The company uses a high proportion of managers and supervisors when compared to other companies.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

43) The managers and supervisors use a predefined checklist for performance appraisal.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

44) The managers monitor accurately the speed and the schedule that must be accomplished by the agents.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

45) The company doesn't have a formal method in the performance appraisal for the purpose of providing feedback to employees.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

46) The managers directly control the daily activities of the agents.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

47) The company uses the results of performance appraisal only to assist in employee skill development.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

Part VII: Question 48 – 53

48) The company is making efforts to introduce new service to enhance customer satisfaction.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

49) The company always devises new methods to provide its products and services.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

50) The customer rating / survey doesn't reflect the true quality of our service.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

51) The Company is interested in the quality of services provided to customers significantly.

□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

52) The company doesn't make a clear effort to please its customers.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

53) Customers are satisfied with the performance of this company.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

Part VIII: Question 54 – 59

54) The company's selection practices focus on the compatibility of the individual with the culture of our company.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

55) When selecting employees, the company evaluate their suitability to the client's requirements.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

56) Customer's demand doesn't affect our employee selection.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

57) The company tends to evaluate job applicants based on their ability to do tasks at work directly with less supervision.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

58) When interviewing applicants, the company mainly evaluate the extent of their ability to work with employees who are currently in the company.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

59) We Look for the best resources (such as top graduates) in order to get the best talents.
□ Strongly agree | □ Agree | □ Neither agree nor disagree | □ Disagree | □ Strongly disagree

Appreciation:

Finally, I thank you very much for your time and the insights you have given through your response to the questions above.

If you have any additional questions, please do not hesitate to contact me.

Thank you for your unreserved co-operation

Yours Sincerely,

Oludapo Samson O.

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