OUTSOURCING SUCCESS: DETERMINING ITS CRITICAL MANAGERIAL FACTORS IN SERVICES INDUSTRY.

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ABSTRACT

Outsourcing is gaining increasing importance as a form of business collaboration. Outsourcing in the services sector involves transferring total or partial ownership of performing the business activity(ies) to a vendor(s). To ensure the success of outsourcing, the integration of the tasks between the firm and the vendor must be well and efficiently managed. The purpose of this study is to identify the factors that need to be managed in the process of integration of outsourcing tasks.

This study identified that managing organizational dependency and governance in the process of the exchange of resources are the most fundamental aspects of outsourcing success. Accordingly, managing organizational dependency is examined through the Resource Dependency Theory, while governance in the exchange of resources is viewed from the perspective of the Social Exchange Theory. Degree of outsourcing, vendor management capability and vendors' service performance are identified as factors that have a direct impact on outsourcing success in services. This study also tests the effects of the magnitude of the partners' compatibility and partnership quality in the collaborative business, on 'outsourcing success'. Cross-sectional data is collected through a survey of managers in the banking and hotel sectors in Sri Lanka using self-administered structured questionnaires. A total of 207 usable responses are collected. Structural Equation Modelling (SEM) is used to analyse the survey responses.

The findings of this research confirmed that dependency and exchange are crucial aspects that need to be managed in services outsourcing, as they constitute 95 per cent of the success. The degree of outsourcing is determined by the level of breadth and level of depth, of which only the former significantly affects the success of outsourcing. The empirical evidence also verified that the influence of contractual governance on outsourcing success is higher when the partners' compatibility and/or partnership quality is higher.

This research has contributed to the area of strategic service supply chain management. This study contributes to the body of knowledge as it provides validated measurement constructs for outsourcing success in the services sector. The present study adapted the INDSERV scale developed by Gounaris (2005a) to measure vendors' service performance, and it found that the scale should be localized in future research. In addition, the empirical verification of the moderating roles of partners' compatibility and partnership quality are the main contributions to the theory. The influence of partnership quality and partners' compatibility on contractual governance is different. This raises several managerial implications. Maintaining a higher level of partners' compatibility is more important than partnership quality for the focal firm as it minimizes the efforts of vendor management activities. In contrast, a higher level of partnership quality becomes more important than partners' compatibility for vendors as it enhances the impact of vendors' service performance on outsourcing success. As a whole, the identification of prominent managerial factors, which are related to outsourcing success, allow all the service industry stakeholders to plan, execute and assess the outsourcing function as a collaborative business practice that ensures the mutual benefits as well as mutual survival.

ABSTRAK

Penyumberan luar semakin semakin penting sebagai satu bentuk kerjasama perniagaan. Penyumberan luar dalam sektor perkhidmatan melibatkan pemindahan pemilikan keseluruhan atau sebahagian daripada aktiviti perniagaan kepada penjual. Integrasi tugas antara firma dan penjual mestilah diuruskan dengan cekap untuk memastikan kejayaan penyumberan luar. Tujuan kajian ini adalah untuk mengenal pasti faktor-faktor yang perlu diuruskan dalam proses integrasi tugas penyumberan luar.

Kajian ini mengenal pasti bahawa pengurusan pergantungan organisasi dan pentadbiran dalam proses pertukaran sumber adalah aspek yang paling asas untuk kejayaan penyumberan luar. Pengurusan kebergantungan organisasi dikaji melalui Teori Kebergantungan Sumber, manakala pentadbiran dalam pertukaran sumber dilihat daripada perspektif Teori Pertukaran Sosial. Tahap penyumbaran luar, keupayaan pengurusan penjual dan prestasi perkhidmatan penjual dikenal pasti sebagai faktor-faktor yang mempunyai kesan langsung kepada kejayaan perkhidmatan penyumberan luar. Kajian ini juga menguji kesan magnitud keserasian rakan kongsi dan kualiti perkongsian di dalam perniagaan kerjasama ke atas kejayaan penyumberan luar. Data rentas keratan dikumpul melalui borang soal selidik berstruktur yang diedarkan kepada pengurus yang bekerja di dalam sektor perbankan dan hotel di Sri Lanka. Sejumlah 207 borang soal selidik yang boleh digunakan telah dikumpul. Permodelan Persamaan Struktur (SEM) digunakan untuk menganalisis jawapan kajiselidik.

Dapatan kajian mengesahkan bahawa pergantungan dan pertukaran adalah aspek penting yang perlu diuruskan dalam perkhidmatan penyumberan luar kerana kedua faktor ini meyumbang 95 peratus kepada kejayaan pentumbaran luar. Tahap keluasan dan tahap kedalaman adalah dua elemen yang menentukan tahap penyumberan luar. Hanya elemen tahap keluasan dikenal pasti menjejaskan kejayaan penyumberan luar.

Bukti empirikal juga mengesahkan bahawa pengaruh pentadbiran urusan kontrak kepada kejayaan penyumberan luar adalah lebih tinggi apabila keserasian rakan kongsi adalah tinggi.

Penyelidikan ini telah menyumbang kepada perkhidmatan strategik pengurusan rantaian bekalan. Secara teorinya, kajian ini menyumbang kepada badan ilmu pengetahuan kerana ia menyediakan konstruk pengukuran yanng disahkan untuk kejayaan penyumberan luar dalam sektor perkhidmatan. Kajian ini merubah skala INDSERV yang dicipta oleh Gounaris (2005a) untuk mengukur prestasi perkhidmatan penjual dan didapati bahawa skala seharusnya diubah mengikut konteks setempat di dalam penyelidikan yang akan dilaksanakan di masa depan. Di samping itu, pengesahan empirik peranan keserasian rakan kongsi dan kualiti perkongsian sebagai faktor yang mengubah kejayaan penyumberan luar adalah sumbangan utama kepada teori. Pengaruh kualiti perkongsian dan keserasian rakan kongsi terhadap pentadbiran pengurusan kontrak adalah berbeza dan ini menimbulkan beberapa implikasi pengurusan. Mengekalkan tahap keserasian rakan kongsi yang tinggi adalah lebih penting daripada kualiti perkongsian bagi firma kerana ia mengurangkan usaha aktiviti pengurusan vendor. Sebaliknya, tahap kualiti perkongsian yang lebih tinggi menjadi lebih penting daripada keserasian rakan kongsi untuk penjual kerana ia meningkatkan kesan prestasi perkhidmatan penjual terhadap kejayaan penyumberan luar. Secara keseluruhannya, pengenalpastian faktor-faktor pengurusan yang berkaitan dengan kejayaan penyumberan luar membolehkan semua pihak yang mempunyai kepentingan dalam industri perkhidmatan merancang, melaksana dan menilai fungsi penyumberan luar sebagai amalan perniagaan kerjasama yang memastikan faedah bersama.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The contribution from the service industry to the world's economy is flourishing and becoming dominant. However, increasing globalization, technological advancements, and increased customer expectations create complex market structures and tighten competition in the marketplace. These factors have made the sustainability of firms more challenging than ever. Organisations that survive, adapt the best practices in order to maximize the usage of their existing resource base. However, more often than not, this proves to be inadequate, as organizations cannot possibly acquire all the resources they require. One way around this problem is to share external resources (Hessels and Terjesen, 2010).

Collaboration between firms enhances their respective competitiveness and develops their resource bases (Al-Natour and Cavusoglu, 2009), which can be in the form of strategic alliances, mergers, partnerships or outsourcing. It is imperative that any form of collaboration relies on the strength of the members' relationship beyond traditional purchasing. In this context, outsourcing has been identified as a strategy that is capable of achieving both operational and strategic objectives for sustainable development in modern business settings (Fixler and Siegel, 1999; Petersen *et al*., 2008; Li and Choi, 2009; Lacity *et al*., 2009).

Outsourcing is defined as the transfer of responsibility of performing internal business activities and processes to an external party (Lee, 2001; Kotabe and Mol, 2009; Li and Choi, 2009; Kroes and Ghosh, 2009; Donada and Nogatchewsky, 2009). However, the outsourcing of services involves a structural change, in which an agent acts as the

service provider in delivering the service to the end customer (Lam and Han, 2005; Li and Choi, 2009; Banerjee and Williams, 2009). This is the most significant difference between the service sector and the manufacturing sector practice of outsourcing.

Outsourcing, in general, is claimed as a strategic tool that enhances organisational performance (Fixler and Siegel, 1999; Lee, 2001; Domberger *et al*., 2002; Kakabadse and Kakabadse, 2003 Espino-Rodrı´guez and Padro´n-Robaina, 2004:2005a; Gewald *et al*., 2006; Li and Choi, 2009; Cusmano *et al*., 2009; Zhang *et al*., 2009; Ozcelik and Altinkemer, 2009; Lacity *et al*., 2009). Regardless of the claim, it is still riddled with uncertainties, such as confidentiality leaks (Lansdale and Cox, 1997; Dyer, 1997; Li and Choi, 2009), unexpected costs (Kumar and Eickhoff, 2005; Belcourt, 2006), quality issues (Young 2008; Carr *et al*., 2008; Li and Choi, 2009), loss of mutual trust (Lee, 2001; Marshall *et al*., 2007; Han *et al*., 2008; Young, 2008; Cui *et al*., 2009), and the termination of the contract before the agreed period (Lam and Han, 2005; Young, 2008; Jean *et al*., 2008). These issues are common to the service sector as well. Despite the existence of these weaknesses, there are still ways to manage the outsourcing function to avoid these issues. Consequently, the focus of recent academic research interest has been on the examination of the different managerial factors of outsourcing function. For example, investigations on critical success factors (Whipple and Frankel, 2000; Ogden, 2006; Rajabzadeh *et al*., 2008; Banerjee and Williams, 2009; Cusmano *et al*., 2009), outsourcing agility (Young, 2008; Kroes and Ghosh, 2009; Liou and Chuang, 2010), and outsourcing structural dimensions (Gilley and Rasheed, 2000; Espino-Rodrı´guez and Padro´n-Robaina, 2004; Marshall *et al*., 2007; Thouin *et al*., 2009) have been carried out widely.

The factors discovered by the above studies are dispersed among the functional, behavioural and relational requirements in outsourcing. Furthermore, certain factors

identified in the studies are common requirements in general management. For instance, ‘top management commitment’ and ‘better communication’ are fundamental practices in business. However, Li and Choi (2009) recognized the outsourcing of services as a structural change of performing a task. Even though, this structural variation may require identifying unique factors that are needed to be managed in services outsourcing, it has not been successfully integrated and addressed in previous literature. Therefore, this study focuses on identifying factors that influence the success of outsourcing, specifically, in the context of services. In relation to the purpose of this study, several gaps were identified in the existing epistemology, described below.

First, as far as the nature of services is concerned, interaction among the focal firm (i.e. main service provider), vendor and customer is required to produce and deliver a service. This is known as the triadic relationship. The lack of connection between actors in the triad is denoted as a ‘structural hole’ (Burt, 2002:2004; Li and Choi, 2009). The ‘structural hole’ is recognized as one of the central causes that demolish outsourcing contracts. Thus, Li and Choi (2009) perceived the focal firm as the bridge connecting both the vendor and the customer. This bridge needs to employ a proper vendor management system for subsequent and continuous interaction. The subsequent and continuous interaction is further enriched by the deployment of social capital (Li and Choi, 2009; Bernardes, 2010). This is widely tested and commonly denoted as partnership quality or relationship quality in the outsourcing literature. However, having a proper vendor management system and the deployment of social capital does not guarantee the success of outsourcing. Specifically, the vendor becomes a key executor of managing the outsourcing function, as he is fully or partially acting as the focal firm in delivering the service to the end customer. This places a direct responsibility on the vendor to manage the service function successfully as specified by the contract. However, the direct responsibility of the vendor in the service delivery is not integrated

with the total responsibility of managing the outsourcing function and its influence on the success has not been empirically tested in the previous literature.

Next, it is also commonly recognised that the match between partners (Bettis *et al*., 1992; Shamdasani and Sheth, 1994; Whipple and Frankel, 2000; Wasti *et al*., 2006; Selviaridis *et al*., 2008) is a critical success factor in the business-to-business (B2B) context. This denotes the compatibility of partners. Compatibility in tangible resources is easier to assess than it is for intangible resources, making it easier to determine the vendor's compatibility in the manufacturing sector than in the services sector. Many studies (e.g. Shamdasani and Sheth, 1994; Whipple and Frankel, 2000; Jean, Sinkovics and Kim, 2000; Roh *et al*., 2008) noted that compatibility of partners as a variable determines the potential alignment of partners to conduct joint business. Largely, it has been discussed in terms of organisational culture (Harrigan 1985; Lam and Han, 2005; Whipple and Frankel 2000; Roh *et al*., 2008). Next, compatibility of core competencies is also highlighted as another basic requirement of a collaborative business success (Skinner, 1966; Espino-Rodríguez and Padrón-Robaina, 2005a; Wu and Park, 20092009; Jarvenpaa and Mao, 2008; Kroes and Ghosh, 2009). For example, the impact of information technology (IT) compatibility is identified as a crucial element for the outsourcing success of information systems (Bettis *et al*., 1992; Lee, 2001; Tallon, 2008). In this case, firms may observe the IT resource capability of the vendors at the stage of vendor selection, as it provides an opportunity to perform an objective assessment. Despite the physical examination, it is questionable, as to what extent non-physical factors (e.g. culture, competencies) can be accurately assessed prior to working together. Indeed, these assessments are limited. The actual behaviour is becoming an experience which can only be seen after the contract is executed. As an example, the real management philosophy of the vendor can only be observed once they start to work with the firm. The issue becomes critical in services, as most of the resources are

intangible and attached to human capabilities, such as, skills and knowledge. Culture is one of the elements that shape human action/behaviour. Therefore, the human resource holds attributes of its culture. Although vendor's compatibility cannot be entirely assessed at the initial stage of selection, its influence matters throughout the outsourcing process. It is empirically proven that the partners' compatibility is imperative to the success of an alliance (Shamdasani and Sheth, 1994; Liou and Chuang, 2010). It is also commonly accepted that a compatible business partner could contribute more to the partnership compared to a less compatible business partner (Shamdasani and Sheth, 1994; Whipple and Frankel, 2000). This means that the level of compatibility of the chosen vendor is indirectly proportional to the success of outsourcing. The link is largely absent in the existing literature. Thus, this study wishes to oversee the indirect role of partners' compatibility in the context of the services outsourcing.

Third, Kotabe *et al*. (2008), and Kotabe and Mol (2009) discovered that the firms' profitability has a negative curvilinear relationship with sourcing alternatives. Thus, they proposed to balance sourcing levels (i.e. in-source and outsource), due to the fact that it accumulates negative consequences after it passes the optimal point. However, Fixler and Siegel (1999), Gilley and Rasheed (2000), and Thouin *et al*. (2009) reported that the magnitude of organisational performance is positively correlated to the magnitude of outsourcing in the manufacturing sector. With regards to services, the findings of Espino-Rodríguez and Padrón-Robaina (2004) are also aligned with a positive linear relationship. Cook and Yamagishi (1992) proposed that exchanges proceed towards an equilibrium point, where partners depend equally upon each other for valued resources. Although different firms may have different optimal levels, it is not known what elements are significant for the determination of the optimum level of outsourcing. These confusing arguments led to the identification of determinants of the degree of outsourcing. Poppo and Zenger (1998), and Gilley and Rasheed (2000)

identified the degree of outsourcing as a multiplied variable of 'breadth' and 'depth'. Breadth refers to the number of activities outsourced in the firm while depth is denoted as the portion of the value of each activity outsourced. Thus, it is crucial to identify whether the level of breadth or level of depth is more important for the determination of the degree of outsourcing particularly in the context of services. It is also answering to the question of which level of outsourcing brings the optimal success. For example, 'low breadth high depth outsourcing' or 'high breadth low depth outsourcing' contributes more to the outsourcing success.

Concisely, the current study addresses three research gaps that influence the service sector's outsourcing success. The study emphasizes the uniqueness of outsourcing services and assigns the dual responsibility for managing the outsourcing function to the vendor, in addition to the focal firm. Then, the role of partners' compatibility and the impact of different levels of degree of outsourcing on outsourcing success are identified as the areas that need further investigation. The following section explains the fundamental aim of the study.

1.2 PROBLEM STATEMENT

The service industry is advancing all over the world. As a result the competition among service firms is also rising. To be an 'order winner' in the industry, firms have to offer competitive services (Barney, 1991). Outsourcing is recognized as a strategy of bundling expertise knowledge that offers a competitive edge. Despite this common reliance on outsourcing, the existing literature on the subject is rather scarce (Sun *et al*., 2002; Donada and Nogatchewsky, 2009).

Services outsourcing differs from manufacturing outsourcing as it involves the exchange of intangible goods (Li and Choi, 2009), is performed simultaneously, and is bidirectional (Sampson, 2000). However, its outcome is less clear (Fixler and Siegel, 1999), making it difficult to quantify (Gounaris, 2005). Uncertainty in output is higher in services (Senguptha *et al*., 2006), as the final customer determines the quality, which may vary from customer to customer (Gounaris, 2005; Young, 2008; Li and Choi, 2009). The uncertainty in demand is also higher in services (Zhang *et al*., 2009). As a whole, it is more difficult to manage outsourcing in the services sector than in the manufacturing sector.

As far as the business-to-business (B2B) context is concerned, only a few studies (e.g. Jean *et al*., 2006; Han *et al*., 2008; Lacity *et al*., 2009) have been devoted to identifying the critical managerial factors in outsourcing. Specially, detailed empirical investigations into the identification of critical managerial factors related to B2B aspects in services sector have not been conducted. Thus, this study aims to carry out an empirical investigation on critical managerial factors related to B2B context, affecting the services sector outsourcing success.

The factors affecting outsourcing success are twofold, some beyond organisational control, while others are controllable. Market uncertainty (Gilley and Rasheed, 2000; Espino-Rodríguez and Padrón-Robaina, 2004; Kotabe and Mol, 2007; Jean *et al*., 2008; Banerjee and Williams, 2009), market thickness (Dyer, 1997; Li and Choi, 2009; De Vita *et al*., 2010) and anticipated rivalry (Lahiri *et al*., 2009) are confirmed to be beyond the primary control of the organisation. These aspects will be excluded from this study.

The controllable factors that affect the success of outsourcing are organisational resource capability (Lee, 2001; Han *et al*., 2008), vendor management capability (Lee, 2001; Chan and Chin, 2007; Han *et al*., 2008), asset specificity (Wang, 2002; Zhang *et*

al., 2009; De Vita *et al*., 2009), organisational culture (Lam and Han, 2005; Jarvenpaa and Mao, 2008; Young, 2007:2008; Jean *et al*., 2008) and partnership/relationship quality (Dyer, 1997; Lee, 2001; Marshall *et al*., 2007; Han *et al*., 2008; Cui *et al*., 2009; Zhang *et al*., 2009).

The organisational resource capability (Han *et al*., 2008; Ozcelik and Altinkemer, 2009) and assets specificity (Vining and Globerman, 1999; Gonzalez-Diaz *et al*., 2000; Saussier, 2000; Hubbard, 2001; Leiblein *et al*., 2002) are the determinants of the degree of outsourcing of the firm; having no direct impact on success. Additionally, organisational culture explains the business pattern and passion of a particular firm, and hence determining partners' compatibility in outsourcing.

Among the factors mentioned above, the importance of vendor management capability and partnership quality is widely recognized. Unlike outsourcing in the manufacturing sector, the vendor bears co-responsibility in outsourcing in the service sector. Therefore, vendor's service performance has a direct impact on outsourcing success (Li and Choi, 2009; Carr *et al*., 2006; Young, 2008). In addition to that, the present study identified the degree of outsourcing as a determinant to outsourcing success. The impact of depth and breadth on outsourcing success needs further investigation. Accordingly, this study added that the degree of outsourcing and 'vendor's service performance' are critical determinants of success.

It is also noted that the role of partner's compatibility on the success of the outsourcing of services needs further investigation. The notion of partners' compatibility is perceived as the ability to plan and work together (Whipple and Frankel, 2000). The partners' compatibility is activated once the collaboration begins. For example, Liou and Chuang (2010) measured 'compatibility in operational flexibility' in terms of the extent to which the vendor is capable of adapting to abnormal situations. The

compatibility of partners has a strategic value to the influence of activities, abilities and orientations of outsourcing on its success (Shamdasani and Sheth, 1994). Based on the argument developed above, this study seeks to examine the indirect influence of partners' compatibility on outsourcing success.

In short, this study outlines vendor management capability, vendor's service performance, degree of outsourcing, partnership quality and partners' compatibility as the most significant manageable factors in outsourcing in the service sector.

The identification of appropriate underpinning theory(ies) helps in the proper deduction (Watjatrakul, 2005; Bryman and Bell, 2007; Marshall *et al*., 2007) of the aforementioned variables. Therefore, the following section attempts to identify the appropriate underpinning theory(ies), in order to provide a theoretical foundation to this research.

1.3 RESEARCH THEORETICAL UNDERPINNING

In a more conventionalist perspective, Thomas Kuhn (1970a) introduced the paradigm of scientific knowledge in research (cited: Johnson and Duberley, 2000). This refers to the fact that certain theories are unable to solve current societal issues, requiring researchers to develop new theoretical overviews. In relation to the theories applied in the outsourcing literature, many drawbacks have resulted due to the limitations of their explanatory scope. For example, the majority of previous studies applied transaction cost economies (TCE), resource based view (RBV) or knowledge based view (KBV).

Some examples of detraction and criticisms of TCE are its failure to recognise corporate capabilities (Holcomb and Hitt, 2007), the ignorance of other aspects of organisational behaviour (Espino-Rodríguez and Padrón-Robaina, 2005a), and the failure to analyse

broader perspectives of outsourcing. Moreover, TCE's approach is incompatible within highly uncertain environmental conditions (Williamson, 1979; Kotabe and Mol, 2009).

The resource based view (RBV) mitigates the weakness prevalent in TCE and considers a firm's specific characteristics, such as its resource capability and competencies. Barney (1991), and Wu and Park (2009) explained that the RBV mainly focuses on evaluating the capability of internal resources to produce profits and compete. Some scholars, however, perceived that the TCE and RBV complement each other (Marshall *et al*., 2007), while others viewed them as interconnected approaches that strengthen one another (Leiblein, 2003). Burrell and Morgan's (1979) explanation on the meta-theoretical assumptions of social science revealed that RBV is limited to positivist realism, as it ignores the aspect of human behaviour. For instance, RBV perceives the human element as another strategic resource, and has withdrawn the interpretation on behavioural elements, such as that the behaviour could be either 'determinism' or 'voluntarism'. The knowledge based view (KBV) is an emerging research domain in the field of information system outsourcing. The KBV considers the core competency of a firm as knowledge (Kroes and Ghosh, 2009) that accumulates value for the organisation in the modern information era. Additionally, organisations are engaging in a constant learning process for continuous improvement that ensures and enhances their competitive edge. Thus, in outsourcing, firms use the knowledge of an external body to generate a competitive advantage (Kroes and Ghosh, 2009). Sharing information, mutual learning, joint decision-making and knowledge sharing (implicit and explicit) are key characteristics of KBV. It considers knowledge as the fundamental resource focusing on improving competitiveness, making it highly applicable for knowledge based firms.

However, the boundary between TCE and RBV is not exact or deterministic, and these aspects address two different issues in the firm (Marshall *et al*., 2007). Marshall *et al*. (2007) explained that TCE addresses 'why firms exist' and RBV addresses 'why firms differ in practices'. The KBV is widely applied in evaluating the outcomes of information systems outsourcing rather than those of general outsourcing. However, all three paradigms (TCE, RBV, and KBV) have specific orientations on outsourcing outcomes, and do not provide a holistic picture of the context. Outsourcing is not merely an outcome, but it represents a system, including inputs, processes, and outcomes, and is also influenced by task environmental factors. Understanding the outsourcing context as a system which provides answers to many questions. There are three basic questions related to the inputs: (1) Why do organisations outsource? (2) What do they outsource? and (3) who is the vendor?

The resource dependency theory (RDT) provides background information for oversee these questions. The primary objective of management is to create a stable internal environment to deal with uncertain external environments. Therefore, organisations are embedded with a network of exchange relationships in order to cope with uncertainties in the external environments (Petersen *et al*., 2008). As a result, firms depend on other firms for survival (Pfeffer and Salancik, 1978). Organizational survival becomes challenging when they lack the resources to perform competitively. In such situations, they rely on external resources to accelerate their activities. According to the resource dependency theory, outsourcing is identified as an adoption of the required resources from an external party (Liou and Chuang, 2010) to perform internal business activities, and thereby face external environmental uncertainties (Barney, 1999; Kedia and Lahiri, 2007; Petersen *et al*., 2008).

Second, outsourcing deals with managing organisational dependency (Petersen *et al*., 2008; Pfeffer and Salancik, 1978). Basically, service supply happens directly and in real time, and, hence, the firms should delegate the appropriate power to the vendor to maintain service quality. This simultaneously determines the level of the firm's dependency on external resources and their leverage. Thus, managing dependency becomes the organisational choice of adjustment of power (Pfeffer, 2003), while power asymmetry creates negative consequences (Heide and John, 1990). The 'depth of outsourcing' and the 'breadth of outsourcing' are tools that adjust the organisational power of outsourcing. These two decisions are fundamental and complex. First, firms must understand the capabilities of internal resources and thereby outline the activities that require support from external resources, which is denoted as breadth (Lonsdale and Cox, 1998; Li and Choi, 2009 and Mc Ivor, 2000). Then, the appropriate level of external party involvement should be decided based on vendor's resource capability, which is known as depth (Carr *et al*., 2006; Petersen *et al*., 2008; Gilley and Rasheed, 2000). These basic decisions are imperative to services, as the vendor needs considerable autonomy on service delivery, while the focal firm needs to maintain its dependency for a successful partnership.

The success of the partnership becomes a matter of strategic fit between participants. RDT assumes that organisations make active choices to achieve their respective objectives (Pfeffer and Salancik, 1978; Hessels and Terjesen, 2010). Thus, managers have to carefully determine the nature of the vendor(s) that they intend to collaborate with (Shamdasani and Sheth, 1994; Whipple and Frankel, 2000; Senguptha *et al*., 2006; Jarvenpaa and Mao, 2008; Liou and Chuang, 2010). A compatible partner supports the notion of complementary dependency (Al-Natour and Cavusoglu, 2009; Hessels and Terjesen, 2010). A higher level compatibility will accumulate more positive gains for the partnership than a lower level compatibility. Based on this argument, the present

study perceives that the higher the partners' compatibility is, the stronger will be the complementary dependency, and therefore, will provide more value to the collaboration.

However, RDT holds the mechanisms for inter-organisational exchange and governance. Theories such as resource dependence and social network utilize ideas from the Social Exchange Theory (SET) (Petersen *et al*., 2008; Al-Natour and Cavusoglu, 2009; Li and Choi, 2009), which place heavy emphasis on governance in exchange.

SET discusses governance in a bilateral resource exchange (Lawler, 2001; Cook and Rice, 2003). Managing inter-firm bilateral exchanges are twofold (Cook and Rice 2003; Ferguson *et al*., 2005; Zafirovski, 2005). These are negotiated and reciprocal exchange. Negotiated exchange represents contractual governance, with each party having its own responsibilities for mutual benefits (Marshall *et al*., 2007; Han *et al*., 2008; Park-Pops and Rees, 2010; Byramjee *et al*., 2010). In this case, the vendor is responsible for delivering the agreed service to the client, while the focal firm is responsible for carrying out a sufficient level of vendor management activities. The success of the exchange depends on the fulfilment of each respective party's role. Relational governance represents a set of norms developed over a period of time (Ferguson *et al*., 2005, p. 221). It emphasizes mutual co-operation for mutual benefits (Cook and Rice, 2003; Zafirovski, 2005) and covers soft issues in managing relationships (Lacity *et al*., 2009). As previously mentioned, the relational governance represents partnership quality characteristics, which is contingent upon each other's behaviour. Therefore, SET perceives the nature of human behaviour as situational (i.e. determinism).

SET further assumes that the satisfaction of an actors' preferences become the prime mover of exchanges (Cook, 1990, p. 115). Thus, the existence and continuation of exchange is influenced by the satisfaction of the selected partner. The exchange is deemed successful when the partners are suitably matched to each other (Whipple and

Frankel, 2000). Outsourcing efforts collapse due to the incompatibilities between the client firm and the vendor (Shamdasani and Sheth, 1995; Lam and Han, 2005; Liou and Chuang, 2010). This is largely due to the fact that compatibility attributes are only fully evident during the exchange process.

Based on the facts, the applicability of the resource dependency theory and the social exchange theory are found to be mutually complementary (Al-Natour and Cavusoglu, 2009) in identifying the critical managerial factors in outsourcing. Both theories promote collaboration with compatible partners for inter-dependency and mutual survival. Based on the theoretical highlights, the study has derived three research questions, which will be presented in the next section.

1.4 RESEARCH QUESTIONS

Research Question 1

To what extent does organisational dependency impact on the success of outsourcing in service firms?

The most important factor highlighted by RDT is success as a matter of managing power and dependency (Pfeffer and Salancik, 1978; Li and Choi 2009; Hsiao *et al*., 2010; De Vita *et al*., 2010). As previously explained, organisations have to determine the appropriate level of outsourcing, as it directly influences outcomes (Gilley and Rasheed, 2000; Espino-Rodríguez and Padrón-Robaina, 2004; Kotabe and Mol 2007; Hessels and Terjesen, 2010).

The focal firm's capabilities and resources determine the best sourcing (i.e. in/out source) decisions (Barney, 1999). Determining the appropriate level of outsourcing is a

structural decision taken by managers. They initially decide which activities need to be outsourced (breadth), along with the intensity of the power assigned to the vendor (depth). Therefore, outsourcing success becomes a matter of determining the correct blend of breadth and depth.

Espino-Rodríguez and Padrón-Robaina (2005a), Kotabe and Murray (2004), and Quinn and Hilmer (1994) suggested that organisations should only outsource non-core functions. The recent debates distinguishing core and non-core logic are quite neutral. There are critiques with regards to core and noncore logic, such as, it is not static and does not have clear boundaries (Marshall *et al*., 2007). This is due to the dynamic nature of core competencies (Leavy, 2004; Wu and Park, 2009), making it difficult to generalize core and non-core logic across organisations. Regardless of the nature of the activity (i.e. core or non-core), the number of activities outsourced (i.e. level of breadth) might have a significant impact on outsourcing success.

Next, the depth of outsourcing also determines its success. In services, managing depth creates a dilemma between maintaining service quality and controlling the power. This is because vendors require adequate power in performing activities (Sun *et al*., 2002; Carr *et al*., 2008), while firms need considerable power to monitor and control such activities (Petersen *et al*., 2008; Li and Choi, 2009). Accordingly, firms have to decide upon the appropriate level of depth of outsourcing that produces the optimal outcome. Thus, the extent of depth may also significantly impact the success of outsourcing.

The different combinations of breadth and depth levels create different groups of 'degrees of outsourcing'. Each of these groups may have a different level of impact on outsourcing outcomes. Therefore, this study wishes to examine the impact of different groups of degree of outsourcing (i.e. groups based on different combinations of breadth and depth) on outsourcing success.

Research Question 2

What are the important factors in the exchange of resources that have an impact on outsourcing success?

The social exchange theory (SET) serves as a general paradigm for the social and anthropological research domain (Zafirovski, 2005). It discusses shared responsibility and mutual benefits over activities that are jointly performed by two or more parties (Lawler, 2001). However, the nature of outsourcing relationship has shifted from a purely contractual to a partnership basis (Lee, 2001, Chan and Chin, 2007; Lahiri *et al*, 2009). A successful partnership is based on both contractual and relational governance.

Contractual governance includes managing the formal contract (Petersen *et al*., 2008; Lacity *et al*., 2009). From SET's perspective, contractual governance is a negotiated exchange, which includes a set of responsibilities and benefits. Basically, the responsibility of managers on exchange is to implement a successful vendor management system (Lam and Han, 2005; Chan and Chin, 2007; Han *et al*., 2008; Rajabzadeh *et al*., 2008), which includes vendor evaluation, selection, monitoring, and performance evaluation (Rajabzadeh *et al*., 2008; Chan and Chin, 2007). The secondary purpose of vendor management is executing corrective actions for improvements (Chan and Chin, 2007). Thus, vendor management is one of the core capabilities that guarantee the success of outsourcing (Han *et al*., 2008).

According to the service triad, not only the focal firm, but the vendor also has the responsibility to deliver the service as stipulated in the contract (Byramjee *et al*., 2010; Liou and Chuang, 2010; Young, 2007:2008; Carr *et al*., 2008). The role of outsourcing has changed from traditional purchasing to strategic activity (Chan and Chin, 2007). Thus, the vendor becomes a business partner who deals with operational control of

functions (Rajabzadeh *et al*., 2008), adds value to the business process (Liou and Chuang, 2010), and enhances the sustainable competitive advantage (Miles and Snow, 2007; Whipple and Frankel, 2000). Based on these factors and the nature of service delivery, the vendor has a greater responsibility in managing the outsourcing function.

The success of the service supply chain is highly based on the deployment of relational resources rather than only management by contract (Senguptha *et al*., 2006; Young, 2008). Therefore, relational governance has been identified as the 'golden key for getting the best of supplies' (Donada and Nogatchewsky, 2009, p. 368). Relational governance represents a set of norms that develops over time (Ferguson *et al*., 2005; Petersen *et al*., 2008). The governance emphasizes mutual cooperation for mutual benefits (Cook and Rice, 2003; Zafirovski, 2005). It is passive and contingent upon each other's behaviour. The relational governance aspects have been studied under different terminologies, such as 'social embeddedness' (Uzzi, 1999), 'relationship quality' (Byramjee *et al*., 2010; De Vita *et al*., 2009) and 'partnership quality' (Kedia and Lahiri, 2007; Lee, 2001; Han *et al*., 2008), all of which, to a lesser or greater extent, measure the strength of the relationship. Nevertheless, the commonly used term to explain relational governance in outsourcing is 'partnership quality'.

As far as the role of partnership quality is concerned, there is no warranted consensus. It has a direct impact (Lai, Lee and Hsu, 2009; Whipple and Frankel, 2000), mediating impact (Lee and Kim, 1999; Lee, 2001; Cheng, Yeh, and Tu, 2008) and possibly a moderating impact (Byramjee *et al*., 2010) on performance. This means that relational governance could accumulate value for the intended outcomes directly or indirectly.

As explained by SET, the exchange process collapses and is discontinued in the long run if there is no reciprocity (Zafirovski, 2005). Thus, the mutual reinforcement is vital in achieving expected outcomes in exchanges (Cook and Rice, 2003; Zafirovski, 2005;

Homans, 1961). Accordingly, Petersen *et al*. (2005) stated that the degree of trust between the focal firm and the vendor affects the collaborative planning effectiveness, and, inadvertently, supply chain and firm performance. However, Petersen *et al*. (2008) recognized that, individually, the relational governance could not produce economic benefits in outsourcing, and it could only facilitate in producing better outcomes of contractual governance. Thus, relationship quality might moderate the influence of contractual governance on performance.

Consequently, this study seeks to investigate the moderating effect of relational governance (i.e. partnership quality) on the relationship between contractual governance and the success of outsourcing. Precisely, vendor management capability and vendor's service performance are the components of contractual governance. Thus, the relationship between both vendor management capability and vendors' performance on the success of outsourcing will be moderated by partnership quality.

Research Question 03

What is the role of partners' compatibility in assuring the outsourcing success of the service sector?

From the resource dependence perspective, the failure of one party in the dependency might affect the dependent's goals in the process of the exchange of resources (Pfeffer and Salancik, 1978; Al-Natour and Cavusoglu, 2009). Therefore, dependents (i.e. both, the organisation and vendor) should strive to ensure the success of the dependency. Partners' compatibility acknowledges a high level of mutual interdependence (Mohr and Spekman, 1994). From the resource dependence perspective, the vendors can enhance their power once they are on equal footing with their collaborative client firms. Thus, both the vendor and the focal firm are required to enhance their compatibility in order to survive (Liou and Chuang, 2010).

Even though, the respective dependency (i.e. degree of outsourcing) is determined by the level of compatibility, it cannot entirely be assessed before the exchange of resources starts (Sun *et al*., 2002; Wadhwa and Ravindran, 2007). This is because most of the criteria are not quantifiable (Kannan and Tan, 2004) and, consequently, there is no guarantee that the selected vendor is fully or partially compatible. Furthermore, the success of the degree of outsourcing may not be equal for different levels of compatibility. This means that the same level of degree of outsourcing may be more effective with a highly compatible partner than with a less compatible partner. As far as outsourcing of services is concerned, both firms should have similar working patterns, operating philosophies, directions and competitive priorities, as the vendor acts on behalf of the firm during service delivery. Otherwise, even though the vendors are sufficiently empowered, they are incapable of producing the expected outcome.

Therefore, the influence of the degree of outsourcing on outsourcing success may vary with the level of compatibility between partners.

Next, SET also assumes that the mutual reinforcement is fundamental (Homans, 1961) for successful exchange. Even though the management styles are not unique across partnered firms, they are compelled to adjust to each other for the successful exchange of resources (Whipple and Frankel, 2000). Research Question Two outlined that the responsibility of resource exchange is dual. Both the focal firm and the vendor have co-responsibilities in the process of the exchange of resources. This is presented as contractual governance, and, hence, the success of contractual governance is reliant on the compatibility of the partners involved in the venture. Accordingly, compatibility between partners has a moderating impact on the relationship between both the dependency and exchange on outsourcing success.

In conclusion, the three research questions led to the identification of the critical managerial aspects in the outsourcing of services context, which are basically dependency and exchange. Consequently, the degree of outsourcing determines the level of dependency. The vendor management capability and vendors' service performance' reflect the contractual governance. These two aspects directly impact on outsourcing success. Moreover, the reciprocal nature of relational governance between the focal firm and the vendor is recognized as partnership quality, which moderates the influence of contractual governance on the outsourcing success. Moreover, partners' compatibility also moderates the effectiveness of factors that ascertain outsourcing success. Based on the identified constructs, the conceptual framework is derived.

1.5 CONCEPTUAL FRAMEWORK

The conceptual framework is developed based on the logical rationale deduced in the previous section. The framework integrates aspects of resource dependency and social exchange theories.

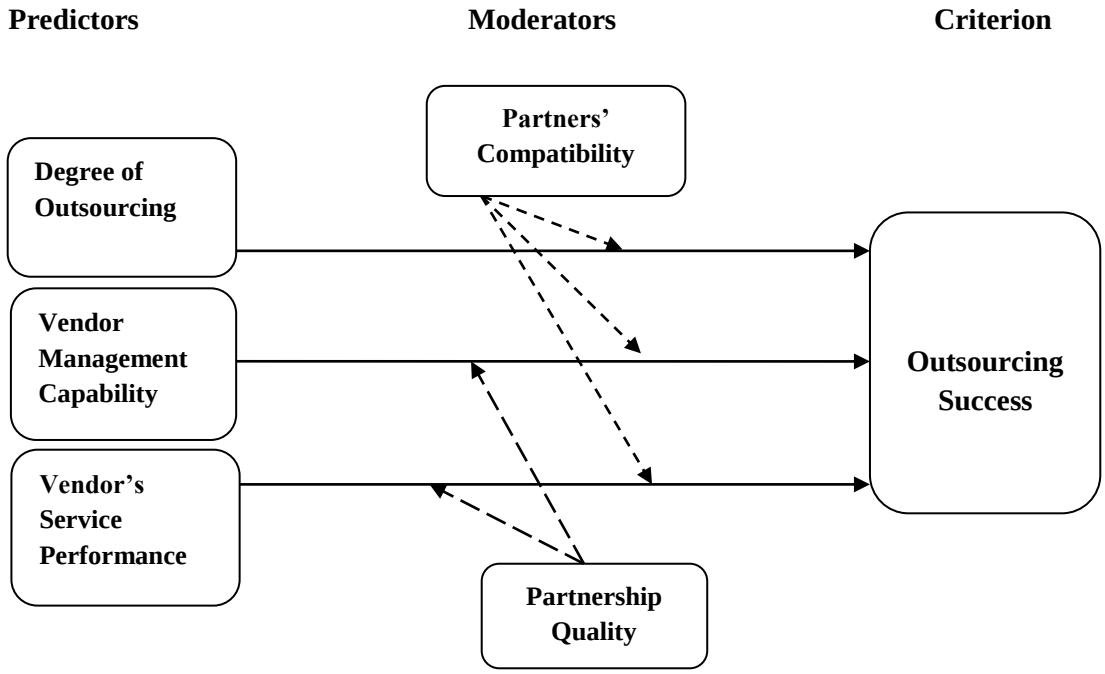

Figure 1.1: Conceptual Framework

This study determined that the degree of outsourcing, vendor management capability and vendors' service performance have a direct impact on the success of outsourcing. The level of partner's compatibility in the partnership will moderate all the aforementioned direct impacts of outsourcing success. The partnership quality also moderates the relationship between both the vendor management capability, and vendors' service performance on "outsourcing success". Figure 1.1 clearly illustrates the conceptual relationships on the services outsourcing success. Based on the research questions and conceptual framework, the following research objectives are derived.

1.6 RESEARCH OBJECTIVES

Basically, the study attempts to understand the managerial factors that affect outsourcing success in service organisations. The conceptual framework clearly outlines the research objectives, pertaining to each research question. These are:

1. To investigate the impact of degree of outsourcing on outsourcing success in services. Additionally, the impact of different combinations of 'degrees of outsourcing' (based on different levels of breadth and depth) on outsourcing success will also be investigated.
2. To verify the positive relationship between vendor management capability and outsourcing success in services.
3. To examine the impact of the vendor's service performance on outsourcing success in services.
4. To investigate the moderating effect of partnership quality on the relationships between 1) vendor management capability and outsourcing success, 2) vendor's service performance and outsourcing success.
5. To investigate the moderating effect of partners' compatibility on the relationships between (1) degree of outsourcing and outsourcing success, 1) vendor management capability and outsourcing success, 2) vendors' service performance on outsourcing success.

1.7 INTRODUCTION OF MAIN CONSTRUCTS

There are six main constructs in this study. These are outsourcing success, the degree of outsourcing, vendor management capability, vendor's service performance, partnership quality, and partners' compatibility. Each of these constructs is briefly described below.

1.7.1 Outsourcing Success.

Outsourcing success can be defined as the positive contributions of the outsourcing activity to the organisational performance. Zhang *et al*. (2009) measured outsourcing success in terms of 'financial', 'operational' and 'overall', while, Grover, Cheon and Teng (1996) employed 'strategic', economic' and 'technological' indicators. Lee (2001) and Han *et al*. (2008) also applied economic, strategic and technological indicators to measure the success in outsourcing of information system. Nevertheless, the outcome of services is both tangible and intangible. Thus, behavioural dimensions are added in order to measure the success of outsourcing (Lee, 2001; De Vita *et al*., 2010; Espino-Rodríguez and Padrón-Robaina, 2005a; Han *et al*., 2008; Benamati and Rajkumar, 2008). Accordingly, this study uses tactical, strategic and behavioural measures, in order to determine outsourcing success.

1.7.2 Degree of Outsourcing

Gilley and Rasheed (2000) and Espino-Rodríguez and Padrón-Robaina (2004: 2005a) had a similar approach to define the degree of outsourcing based on its 'breadth' and 'depth'. This study is aligned along their definition. Accordingly, the degree of outsourcing is defined as a combined construct of breadth and depth of outsourcing (i.e. breadth X depth). Then, the total degree of outsourcing of a firm is equal to the number of activities outsourced as a portion of total activities, with their corresponding power assigned to the vendor in each activity. This study further classified breadth and depth

into three levels (i.e. low, moderate and high), for the purpose of identifying the combined effect of the different levels of breadth and depth on outsourcing success. This will be discussed further in Chapter 3.

1.7.3 Vendor Management Capability

The focal firm is held responsible for ensuring the success of outsourcing (Han *et al*., 2008; Lacity *et al*., 1995; Lee, 2001; Rajabzadeh *et al*., 2008). Basically, the focal firm is responsible for, selecting, monitoring, evaluating, and developing vendors (Han *et al*., 2008; Chan and Chin, 2007; Byramjee *et al*., 2010). The focal firm's ability to compensate the vendor as per the agreed level is also an important aspect of managing vendors (Sun *et al*., 2002). Therefore, vendor management capability is defined as the focal firm's ability to select, monitor, evaluate, develop and compensate vendors adequately.

1.7.4 Vendor's Service Performance

Whipple and Frankel (2000) perceived that the vendor's ability to meet performance expectations is one of the key factors that guarantee success in strategic alliances. The most appropriate vendors are those who can meet the needs of the client's organisation in terms of capacity, quality, technology, price, and services (Ogden, 2006). Taking these facts into consideration, this study defines vendor's service performance as their 'ability to meet or exceed service performance specifications applied in the contract' (Whipple and Frankel, 2000; Gounaris, 2005; Carr *et al*., 2008).

1.7.5 Partners' Compatibility

A partnership is a purposive strategic relationship in which partners share compatible goals, strive for mutual benefits and acknowledge a high level of mutual interdependence (Mohr and Spekman, 1994, p.135). Many scholars proposed, and, in fact, prefer the formation of a compatible organisational culture (Whipple and Frankel, 2000; Lam and Han, 2005; Jarvenpaa and Mao, 2008; Cheng *et al*., 2008), and also work with a partner whose competitive priorities are similar (Skinner, 1966; Espino-Rodríguez and Padrón-Robaina, 2005a:b; Wu and Park, 2009; Kroes and Ghosh, 2009 Tallon, 2008; Jarvenpaa and Mao, 2008). Based on the facts, this study identified partners' compatibility as the degree to which a vendor and focal firm have similar organisational, cultural and competitive priorities in order to perform a joint business activity.

1.7.6 Partnership Quality

Partnership quality explains the reciprocal behaviour and relational norms in an exchange process (Sun *et al*., 2002). Lee and Kim (1999), Lee (2001) and Byramjee *et al*. (2010) defined partnership quality as a reciprocal interactive, inter-organisational relationship to achieve shared goals. Consequently, this study incorporates partnership quality as the level of reciprocal business relationship holding by the focal firm and the vendor in the exchange process.

1.8 SIGNIFICANCE OF THE STUDY

The significance of the present study is as follows. It is explained separately under the contribution to the theory and contribution to the current practice.

1.8.1 Theoretical Contribution

Bryman and Bell (2007: p. 10) explained three aspects through which a researcher can contribute to the theory. This study has five theoretical contributions which address the all three aspects.

The first aspect is a researcher can address the 'neglected aspects' in previous studies. Within this aspect, this study has two theoretical contributions. The first contribution is the present study recognised the importance of dual responsibility of outsourcing of services, due to the real-time and the direct nature of service delivery. In response, this study integrated the responsibilities of both the firm and vendor when determining the success of service sector outsourcing. Following this, the dual responsibility is successful whenever a strategic fit exists between partners. Investigation of the influence of partners' compatibility on an on-going outsourcing contract is absent in the current literature. Consequently, the impact of partners' compatibility on outsourcing success will also be empirically evaluated. This would be the second contribution of this study. Thus, it is expected that the empirical investigations concerning these two neglected aspects will add innovative ideas to the body of knowledge in the area of service sector outsourcing.

The second aspect is a researcher can empirically inspect variables that have not been previously empirically tested. The third and fourth theoretical contributions of this study can be explained through this aspect. The present study wishes to examine the impact of the different combinations of the degree of outsourcing on its success. This will help to

distinguish the relative importance of the levels of breadth and depth in determining the appropriate degree of outsourcing in services. This is the third contribution of the study. Although the moderating role of partnership quality is proposed (Byramjee *et al*., 2010), this phenomenon is still lacking empirical investigation. Thus, empirical examination concerning the moderating role of partnership quality in service sector outsourcing is the fourth contribution to the study.

Bryman and Bell (2007) stated that researchers could also address the 'incommensurate' issues. This is the third aspect and subsequently there is one theoretical contribution of this study. This basically means that there are some aspects that have not been covered by the underpinning theories previously applied. The majority of them address a specific set of outcomes. However, transaction cost economics and the resource based view on the service outsourcing context are not without their critics. Thus, this study employed the 'resource dependency theory' and 'social exchange theory' to oversee the outsourcing context. Basically, these two theories highlighted dependency and exchange as the most crucial aspects that need management in services outsourcing. These theories expanded the dimensions of outsourcing success to a wide range including tactical, strategic and behavioural aspects. This will be the fifth contribution to the study.

Consequently, the study contains five theoretical contributions to the established body of knowledge.

1.8.2 Managerial Contribution

This study intends to investigate the service sector in Sri Lanka. The future plan of Sri Lanka is to become one of the emerging economic hubs in the Asian Region (Central Bank Report -2012). Where key economic indicators are concerned, the Gross Domestic Product (GDP) annual growth rate was reported at 6.43 percent for the year

2012. The highest contribution to GDP was by service sector (58.8 percent), followed by the industrial sector (32.4 percent) (Central Bank Report -2012).

The present study provides a guideline for managing the outsourcing function in the services sector. Basically, outsourcing is perceived as a system rather than an activity. Furthermore, this study is highly concerned with the specific nature of services outsourcing. The factors identified provide guidelines for plan inputs and also manage the process of services outsourcing. This is the first managerial contribution of the study.

Next, managers in the services sector can use the model to evaluate the success of outsourcing. Additionally, they will able to assess the level of partnership quality and partners' compatibility of the vendor(s). This will bring many strategic implications for practice. For instance, if it is deemed that the compatibility between partners' moderates outsourcing success, then managers must pay more attention to methods that enhance the alignment of the vendors and themselves. Such actions may include assigning a certain time to adapt the vendors to their culture, communication of organisational culture and control by working as a team with the vendors (Daityari, Saini and Gupta, 2008). The findings of this study are not merely beneficial to the focal firms, but are equally beneficial to other stakeholders. This allows the vendors to easily recognize their assumed role as competitive players in the market. Likewise, the model developed by the study will help to evaluate the success of outsourcing activities, and, thereby, it will help to take counteractions. This is the second managerial contribution of the study.

1.9 STRUCTURE OF THE THESIS

Chapter one discusses the basic and overall theme of the study, with emphasis on the existing literature gap(s), while establishing a solid background for the proposed study. This includes the problem statement, underlying theories, general research framework, and introduction to the main variables and the significance of the study.

The second chapter reviews the epistemological and ontological background of the outsourcing phenomena. It covers related academic works from multiple research streams, such as outsourcing, services management, supply chain management and performance management. This is followed by a critical evaluation of the underpinning theories in the field of outsourcing, and their respective impacts on the research findings. Finally, a comprehensive analysis of the literature concerning all the variables incorporated in the research framework is included. The second section of this chapter examines the relevant issues arising from the preceding discussion. In relation to the issues observed, corresponding hypotheses are established for empirical verification.

Chapter three provides details of the methodology and constructs employed. In particular, sample frame, sampling method, rationale and item generation and evidence for instrument development are included. Furthermore, this chapter includes the results of the pilot study and its corresponding adjustments. In addition, the foundation for the statistical background for data analysis is provided and discussed.

In Chapter four, the results from the analysis of the data are interpreted, both descriptively and inferentially. Descriptive statistics include analysis of the demographic profile and mean (μ) analysis of variables. The inferential statistics started with scale purification and the development of the measurement model. Using this as a starting point, several relevant structural models are developed. The findings of the

study corresponding to each of the hypotheses established earlier in Chapter 2 are discussed.

Chapter five summarizes the results of the hypothesis tests, together with the discussion on the research findings. It presents the answers to the research objectives and research questions of the study, along with the contribution of the study to the practice and theory. The final section of this chapter highlights the limitations of the study and potential future research areas. Finally, the chapter concludes with a summary of the research findings.

SUMMARY

Chapter one outlined the preliminary information pertaining to the study, identifying that the existing literature has ignored the uniqueness of services in determining the managerial aspects of outsourcing. Consequently, three epistemological gaps were identified. The resource dependency theory and social exchange theory were used to outline the specific requirements of managing services outsourcing. Three research questions were identified, which address the main aim of the study.

The proposed framework presents critical managerial factors in services outsourcing, including managing dependency and exchange. The degree of outsourcing is a critical deterministic point, as it indicates the level of external resource implication. The social exchange theory facilitates the interpretation of the governance structure in the exchange process. In services, the dual responsibility of the focal firm and vendors were identified. Accordingly, the vendor management capability of the focal firm and the vendors' service performance directly affect the success of services outsourcing. This study also identified the moderating role of relational governance (i.e. partnership quality) in the exchange of resources. In addition, the compatibility between partners is

proposed to have a moderating impact on outsourcing success. Consequently, the model intends to answer five research objectives.

This chapter also briefly introduced the constructs of the study, and then elaborated the contributions of the study to theory and current practices. The study has five theoretical and two managerial contributions. The model developed by the study `provides guidelines for both partners in making proactive and reactive strategic decision in the context of services outsourcing. This is the main implicational value of this study. The following chapter will explore the pertinent literature related to this dissertation.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The supply chain is gaining increasing recognition as it directly influences organisational performances (Lejeune and Yakova, 2005; Ketchen and Giunipero, 2005; Miles and Snow, 2007). The focus of supply chain management is to integrate the firm's value chain with the stakeholders' value chain, in order to deliver competitive product(s) or service(s). The value chain integration with the external stakeholders is commonly known as collaboration. As such, outsourcing is a business collaboration that establishes links between suppliers and vendors.

Outsourcing evolves from purchasing and develops to business partnerships. All the involved parties in the partnership share resources in order to gain a competitive edge in their respective markets. The partnership enhances the strength of the business, and thereby improves overall performances. Globalization and Information Technology (IT) greatly accelerate the expansion of outsourcing even with offshore vendors. Regardless of geographical dispersion (domestic/ international), the fundamental reason for outsourcing is to overcome deficiencies in the required resources and to be competitive. However, it does not always report positive outcomes. Therefore, in recent years, substantial research has been attempted to examine, the latent causes of negative outcomes as well as coping strategies.

For instance, some studies reported that the negative outcomes are due to the risk associated with the outsourcing task, such as the vendor's adverse reactions (Lam and Han, 2005; Bon and Hughes, 2009), high switching cost (Donada and Nogatchewsky, 2009), uncertainty in the market (Gilley and Rasheed, 2000; Kotabe and Mol, 2009;

Lahiri *et al*., 2009) and the suppliers' opportunistic behaviour (Lam and Han, 2005; Gewald *et al*., 2006; Bon and Hughes, 2009). Outsourcing also accumulates negative consequences due to the negative emotional experiences received by either/both party (ies) as well (Donada and Nogatchewsky, 2009). Liou and Chuang (2010) developed a hybrid multi–criteria model for selecting outsourcing partners, assuming that the performance differences are vendor-related. In contrast, studies on coping strategies are few.

Therefore, the primary aim of this study is to identify factors that have to be managed in coping with aforementioned negative consequences. Accordingly, the study identified the degree of outsourcing, vendor management capability, vendor's service performance, partner's compatibility, and partnership quality as the main factors that have to be managed. The resource dependency theory and social exchange theory provide the guidelines to oversee these factors.

In turn, this chapter offers a comprehensive review of outsourcing literature, which facilitates the deduction of the aforementioned variables, with regards to outsourcing in general and services outsourcing in particular. The review also allocated a greater attention on underpinning theories and theoretical backgrounds of the constructs used in this study. The diagram below depicts (Figure 2.1) the flow of the literature review.

The last part of this chapter presents the theoretical foundation for research hypotheses for the relationships identified in Chapter 1.

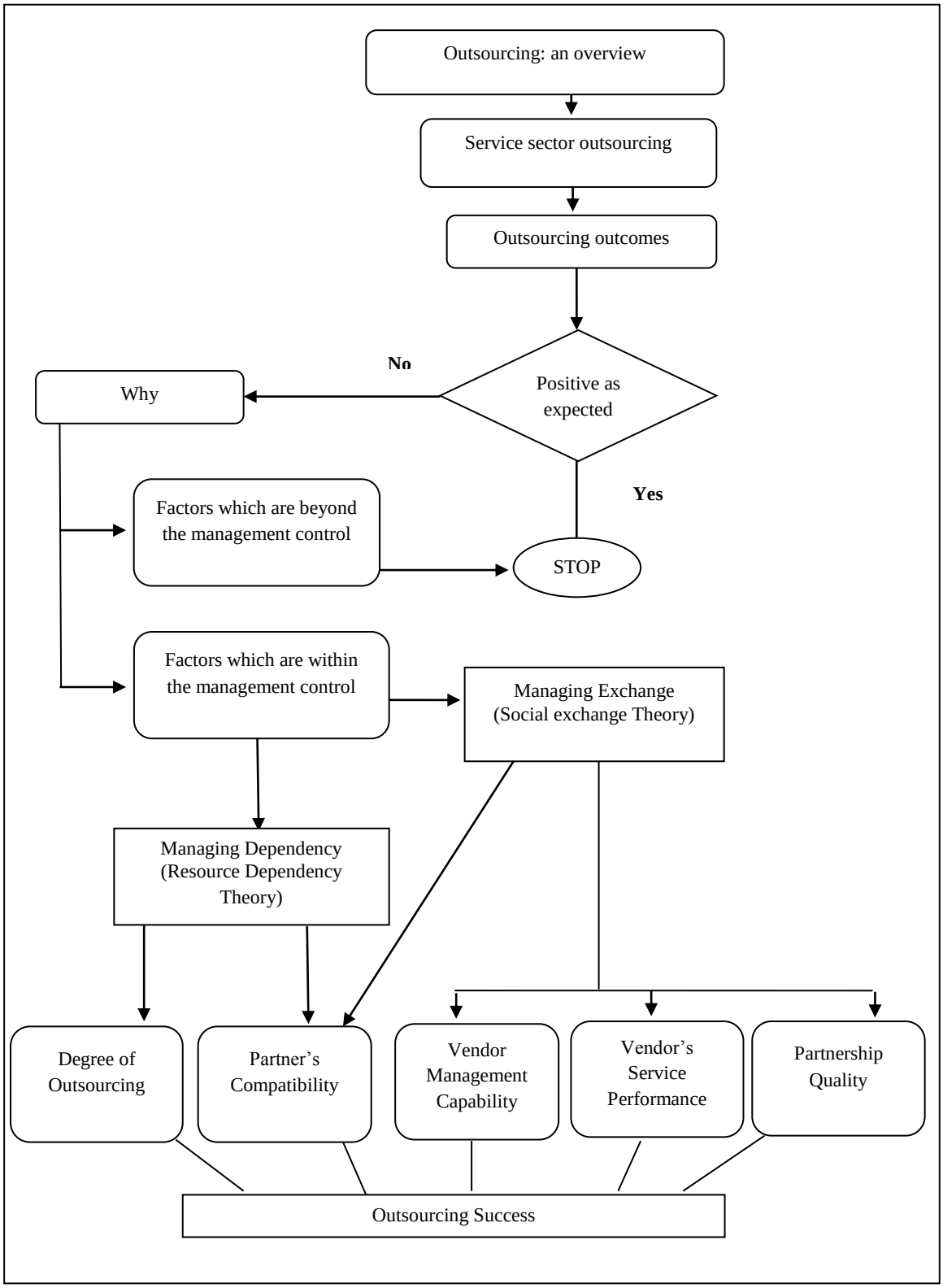

Figure 2.1: Literature Review Conceptual Diagram

2.2 OUTSOURCING: AN OVERVIEW

The notion of outsourcing has evolved with the transformation of business environment. Most of the studies conducted before 2000 perceived outsourcing as a '*make* or *buy'* decision (Lacity and Hirschheim, 1995; Rothery and Robertson, 1995; Fixler and Siegel, 1999), while some other studies after year 2000 perceive outsourcing as a value creation strategy (Lee, 2001; Espino-Rodrı´guez and Padro´n-Robaina, 2005a; Lam and Han, 2005; Han, *at el*., 2008; Liou and Chuang, 2010; Byramjee *et al*., 2010). When the contract is seen as purchasing, outsourcing is recognised as a decision of choice between buy and make. In comparison, outsourcing is viewed as a value creation strategy when the contract is more likely to be a collaborative partnership for mutual benefits. However, a review of existing literature reveals that outsourcing has been perceived differently in different research paradigms. A paradigm is *referring to a set of beliefs, values, assumptions and techniques centred around successive exemplars of successful practical application* (Johnson and Duberley, 2000 , p. 68). The following section further describes the impact of different theoretical domains on the outsourcing context.

2.2.1 Research Domains in Outsourcing

An ontological overview of outsourcing context facilitates the identification of 'why' and 'how' (nature) the present knowledge of outsourcing exists. A clear classification can be done, based on the underpinning theories applied by previous studies. It outlines the objective of the study, conceptualization of constructs, data collection and its interpretation. However, grand theories are not seen as a comprehensive guide in social science, and in light of this, management and business researchers use the middle range theories (Bryman and Bell, 2007, p. 08). Bryman and Bell (2007) therefore posits that 'unlike grand theories, middle range theories operate in limited domains' (p. 08).

Similarly, the theories applied in outsourcing literature are middle ranged; hence some strengths, as well as weaknesses are associated with the research outcomes. As a solution, some scholars applied a mix-method (i.e. more than one theory) in their attempt to mitigate the weakness of a single theory.

Literature review identified four types of dominant research domains in outsourcing, which are transaction cost economies (TCE), resource based view (RBV), and knowledge based view (KBV) and relational specific theories. Relational specific theories (RST) include social network theory, social exchange theory and other theories, which consider business transactions, as a social phenomenon. Kotabe and Mol (2009) and Kroes and Ghosh (2009) previously categorised characteristics of outsourcing based on TCE, RBV and KBV perspectives. By combining these ideas, Table 2.1 depicts the variation of perception on outsourcing in different research domains.

1. ***Transaction Cost Economies (TCE) Theory***

TCE is viewed as one of the most powerful research domains in outsourcing literature (Jarvenpaa and Mao, 2008; Thouin *et al*., 2009; Wu and Park, 2009). It focuses on efficient governance (Marshall *et al*., 2007) of resources for the purpose of reducing transaction cost (Kotabe and Mol, 2009). TCE is based on two basic assumptions of human behaviour: decision makers are rationally bound, and the necessity of monitoring each other's behaviour due to possibility of opportunism (Thouin *et al*., 2009, p. 464). Thus, TCE stresses contractual governance.

Table 2.1: Research domains used in outsourcing literature

Domain	Definition of outsourcing	Drives of outsourcing	Outsourcing contract	Examples
Transaction Cost Economies	**Tactical approach:** Involvement of external party to perform routine and focus on specified tasks efficiency.	Cost reduction, reduce lead-time, downsize the human resource, proximity issues.	Arms-length, purchasing, contractual relationship between partners.	Lacity and Hirschheim (1995); Dyer (1997); Thouin *et al*. (2009); Daityari and Gupta (2008); Young (2008); Bon and Hughes (2009); De Vita *et al*. (2009)
Resource Based View	**Strategic approach:** Use of external resources to add value to business process for effectiveness.	Focus on core- business, risk sharing, competitive advantage, and value addition. Business environment uncertainty, expertise knowledge.	Business partners to strengthen the competitiveness.	Barney (1996); Espino-Rodrı´guez and Padro´n-Robaina (2004; 2005a:b) Kedia and Lahiri (2007); Chi (1994); Venkatesen (1992), Arnold (2000); Jean *et al*.(2008).
Knowledge Based View	**Knowledge approach** Contribution of external knowledge to learn and improvements.	Knowledge sharing, foresee the potential opportunities and threats,	Long –term business partnerships, supplier as co-partner	Lee (2001), Singh and Zack (2006); Cusmano *et al*. (2009); Capron and Mitchell (2004)
Relational Specific Theories.	**Relational approach** Working together with an external party for mutual reinforcement.	Mutual benefits, mutual growth,	Partnership long-term business relationship with mutual understanding,	Lee (2001); Li and Choi (2009); Bernardes (2010); Hsiao at al.(2010)

Some important aspects of TCE include, the facilitation of analysing short-term business and discrete transactions (Marshall *et al*., 2007) and also covers operational performance dimensions (Watjatrakul, 2005; Donada and Nogatchewsky, 2009; Thouin *et al*., 2009). Additionally, TCE is valid for business-to-business transaction analysis, as the fundamental purpose of each party engaged in the transaction process exceeds the benefits of the incurred cost (Byramjee *et al*., 2010). Therefore, Bon and Hughes (2009) highlighted the need for 'careful analysis of the cost anticipated in the outsourcing' in order to obtain the expected results. According to the Table 2.1, TCE perceives the reduction of cost as the main drive of outsourcing (Lam and Han, 2005; Kedia and Lahiri, 2007; Banerjee and Williams, 2009; Kroes and Ghosh, 2009). Therefore, establishing an arms-length, contractual relationship is sufficient (Lacity and Hirschheim, 1995; Dyer, 1997).

Although the TCE theory is viewed as a powerful research domain, it is not without its detractors. Some criticism levelled on TCE includes the failure to recognise corporate capabilities (Holcomb and Hitt, 2007), ignoring other aspects of organisational behaviour (Espino-Rodrı´guez and Padro´n-Robaina, 2005a) and its limited scope of extracting outsourcing outcomes. Furthermore, the TCE approach is deemed incompatible within the highly uncertain environmental conditions (Williamson, 1979; Kotabe and Mol, 2009). As a whole, the main focus of the TCE perspective is 'efficient' governance more than the 'effective' governance of resources. Thus, modern organisations are advised to understand and avoid the pitfalls of cost-focused outsourcing, and apply business-outcome-focused outsourcing, in order to be successful (Cohen, L. and Young, Gartner studies 2008, p. 05). Many scholars (e.g. Venkatesen, 1992, Chi, 1994; Arnold, 2000; Espino-Rodrı´guez and Padro´n-Robaina, 2004; Miles

and Snow, 2007; Kedia and Lahiri, 2007) highlighted the fact that the appropriateness of 'resource based view', focuses on the strategic importance of outsourcing.

2. *Resource Based View (RBV)*

RBV is one of the dominated theoretical research paradigms in outsourcing, as the gradual increase of supply chain structures, which aims at reducing cost, provides little sustainable competitive advantage. Thus, RBV perceives outsourcing as a decision that is undertaken to solve an internal issue (s) for the purpose of future strategic movement(s). Donada and Nogatchewsky (2009) categorized these issues into four, which are financial issues, operational issues, resource and competency issues and organizational issues.

Consequently, acquiring expertise from outside (Lee 2001; Kedia and Lahiri 2007; Jean *et al.*, 2008; Banerjee and Williams, 2009), simplifies the complex business process (Banerjee and Williams, 2009), and risk sharing (Kedia and Lahiri, 2007), are some examples for motivations of outsourcing which mitigate the aforementioned four strategic issues. The successful strategic movements are also driven by sustainable and close relationships. Moving away from arms-length relationship facilitates the establishment of sustainable and close relationship with vendors (Zhang *et al*., 2009). In accordance to this, Park-Poaps and Rees (2010) and Chan and Chin (2007) encourage the incorporation of long-term relationship with vendors. This allows vendors to be considered as 'business partners' in outsourcing (Arnold, 2000).

Moreover, RBV identifies firm-specific capabilities, and examines ways on how the capabilities are utilized in order to enhance performance (Arnold, 2000; Espino-Rodrı´guez and Padro´n-Robaina, 2004; Watjatrakul 2005; Kedia and Lahiri, 2007).

The main focus of RBV is to achieve competitive advantage through effective resource utilization. Effective resources however, should be able to add value to the organisation, and those resources should be valuable, rare, imitable and manageable (Barney, 1991).

Consequently, RBV covers broader aspects than TCE. However, Marshall *et al*. (2007) stated that the boundaries between TCE and RBV are rather contradictory. In contrast, Watjatrakul (2005) empirically justified that these two approaches (i.e. TCE & RBV) promote different sourcing decisions for the same study context. In more constructive point of view, TCE and RBV complement each other (Marshall *et al*., 2007) and strengthen one another (Leiblein, 2003). In conjunction with this, Byramjee *et al*. (2010) has developed a cost benefit analysis of partnership, with regards to the value creation process of the focal firm. Although RBV is considered as one of the most interesting and useful research paradigms in the management discipline, it also ignores the behavioural aspects of the strategic outsourcing.

3. ***Knowledge Based View (KBV)***

KBV approach is considered an emerging research domain, especially in the realm of information systems outsourcing. KBV perceives, knowledge sharing and foresees the potential opportunities and threats as the primary motivations of outsourcing (Capron and Mitchell, 2004; Singh and Zack, 2006; Cusmano *et al*., 2009).

Miles and Snow (2007) and Kroes and Ghosh (2009) stated that the core competency is an accumulated knowledge that creates value to the firm in order to generate competitive advantages. Knowledge is accumulated through learning, and learning organisations need knowledge and information in order to sustain continuous improvement related to the planned, as well as unplanned outputs (Miles and Snow,

2007). Sharing information, mutual learning, visionary decision-making, joint decision-making and knowledge (implicit and explicit) sharing are key characteristics of the KBV. These activities provide opportunity for organisations to learn and improve; but this is possible to perform only with mutual trust among partners (Lee, 2001; Cusmano *et al.*, 2009). Thus, the research domain upgrades the vendor as co-partner of the business (Singh and Zack, 2006; Cusmano *et al.*, 2009).

However, earlier views of the context reported that outsourcing acts as a barrier for learning and innovation (Bettis *et al.*, 1992; Hendry, 1995). Falsifying the argument, Cusmano *et al.* (2009) and Cui *et al.* (2009) empirically found that outsourcing leads to innovations.

Considering these three paradigms, KBV also focuses on improved competitiveness, but considers knowledge as the key resource, which can arrange and direct other resources, making it very suitable for knowledge based firms.

4. *Relational Specific Theories' domain*

Managing materialistic resources is easier due to the static nature of existence. This is in contrast to managing relational resources, which are unpredictable and dynamic in nature. All aforementioned approaches (i.e. TCE, RBV, KBV) are concerned with non-human resources in order to create a competitive advantage, but with the expansion of supply chain management and outsourcing activities to the strategic level (Ketchen and Giunipero, 2005), firms are compelled to incorporate human and relational elements more than ever (Sriram and Mummalaneni, 1980; Larson and Kulchitsky, 1998; Li *et al.*, 2005; Ferguson *et al.*, 2005; Lahiri *et al.*, 2009). Modern supply chains are vertically and horizontally integrated and interconnected, and all the participants along

the supply chain have to be simultaneously satisfied in order to realize total success. The network/chain might be made up of buyers, suppliers/vendors, end customers, and employees. The study therefore notices an emerging research interest on managing soft aspects (relational resources) of outsourcing.

The relationship management in the supply chain is important for the purpose of managing behavioural and emotional elements (Donada and Nogatchewsky, 2009). Consequently, some studies attempted to oversee the outsourcing context, which emphasizes on the social relational aspects. For instance, Lee (2001), Sun *et al*. (2002) and Lacity *et al*. (2009) applied social exchange theory, while Li and Choi, (2009) and Bernardes (2010) employed the social network theory. Both theories focus on social capital investments for successful trade. The social network theory is an expanded idea of SET, focusing more on management than social science. In fact, Gewald *et al*. (2006) combined the perceived risk theory and the theory of reasoned action to analyze the risk associated with outsourcing in business process. These theories implicitly explain the impact of behavioural consequences on decisions.

As discussed, different domains focus on different issues. The following section further elaborates the definitions of outsourcing perceived by each domain, shown in Table 2.1. The analysis of definitions is taken as a separate section, as it is worthwhile to discuss separately.

2.2.2 Outsourcing Definitions

The ‘sourcing’ decision determines whether to use internal or external resources to accomplish a particular organisational objective(s) (Holcomb and Hitt, 2007). The common characteristic in all definitions of outsourcing includes ‘involvement of external party’ (Lacity and Hirschheim, 1993; King and Malhotra, 2000; Kakabadse and Kakabadse, 2003; Aubert *et al*., 2004). ‘External’ denotes performing the task or creating the value not by the firm’s own resources (Arnold, 2000), but by the recourses where the primary ownership is not with the firm. Thus, a firm can buy or share resources.

However, these definitions are varied on the perception of ‘resources’. Resource is generally known as anything that is used as a production input. It can be tangible or intangible (Barney, 1999). All resources are not equally important. They can be more or less strategic (Cheon *et al*., 1995). The characteristics of strategic resources are: valuable, rare, inimitable and non-substitutable (Barney, 1991). However, different theories have different perceptions on value of resources. Table 2.1 shows a clear variation in the approach to define outsourcing in different theories.

Transaction cost economies theory generally perceived, outsourcing as a method of cost-cutting maneuver (Donada and Nogatchewsky, 2009). However, some studies in the domain defined outsourcing as a value added strategy as it could perform tasks comparatively at a lower cost. For example, it is perceived as,

> *Hybrid structures that allow firms to reap some of the benefits of vertical integration (lower transaction costs) alongside the economic gains that accrues from market transactions (in the case of outsourcing, cost savings and value adding).* (De Vita *et al*., 2009, p.658).

Then, resource based view (RBV) defines outsourcing as a strategic tool, as it covers strategic importance of external resources. The approach identified the value of outsourcing beyond cost reduction, such as value creation strategy for networked business (Leiblein *et al*., 2002; Byramjee *et al*., 2010). Specifically, Espino-Rodrı´guez and Padro´n-Robaina, (2005a, p. 708) defined outsourcing as *... a result of acquire desired and specific types of resources that the firm does not otherwise possess and which are provided more efficiently by third parties*.

The definition elaborates the competitive and relative importance of resource utilization for sustainable competitive advantage. However, Gilley and Rasheed (2000) claimed that the rejection of internalization due to the lack of capital or expertise is not merely outsourcing. However, their argument is not clear, because substitution can be taken as a result of the absence of certain resources or the absence of capital to acquire those resources (i.e. physical or non-physical resources). Moreover, outsourcing is perceived as a mode of providing added capabilities for the business process in resource based supply chains (Miles and Snow, 2007).

Next, the knowledge based view (KBV) defines outsourcing in a much broader context than resource based view. It is viewed as a mechanism for learning and innovation (Cusmano *et al*., 2009; Miles and Snow, 2007). This places outsourcing in a position to respond to the need of reaping specialization gains while exposing itself to a variety of learning experiences (Cusmano *et al*., 2009, p. 185). Usually, KBV is utilized by studies focusing on outsourcing in information systems (IS), where the resources which refer to knowledge and its exchange are intangible. Indeed, firms have recognised the value of knowledge and learning associated with outsourcing. Bounfour, (1999) however, posits that organisations are reluctant to consider this fact as the contribution

of knowledge and learning is difficult to quantify. However, Miles and Snow (2007) perceive knowledge shared by the members in the network as an expandable, rather than diminishing resource (p. 462). Moreover, Singh and Zack, (2006) claim that *…outsourcing is an activity which becomes a strategic decision to continue or discontinue defending a competitive knowledge position* (p. 13).

From the perspective of organisational learning and innovation, outsourcing provides a platform for bringing expertise knowledge to the firm (Arnold, 2000; Capron and Mitchell, 2004; Singh and Zack, 2006; Cusmano *et al*., 2009). Accordingly, Cusmano *et al*. (2009) perceived *… outsourcing implied widespread leverage of technology and knowledge from external sources, in the attempt to flexibly respond to the pressures and challenges of competition* (p. 183).

However, the research focus has evolved, along with the purpose of outsourcing. Nowadays, in modern businesses, relational resources for maximum benefits are deemed to get maximum benefits out of other tangible resources utilized. Table 2.1 further reflects the expansion of the notion of outsourcing, from the hard aspects to the soft aspects. For instance, the path from transaction cost economies (TCE) to relational specific theory (RST) approach (i.e. TCE to RBV to KBV to RST) recognizes the value of relational and behavioural aspects in outsourcing. Relational resources are basically recognised as a social capital, and treated as a critical determinant of performance (Bernardes, 2010). Accordingly, studies based on relational or behavioural approaches are used to define outsourcing as a collaborative business with an external party for mutual reinforcement. For example, Donada and Nogatchewsky (2009) stated that client– supplier/vendor relationship is the golden key for getting the best supplies (p. 368). Park-Poaps and Rees (2010) identified the need for stakeholder perspectives in

the supply chain management studies due to increasing globalization, and the increased level of social expectations of stakeholders. Thus, the success of collaborative business has become a matter of successful relationship management in a business-to-business context. Studies that recognize the value of relational resource are used to define outsourcing as a social phenomenon. For example, Li and Choi (2009) applied social network theory and defined 'service outsourcing' in-terms of *...shifting relational structures among buyer, supplier and customer in the service supply network* (p. 35).

In short, factors such as drives, contract type and definitions of outsourcing have various approaches. Those approaches are followed by the research domain, applied by the particular study. However, in practice, managers may have a multiple and mixed interests with regards to outsourcing. Thus, they will have different approaches in setting the outsourcing structures.

2.2.3 Outsourcing Structure

In practice, different outsourcing structures can be observed. The formation of different structures relies on resource capability and competencies of the firm (Barney, 1999; Kotabe and Mol, 2009). In general, outsourcing is a vertical supply chain whereby the focal firm acts in an intermediate role in the transaction process.

Dibbern *et al*. (2004) outlined four types of structural elements of outsourcing. These are the degree, the mode, the ownership and the time frame. The 'degree' refers to the level of vendor's involvement (i.e. total or partial); the 'mode' details the number of players in the exchange process; while the ownership dictates whether the outsourced function is totally owned, partially owned or externally owned by the company. The

time frame could be a short term or a long term outsourcing contract. However, it is a known fact that the concept of 'ownership' and the degree of outsourcing cannot be separated. In lieu of this, Suhaimi, Hussin and Mustaffa (2007, p. 646) combined the ideas, and identified various types of outsourcing setups. The categorisation is based on the number of buyers (i.e. focal firms) and suppliers (i.e. vendors) involved in the process.

1. Simple dyadic;
2. Multi-vendor;
3. Multi-client; and
4. Complex relationship.

Simple dyadic relationship is the simplest mode of structure, where a single vendor is involved with the one-client firm. A multi-vendor setup involves more than one vendor with one client firm. Multi-client and complex relationship modes are practising with business synergies within or between the respective industries. However, multi- client outsourcing describes multiple clients (in the alliance) obtaining services from a single vendor. When, several client companies form outsourcing relationships with more than one vendor, making it a complex arrangement.

Apart from the above categorization, Croom *et al*. (2000, p. 71) identified three levels of vertical supply chain: dyadic level, chain level and network level. The dyadic level is similar to 'simple dyadic' method explained earlier; while the vertical chain includes more than one layer of vendors (i.e. vendor's vendor). Network level is complicated and concerns operations throughout upstream and downstream supply chains. Eventually, 'simple dyadic' is the foremost micro level of outsourcing relationship. All other complex relationships can be broken down into minor relationships, which are

dyadic at the operational level. Faes and Mattyssens (2009) cited some practical advantages of dyadic relationship, such as better negotiations, fewer investments in warehousing and lesser handling cost. Thus, Ogden (2006) suggested that the reduction of the supply base would be better for supplier/vendor handling, but single dyadic relationship is also disadvantageous in certain aspects. For instance, the production process may be interrupted due to the opportunistic behaviour or lack of performance of a single vendor.

Usually, outsourcing theory and knowledge are built around dyadic relationship (Byramjee *et al*., 2010; Croom *et al*., 2000; Park-Poaps and Rees, 2010; Donada and Nogatchewsky, 2009). It considers the immediate involvement and interaction of both parties in the transaction, allowing the understanding of dynamics of such engagement better than the other levels (Yadav and Gupta, 2008, p. 40). The dyadic relationships between heterogeneous players that do not have overlapping capabilities (Zhang *et al*., 2009) are easier to analyse. For an example, Byramjee *et al*. (2010) developed a cost benefit analysis model, based on dyadic relationship, but they mentioned that, it can be used for multiple supplier settings as well. Thus, dyadic arrangement is the most appropriate structure for investigating outsourcing, especially for services, as the exchange is bilateral.

Time duration of outsourcing is also identified as a critical decision in outsourcing. It is widely recommended for a long-term establishment (Park-Poaps and Rees, 2010; Chan and Chin, 2007) for a cumulative relationship in order to ensure the successful execution of outsourcing (Qu, Oh and Pinsonneault, 2010). However, the degree of outsourcing, and the selection of the appropriate mode (i.e. number of layers of vendors) becomes a matter of leverage that each firm wishes to maintain. Thus, the degree of

outsourcing becomes the most fundamental structural decision. Having identified the theoretical and practical perspectives in outsourcing in general, the next section will discuss the service sector outsourcing in its context.

2.3 SERVICES OUTSOURCING

2.3.1 Overview of Services Outsourcing

The services are simultaneous, perishable, intangible and heterogeneous (Zeithaml *et al*., 1985; Sampson, 2000). These are attributes of services and explain that, service production and consumption occur at the same time, they cannot be inventoried, do not have a physical existence, and the demand is assorted accordingly. Therefore, the demand depends on the 'presentation' and 'interpretation' of the service product (Zhang *et al*., 2009). However, the human labour forms a significant component of service delivery (Senguptha *et al*., 2006) and hence outsourcing in services is more critical than manufacturing. The simultaneous nature of services led to the end of customers directly interacting with service providers (Gounaris, 2005; Li and Choi, 2009; Zhang *et al*., 2009).

The service industries are maturing, and have become more competitive, and hence there is a growing need to increase efficiency, productivity and competitiveness. The service sector growth is considerably faster than the manufacturing sector (Fixler and Siegel, 1999), making it the engine of the world's growth (Hufbauer and Stephenson, 2007, p. 605). In short, the world's business interest and attention is moved away from Wal-Mart to Ritz Carlton. In conjunction with this, the focus of academia is shifted to exploring the ways and means of world-class services more than world-class manufacturing. Basically, this is due to the digitalization of the service delivery

process (Zhang *et al*., 2009; Gewald et *al*., 2006). Moreover, outsourcing has led services to a position of prominence (Fixler and Siegel, 1999), especially in industries such as financial and banking (Gewald *et al*., 2006; Suhaimi *et al*., 2007; De Vita *et al*., 2009), hospitality (Lam and Han, 2005; Espino-Rodrı´guez and Padro´n-Robaina, 2004:2005a; Donada and Nogatchewsky, 2009; Zhang *et al*., 2009; De Vita *et al*., 2009) healthcare (Young, 2008; Thouin *et al*., 2009), and telecommunication (Marshall *et al*., 2007; De Vita *et al*., 2009) have increasingly adopted outsourcing as a strategy to improve their competitiveness.

Outsourcing in IT (Information Technology) and IS (Information Systems) have become a trend of business process re-engineering all over the world (Yadav and Gupta, 2008). As Suhaimi *et al*. (2007, p. 644) stated, IT and IS outsourcing is high in USA, UK and Australia, followed by Western Europe and South America. East Asia comes in third, and South Asian countries lag far behind.

However, the basic idea of outsourcing has not changed, but has evolved, expanding both the range and depth of services being outsourced (Ozcelik and Altinkemer, 2009, p. 03). Service outsourcing is focusing on purchasing value-added services from the outside (Banerjee and Williams, 2009). Lam and Han (2005) viewed service outsourcing as a management pattern, where a firm can hire specialized resources from an outside agent. Li and Choi (2009) perceived this as a structural change in the relationship between the focal firm, the vendor and the end customer.

As far as the digitalization of service delivery is concerned, the business scope is expanded not only to domestic customers, but also to offshore customers. In the opinion of Hufbauer and Stephenson (2007), the digitalization of service delivery process

facilitated the emergence of the outsource business functions to the international market. This creates a greater potential to expand the business scope of services with the support of IT and IS. International (offshore) outsourcing is viable if a vendor could overcome barriers in terms of distance, time zone and culture (Jarvenpaa and Mao, 2008). In fact, labour shortage in developed countries has compelled organisations to outsource their services to developing countries for cheaper prices but high quality services (Hufbauer and Stephenson, 2007). Despite geographical limitations, firms employ outsourcing for different purposes.

As Gilley and Rasheed (2000) reported, firms should design organisational structure and utilize managerial practices that best suit their internal capabilities and competencies, in order to increase efficiency. Therefore, it is difficult to generalize the purpose of outsourcing across the organizations. The early views of domestic outsourcing explain that the primary focus of outsourcing is the 'cost reduction' (Ang and Straub, 1998). For instance, firms seek vendors who can offer equivalent services at lower prices (Fixler and Siegel, 1999). Later on, it is further evolved and perceived as, getting value added services at reasonable cost from external sources (Lam and Han, 2005; Senguptha *et al*., 2006;Young, 2008;Banerjee and Williams, 2009). This shift makes the lowered cost a secondary consideration, where value creation is preferred (Banerjee and Williams, 2009). Exceptionally, Benamati and Rajkumar (2008) viewed that, outsourcing (particularly IS outsourcing) as a risk reduction tool instead of cost reduction strategy.

The variations of the motivation have led to the forming of different types/levels of partnerships such as tactical, strategic and transformational (Kedia and Lahiri, 2007). Kedia and Lahiri (2007) further explained that when a firm has a higher level of motivation, it tends to form advanced level of partnership. For example, risk sharing and

flexibility improvements are strategic motivations of outsourcing which cannot be achieved through tactical partnerships. Thus, the level of partnership depends on the firm's motivations of outsourcing.

The factors that drive firms to outsource can be categorized as 'push' and 'pull'. The issues in core competencies such as cost pressure, service quality and service delivery speed (Fixler and Siegel, 1999; Gewald *et al*., 2006; Kedia and Lahiri, 2007; Jarvenpaa and Mao, 2008; Young, 2008; Banerjee and Williams, 2009) may constitute push factors. On the other hand, labour related issues such as inadequate skills required to deliver services (Young, 2008, p. 452), can be also taken as a push factor. Pull factors such as sharing external expertise knowledge (Han *et al*., 2005; Banerjee and Williams, 2009), sharing business risk (Kedia and Lahiri, 2007; Benamati and Rajkumar, 2008), mutual learning and information sharing (Han *et al*., 2008), and innovations (Cusmano *et al*., 2009) help firms to move forward. Moreover, a new form of competitions/competitors (Gewald *et al*., 2006; Kedia and Lahiri, 2007; Zhang *et al*., 2009) and competition among the vendors (Banerjee and Williams, 2009) are some of the other stimulating factors. This led outsourcing being recognised as a change management strategy and not a panacea for financial, quality and work related issues (Young, 2008, p. 462).

The outsourcing decision, however, is influenced by a managers' perceived risk (Lam and Han, 2005; Gewald *et al*., 2006). Gewald *et al*. (2006) recognized four types of associated risks, which are financial, strategic, performance and social. In situations where direct contacts or encounters with customers are outsourced, it incurs risks such as loss of control over function, disruption of service delivery and loss of focus (Linder, 2004; Senguptha *et al*., 2006; Li and Choi, 2009). Besides, opportunistic behaviour of

vendors (Lam and Han, 2005; Bon and Hughes, 2009; Kotabe and Mol, 2009; De Vita *et al*., 2010), out of touch with technological developments (Bettis *et al*., 1992; Hendry, 1995), and issues in information security (Lonsdale, 1997; Dyer, 1997; Li and Choi, 2009) are some other perceived risks of outsourcing. Generally, the 'tender process' is employed by firms to choose vendors that offer the most competitive prices and specifications. This system hardly guaranteed favourable outcomes due to the issues associated with the procedures (Domberger *et al*., 2002). Some of these issues are: winning bids were underpriced, variations in documented capabilities of vendors with actual capabilities (Young, 2008) and uncertainties of task environmental factors (Espino-Rodríguez and Padro´n-Robaina, 2005). These issues are magnified in the service sector as meeting the client's specifications is the very core of the partnership success. The following section analyses the differences of outsourcing in the services sector compared to the manufacturing sector.

2.3.2 Outsourcing: Services Vs Manufacturing

The service is an idea or concept thought up by the service provider, and it is an experience to the receiving customer. Whenever a task is outsourced, the firm assigns an outside party to transform the idea into an experience. The service delivery is dynamic, as customer requirements are heterogeneous, making it quite difficult to dictate and specify in the contract (Young, 2008; Li and Choi, 2009). This necessitates careful articulation of service contract. Next, the service delivery is bidirectional (Sampson, 2000), meaning that only two parties (i.e. service provider and customer) are involved in the delivery of a single service encounter. In this case, the provider can be the focal firm or the vendor. Unlike manufacturing, services are perishable, making it

impossible to be stored for future trade. Thus, service firms have to bear resource idle times which make outsourcing more challengeable. Thus in services, task based outsourcing is preferable to time based outsourcing. According to McCollough *et al*. (2000), service sector is at risk of losing customers if it does not have a satisfactory recovery system. There is a need to evaluate vendors' service recovery plans during the tender assessment process. Alternatively, 'service process standardization' helps the service firms to be more flexible in applying various business strategies such as outsourcing, franchising and alliances. Wüllenweber *et al*. (2008) found that service process standardization has a positive impact on outsourcing success, as it facilitates better monitoring, communication and coordination. However, the assessment of the outcome of outsourcing in services is more complex than it is for the manufacturing.

The uncertainties in outputs are higher in services than manufacturing. This is due to the higher level of human involvement (Senguptha *et al*., 2006). Specially, uncertainty with regards to the vendor's performance is quite strong (Lee, 2001; Han *et al*., 2008). Fixler and Siegel (1999) conducted a comparative analysis based on 30 years data in the US manufacturing and services sector. They discovered that the impact of outsourcing on productivity is 'clearer' in manufacturing than it is for the labour intensive services sector. This is due to the fact that service outsourcing outcomes are hard to quantify (Kannan and Tan, 2004). Additionally, there is a higher uncertainty in demand (Zhang *et al*., 2009) and hence the services outsourcing outcomes are not static (Li and Choi, 2009). These factors caused scholars to introduce behavioural dimensions, such as satisfaction with vendors (Lee, 2001), and intention to outsource (Dyer, 1997; Lee, 2001; Espino-Rodrı´guez and Padro´n-Robaina, 2005a; Han *et al*., 2008).

Other than these factors, the difference is quite pronounced between the service supply chain and the manufacturing supply chain, as shown in Figure 2.2 (Li and Choi, 2009). The manufacturing supply chain is linear, as the focal firm acts as an intermediary between the vendor and the customer. Figure 2.2 clearly illustrates that no direct contact is needed between the vendor and the customer in the outsourcing of manufacturing sectors.

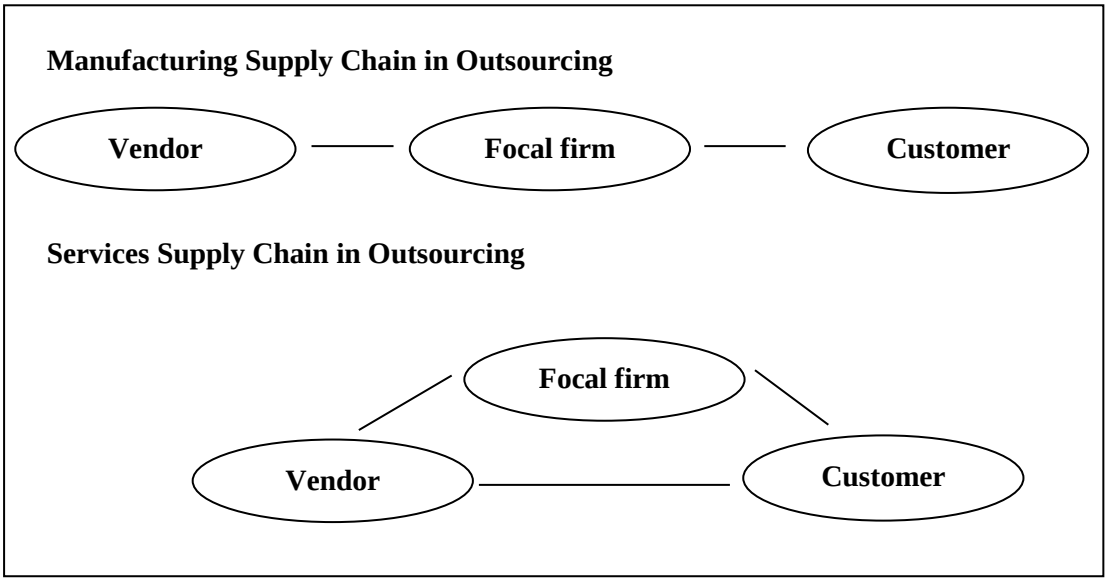

Figure 2.2: Manufacturing Vs Service Supply Chain

Source: Li and Choi (2009), Comparison of supply chain triadic relationship structures in manufacturing vs. services. Page.29.

However, the simultaneous nature of services supply chain led to a direct interaction between the customer and the service provider. As identified in the chapter 01, services outsourcing is denoted as employment of an external party in order to produce certain services. Consequently, service supply chain connects the focal firm, the vendor and the customer as a triad in the outsourcing context. First, the firm identifies the customer's needs. Next, they evaluate the internal and external resource capabilities in fulfilling those needs. External sources become a feasible option of resource utilization if they

could produce competent, cheap, and quality service compared to internal resources. However, the selection of external resource may have different motivations. The focal firm has to communicate their expectations on outsourcing to the vendor in addition to the customer's requirements and expectations. Thus, Li and Choi (2009) perceived the focal firm as a bridge between vendors and customers. A service failure will occur if there is a gap of communicating expectations and understanding responsibilities of each other, which is known as 'structural hole' (Li and Choi, 2009).

However, Burt (2004:2007) was with the opinion that structural hole maintains a competitive advantage in social networks. He further explained that the 'bridge' position can expand the structural hole in order to achieve greater advantages. This may hold true for social relationships, but outsourcing is mainly an economical phenomenon striving for mutual benefits. Accordingly, the focal firm should connect the vendor and the customer in order to maximize outsourcing benefits. For example, a hotel can outsource their transport system to a travel agency. In this case, expanding the connection between the travel agency and the tourists is not practical in order to maintain the competitive advantage of the firm. Instead, the firm has to connect the vendor and the customer in order to deliver the expected service. Likewise, services outsourcing is more complex, due to the nature of services and its supply chain.

Consequently, outsourcing is identified as one of the most complex and key decisions (Faes and Matthyssens, 2009) that affects organisational performance.

2.4 OUTCOMES OF OUTSOURCING

The main focus of outsourcing studies is to investigate ways and means of ensuring the success of outsourcing. The definition of success is however, subjective. It is incumbent on the meeting of expectation of the involved party(ies) for it to be considered a success. Moreover, the impact of outsourcing on performance is difficult to segregate from overall organisational performance (Fixler and Siegel, 1999; Kotabe and Mol, 2009; Das, 2009; Kroes and Ghosh, 2009). The current literature however revealed that the level of outsourcing is positively correlated to the organizational performance (Fixler and Siegel, 1999). Raa and Wolfe (2001) conducted a microeconomic analysis on outsourcing services in manufacturing organisations using secondary data for the past five decades, and their findings are consistent with Fixler and Siegel (1999). Comparatively, a large number of cross-sectional studies have been conducted in order to ensure the outcomes of outsourcing efforts in different industries. However, it is generally accepted that the manufacturing sector is subjected to more rigorous empirical investigations than the services sector. The next section discusses the advantages of outsourcing, regardless of sector.

2.4.1 Advantages of Outsourcing

Gilley and Rasheed (2000) pointed out the advantages of outsourcing in terms of financial and non-financial improvements; while Chen and Paulraj (2004) measured the supply chain performance with financial and operational indicators. Non-financial indicators, however, contain both operational and strategic gains, thus, the performance is commonly measured in terms of financial, operational and strategic outcomes (Jean *et al*., 2006; Zhang *et al*., 2009). In detail, financial benefits include the reduction of operational costs (Lee, 2001; Kroes and Ghosh, 2009), the reduction of regulatory and

legal costs (Kroes and Ghosh, 2009), the value added returns (Kotabe and Mol, 2009), the transaction value (Dyer, 1997), and the profits (Espino-Rodrı´guez and Padro´n-Robaina, 2005a). Basically, quality improvements and productivity growth are considered as operational outcomes. However, very few studies (e.g. Espino-Rodrı´guez and Padro´n-Robaina, 2004:2005a; Young, 2008; Liou and Chuang, 2010) highlighted the importance of 'quality improvements' as a dimension of measuring the performance of outsourcing. In addition to that, 'productivity' is recognized as another indicator of operational success in terms of quantity (Fixler and Siegel, 1999; Espino-Rodrı´guez and Padro´n-Robaina, 2004; Kotabe and Mol, 2009).

Next, the strategic outcomes contain long-term impact on performances, and are able to gain sustainable value for organisations (Porter, 1980; Barney, 1991; Kim *et al*., 2005; Jean *et al*., 2008). More specifically, focus on core business (Lacity and Willcocks, 1998; Lee, 2001; Domberger *et al*., 2002; Gewald *et al*., 2006; Kroes and Ghosh, 2009; Ozcelik and Altinkemer, 2009), sharing expertise knowledge and information (Malhotra *et al*., 2005; Han *et al*., 2008; Banerjee and Williams, 2009), innovations (Cui *et al*., 2009; Cusmano *et al*., 2009), reduction of business risk (Lee, 2001; Kedia and Lahiri, 2007; Cusmano *et al.*, 2009) and competitive advantage (Bettis *et al*., 1992; Jean *et al*, 2008) are some of the strategic outcomes of outsourcing.

2.4.2 Disadvantages of Outsourcing

There are no perfect business practices that could result only in positive gains. The same is true for outsourcing, as it also has possible negative consequences. For example, there are hidden costs, loss of confidentiality of valuable information (Dyer, 1997; Lansdale and Cox, 1997; Li and Choi, 2009) and problems in service quality (Young,

2008). In order to maximize the positive gains from outsourcing, organisations need to make extra efforts to eliminate these problems. Chapter 1 divided the factors affecting outsourcing success into two, which are managerial factors and factors beyond the management control. The following section discusses these factors in detail.

2.5 FACTORS AFFECTING OUTSOURCING SUCCESS

Several studies (e.g. Whipple and Frankel, 2000; Chan and Chin, 2007; Jarvenpaa and Mao, 2008; Rajabzadeh *et al*., 2008) emphasized factors that guarantee the success and sustainability of the supply chain, which are aptly named 'critical success factors' (CSF). For instance, Whipple and Frankel (2000) highlighted five CSFs in strategic alliances, which are trust, senior management support, the ability to meet performance goals, clear goals and partners' compatibility. A proper communication system (Ogden 2006; Chan and Chin, 2007; Rajabzadeh *et al*., 2008) and managing appropriate level relationship with vendors (Donada and Nogatchewsky, 2009) are also key success factors in outsourcing. Qu, Oh and Pinsonneault (2010) explained the value of long term cumulative relationship in the business to business context. This is due to the fact that, a long-term close relationship with vendor is facilitating to the understanding of long-term and short-term goals (Rajabzadeh *et al*., 2008). Rajabzadeh *et al*. (2008) further stated that, a collaborative business success depends on: the recognition of core activities of the organisation, having a full structured contract, having a strategic view, clear vendor selection criteria and continuous process evaluation and improvement. In addition to these factors, Cui *et al.* (2009) claimed that bi-directionality is required to ensure outsourcing success. In this context, bi-directionality is defined as trust and communication, strong partner competence, strong in-house competence, clear problem

definition and incentive alignment. However, The Critical Success Factors (CSF) carries a broader meaning. Boynlon and Zmud (1994, p.19) defined, critical success factors as few things that must go well to ensure success for a manager or an organization, and, therefore, they represent managerial or enterprise area, that must be given special and continuous attention to bring about high performance. CSFs include issues vital to an organization's current operating activities and to its future success. . This study concern only with critical managerial factors, assuming that enterprise factors are unique and its' impact is contextual.

Furthermore, these factors are scattered around functional, behavioural and relational norms. Due to the scattered nature of factors, it does not help services sector managers to plan and implement outsourcing tasks. Some of these factors are considered prerequisites in general management. For example, top management support, better communication and clear problem definition are some of the fundamental functional requirements in the management. There is also the possibility to discover other factors that are prominently affecting outsourcing success.

The scope of this work covers only manageable factors which precisely impact outsourcing success, and those are outlined and discussed in chapter 1. Thus, the following section briefly discuses only the factors.

Manageable Factors

First, *'organizational resource capability' is noted as, the relevant firm's capabilities that have an impact on the process of outsourcing, in influencing a relationship with a vendor'* (Han *et al.*, 2008, p. 33). Consensus on required capabilities could not be formed due to the diversity of tasks. As Lee (2001) pointed out, the ability to scan,

acquisition, assimilation, and exploitation are among a firm's capabilities in IS outsourcing. Han *et al*. (2008) measured the firm's capability in terms of technical, relationship and vendor management perspectives. These capabilities outline the structural dimensions of outsourcing contract.

Lacity *et al*. (2009) stated that outsourcing decision in Information Technology (IT) includes degree of outsourcing, top management commitment and an evaluation process. The top management commitment is regarded as fundamental in general management, while the evaluation process is a part of vendor management activity. Only degree of outsourcing is important in this category. Furthermore, Lacity *et al*. (2009) stated that contractual details, contract type, contract duration and contract size are factors requiring precise articulation. These are contractual characteristics that are dynamic and situational, influenced by both internal and external environmental factors. For example, the contractual period becomes a less reliable factor in determining success, as the agreement duration is attached to other factors such as seasonal variation in demand, or the firm's future strategic movements.

Based on facts above, the contract is identified as a formal document that specifies the degree of outsourcing, and each party's responsibilities. Thus, the outsourcing structural decision includes the decision on outsourcing level, the level of vendor management activities needed and the expected service performance level of the external party.

The degree of outsourcing explains the depth and breadth of outsourced tasks. Higher level of outsourcing does not always result in favourable outcomes (Lacity and Willcocks, 1998), leaving firms to decide on the appropriate level of outsourcing that optimizes outcome(s) (Kotabe *et al*., 2008; Kotabe and Mol, 2009). Next, Han *et al.*

(2008) viewed vendor management capability in the context of a firm's capabilities, which influence outsourcing success. Several studies (e.g. Lacity and Willcocks, 1998; Lee, 2001; Sun *et al*., 2002; Chan and Chin, 2007; Han *et al*., 2008) however, pointed out the direct impact of vendor management capability on outsourcing success.

By having a proper vendor management system, firms would able to curb potential threats in outsourcing (Jean *et al*., 2008) such as, vendors' opportunistic behaviour (Lam and Han, 2005; Bon and Hughes, 2009). It also aligns vendor selection criteria with the outsourcing drives of the firm (Young, 2008; Wadhwa and Ravindran, 2007; Kroes and Ghosh, 2009).

The transaction cost economies theory identified asset specificity (Wang, 2002; Zhang *et al*., 2009; De Vita *et al*., 2009) as one of the determinant factors that influence outsourcing success. Asset specificity refers to, the transferability of assets to an identified transaction. High asset specificity proposes 'insourcing' more than 'outsourcing'; (Watjatrakul, 2005, p. 391). Williamson (1979) highlighted that asset specificity, uncertainty and transaction frequency are the root causes of transaction difficulties. Besides, De Vita *et al*. (2009) discovered that the vendors' low level asset specificity has a negative impact on the relational satisfaction in outsourcing. Eventually, Gonzalez-Diaz *et al*. (2000), Saussier (2000) and Leiblein *et al*. (2002) stated that assets specificity determines the level of outsourcing of the firm, and indirectly affects its success.

Outsourcing intricately connects two organisational cultures in business. Organisational culture represents values, beliefs and working pattern of an organisation. Whipple and Frankel (2000) believed that partners' compatibility with each other plays a major role

in ensuring their success. This assumption has led many (e.g. Lam and Han, 2005; Jarvenpaa and Mao, 2008; Young, 2008; Jean *et al*., 2008) to highlight the importance of compatible organisational cultures in outsourcing, as cultural clashes often contribute to failures and discontinuation of business contracts. The correct vendor is a vendor that will meet and augment the organisation's long-term needs and corporate culture (Wadhwa and Ravindran, 2007).

The vendor's performance is critical to outsourcing success (Carr *et al*., 2008; Young, 2008; Cui *et al., 2009*). However, the level of contribution from vendors is highly dependent on a number of factors. For instance, if the vendor depends upon the buyer firm for a higher level of its sales, they are committed more to the relationship (Carr *et al*., 2008: p. 901). The opposite is also true, in the case where the vendor monopolizes the supply market; the buyer (i.e. focal firm) will need to take necessary actions to initiate maximum gain from the vendor. Despite, the impact of market structure on the leverage, vendor has to align with the contract in order to deliver the agreed service as retention in the business is primary rather than chase for new tenders/business

The vendor's performance basically includes quality and other performance specifications. Those are generally evaluated through SERVQUAL scale (Parasuraman *et al*., 1885:1988). But, it appears to perform weaker in business to business (B2B) contexts (Gounaris, 2005a: b; Lee, G.J 2011). Alternatively, Gounaris (2005a) developed a measurement scale to evaluate vendor's service performance known as INDSERV. This is widely accepted for the evaluation of service performance in B2B context. The scale comprises of four service quality dimensions that a firm expects from its B2B business partners, which are potential quality, hard process quality, soft process quality and output quality. Together, these dimensions explain 22 aspects

(items) of service quality and other performance expectations, which will be further discussed later in this chapter, as well as in Chapter 3.

According to the justifications provided in the previous section 2.5, this study outlines the fact that managing outsourcing success in the service industry has become a matter of managing dependency and governance in-exchange. Accordingly, the aforementioned factors can be explained as the determinants of dependency and governance in exchange. This study applied the resource dependency theory to oversee the organisational dependency, while the social exchange theory is used to interpret the governance in-exchange process. The following section discusses the dependency and governance structures from the perspective of the aforementioned theories in the context of service's outsourcing.

2.6 RESOURCE DEPENDENCY THEORY

The Resource Dependency Theory (RDT) is considered as an economic theory, which focuses on efficiency of resource (Sun *et al*., 2002). Resource Dependency Theory is the study of how the external resources of organizations affect the behavior of the organization. (Pfeffer and Salancik 1978; Pfeffer, 2003). However, it has its roots in the social exchange theory (Al-Natour and Cavusoglu, 2009), and the open system theory (Aldrich, 1999). In a nutshell, RDT explains the latent causes for relationships with external stakeholders (Hessels and Terjesen, 2010), and also is concerned with the notion of effectiveness (Aldrich, 1999). The main focus of RDT is balancing the dependency on external resources in order to balance the firm's leverage (Pfeffer, 2003). RDT perceives resource scarcity as the main cause of seeking external resources (Al-Natour and Cavusoglu, 2009). Therefore, the purpose of external resource

involvement, as explained by RDT is common to any economic organisation, and it has many forms: mergers, alliances, franchise, and outsourcing (Sun *et al*., 2002; Al-Natour and Cavusoglu, 2009; Hessels and Terjesen, 2010). External resource involvement goes beyond 'making deals' and instead designs business models that will work together (Linder, 2004, p. 30), creating interdependence business networks. The purpose of networked business is mutual gains and survival (Petersen *et al*., 2008). Thus, RDT suggests that firms should adjust their boundaries (i.e. scope of operations) in order to overcome the environmental uncertainties, thereby improving performances (Kedia and Lahiri, 2007, p. 30).

Next, RDT outlines several strategies a firm can use to expand their power. For example, they can take the control of resources needed by others, such as make strategic alliances with sole supplier/vendor. It is also helpful if the firm can reduce the level of dependency on vendors (Ulrich and Barney, 1984). Kedia and Lahiri (2007) explained that the use of external resources to manage environmental dynamism succeeded in turning around failing businesses. Therefore, as far as an individual firm is concerned, managing dependency is situational, and it relies on task environmental factors. Participants who can balance their dependencies will be successful in the network (Pfeffer and Salancik, 1978).

Pfeffer and Salancik, (1978) suggested that three basic strategies to manage dependencies are 1) altering organisational interdependence through collaborations, 2) establishing collective structures to form a 'negotiated environment', and 3) using legal, political or social action to form a 'created environment'. These strategies are further discussed in the following section.

2.6.1 Organizational Dependency in Outsourcing

The first strategy explains the fundamental motive of outsourcing. When an organisation outsources a task, they share external resources with another firm(s). Therefore, they have to decide on the appropriate level of external resource involvement (Hessels and Terjesen, 2010). Accordingly, the focal firm can increase or reduce the level of external resource involvement to increase their competitiveness (Hessels and Terjesen, 2010). Likewise, resource dependency theory stresses on strategic choice of resources (Pfeffer and Salancik, 1978; Kedia and Lahiri, 2007).

The second strategy encourages relationship management, and consequently, Petersen *et al*. (2008) stated that, dependency, socialization process, supplier integration and relational capital have a complex set of interrelationships (p. 62). Once a focal firm has a dependency on vendor it increases vendor's contribution to the partnership (Petersen *et al*., 2008). It also leads to the strengthening of relationship and trust with external stakeholders (Pfeffer and Salancik, 1978). This is especially prevalent in the outsourcing of services, where the vendors need a sufficient amount of authority for successful service delivery to the customers (Carr *et al*., 2008).

The third strategy promotes management of dependency through a formal governance mechanism (Al-Natour and Cavusoglu, 2009). The legitimized dependency would be expected to safeguard stakeholders in order to minimize the risk associated with the resource exchange (Hessels and Terjesen, 2010). This is also reflective of the firm's ability to access external resources, and legitimize the extent of control over them. Nevertheless, Al-Natour and Cavusoglu (2009) pointed out that not all dependent relationships create equal performance outcomes (p. 106).

Moreover, the resource dependency theory outlines that the level of firm's dependency relies on the purpose of sharing external resources (Hessels and Terjesen, 2010, p. 206). As noted previously, some of them are: cost benefits (Lam and Han, 2005; Kedia and Lahiri, 2007; Banerjee and Williams, 2009; Kroes and Ghosh, 2009), knowledge transfers (Lee, 2001; Kedia and Lahiri, 2007; Banerjee and Williams, 2009) and focus on core function (Kedia and Lahiri, 2007; Kroes and Ghosh, 2009). As highlighted by the RDT, scarcity of resources becomes the latent motivator of sharing external resources (Al-Natour and Cavusoglu, 2009).

Resources have alternative opportunities to budgetary constraints, making selection of the best resource utilization as crucial. For instance, firms may lack resources such as capital, knowledge, or technology. This will force the firm to choose whether to buy (external) or to produce (internal) resources. A good combination of sourcing destination (i.e. in-source/outsource) will determine organisational performance (Watjatrakul, 2005; Thouin *et al*., 2009; Kotabe and Mol, 2009). Accordingly, RDT provides guidelines on planning resource utilization of organisations. The aforementioned factors hence elaborated the appropriateness of RDT for the context of outsourcing.

2.6.2 Dependency and Degree of Outsourcing

The organisational dependency emerges as a result of the inability of the organisation to accomplish its goals independently (Al-Natour and Cavusoglu, 2009, p. 109*).* Thus, it falls on the manager to take the necessary actions to integrate external resource involvement successfully (Chin *et al*., 2004). RDT defines organisational success in terms of maximizing their power (Ulrich and Barney, 1984). Accordingly, success

becomes a matter of the correct utilization of external resources. Therefore, managers should determine the level of external resource involvement prior to declaring legal collaboration.

The level of external resource involvement is denoted as ‘degree of outsourcing’ in the context of outsourcing. For instance, Sun *et al*. (2002) defined dependency in IS outsourcing as “service receiver’s perceived reliance on the outsourcing vendor” (p. 04). Here, ‘perceived reliance’ portrays the ‘degree of outsourcing’. As noted in Chapter 01, the degree of outsourcing is a combined construct of breadth and depth (Gilley and Rasheed 2000; Espino-Rodrı´guez and Padro´n-Robaina, 2005a).

The degree of outsourcing is basically determined by its costs and benefits (Banerjee and Williams, 2009; Byramjee *et al*., 2010). Pfeffer and Salancik (1978) proposed that there are three factors that influence the level of dependency, which are (1) the level of importance of the resource to the business performance (2) the scarcity of the resources, and (3) the competition between organisations for control of those resources. Therefore, different organisations will have different optimal levels of outsourcing. Altogether, these factors determine the relative importance of the particular task to the business, which will help managers clarify core and non-core activities for their respective firms.

Espino-Rodrı´guez and Padro´n-Robaina (2005a), Kotabe and Murray (2004), and Quinn and Hilmer (1994) suggested that organisations should only outsource non-core functions. Any attempt to outsource the core function must be carefully examined (Alexander and Young, 1996; McCarthy and Anagnostou, 2004; Marshall et *al*., 2007; Jiang *et al*., 2007; Cusmano *et al*., 2009; Wu and Park, 2009). However, recent debates on core and non-core logic are quite neutral. Marshall *et al*. (2007) challenged the value

of using core and non-core logic, and reported that different businesses have different interpretations on what is core and non-core. The logic is inapplicable for extremely dynamic industries. According to Wu and Park (2009) and Leavy (2004), there is no clear boundary that separates core from non-core, due to its ever-changing nature. As a solution, Wu and Park (2009) introduced 'dynamic outsourcing' models instead of 'core and 'non-core logic'. Leavy (2004) further pointed out that the importance of defining core competencies in terms of customer perspective, rather than organisational perspective. Nonetheless, organisations are unique systems, and defining what is core and non-core is unique to each organisation, making it difficult to generalize.

Based on these facts, the degree of outsourcing is becoming the main determinant of managing dependency and it is an initial task of outsourcing plan. The correct blend of breadth and depth of outsourcing is referred as effective degree of outsourcing which brings favourable outcomes for the partnership. The impact of the degree of outsourcing on outsourcing success will be further discussed in the hypothesis development section.

The following examines the value of governance in resource exchange in the outsourcing execution process, and the deduction of factors relating to the governance in outsourcing.

2.7 SOCIAL EXCHANGE THEORY

Social Exchange Theory (SET) serves as a general paradigm for social and anthropology research domain (Zafirovski, 2005). It can be identified as one of the most applicable theories to explain the social network structures and relational norms. SET describes the formation and subsistence of shared responsibilities and mutual

benefits in exchange (Lawler, 2001). As SET is rooted by utilitarianism (Zafirovski, 2005), the exchange processors are outcomes of the actors' efforts on the attempt to satisfy their needs (Cook, 2000). Social Exchange Theory posits that all human relationships are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives (Homans, 1961). Thus, it is clear that human actions are guided by the outcomes; hence relationships are formed for favourable outcomes. Relationships can be identified as the fundamental social unit/network, and it is interdependent on demand and supply of resources (Ruben, 1998). Thus, modern social exchange theorists borrowed 'concepts and principles from microeconomics' (Cook, 2000, p. 687) to analyse social transactions.

SET also facilitates the study of a variety of social exchange aspects. Firstly, it includes some elements of transaction cost economies perspective. For instance, SET analysis of microeconomic activities (Blau, 1964), considers the dynamic nature of interaction, and potential opportunistic behaviour (Montgomery, 1996). Next, Chen and Choi (2005) applied SET to oversee the knowledge exchange, and mentioned that knowledge sharing has become a key aspect of exchange with the increase in information technology. However, Zafirovski (2005) critiqued the capacity of SET to analyse economic exchange, as it violates the diminishing marginal utility theory. Falsifying the argument, it has been discussed under both economic exchange, as well as social exchange perspectives (Ruben, 1998; Cook and Rice, 2003). In fact, both types are important for business transactions.

However, Blau (1964) and Sun *et al*. (2002) stated that, formal contracts alone would not satisfy partners completely, hence the need to utilize relational aspects for a successful exchange. Therefore, the resource exchange incorporates exchange of

relationship as well. As far as the link between social and economic exchange is concerned, Cook and Rice (2003) mentioned that, the base of SET lies on the 'Game Theory'. They explained, *power as a function of social relations that initiate subsequent development of micro-theories connecting social networks to power* (p. 57). Accordingly, another aspect of social relationship is to maximize the power of social network. The previous section, however, explains managing power in the outsourcing context. The "resource exchange theory" is also considered a branch of SET (Al-Natour and Cavusoglu, 2009). Based on these facts, outsourcing can be interpreted as a microeconomic activity. Power is defined as the strength of the competencies for competitiveness, which is the main focus of resource based view as well. As a whole, SET covers numerous important aspects of resource exchange.

Blau (1964) explained social exchange process as an interpersonal interaction that actors form social relations based on the benefits and costs they provide one another. 'Actors' may be any kind of meaningful social unit, including individuals, collective entities, firms, organisations, and divisions within an organisation (Cook and Rice, 2003). Therefore, SET provides a realistic and practical platform to study social networks. Moreover, there is an emerging trend of overseeing management and organisational phenomena, based on SET (Ruben, 1998; Chen and Choi, 2005), as it concerns the human/behavioural element, and covers a wide range of epistemology.

Furthermore, Lawler (2001) mentioned 'self-efficacy' in social exchange, which simply means strong positive emotions among parties to produce the most favourable outcomes. Outsourcing is basically a B2B exchange process, which aims to produce favourable outcomes for both the parties involved. In the process of exchange, each party expects to receive valuable outcomes (Lee, 2001). Thus, self-efficacy is driven by

the expected outcomes. The success of outsourcing also depends on all participants in the exchange, and as a result partners are depending on each other (Sierra and McQuitty, 2005). The absence of self-efficacy results in negative emotions, which causes firms to ultimately switch vendors (Donada and Nogatchewsky, 2009). Consequently, there should be a mutual gratification of individuals or parties involved in the transaction in-order to obtain the expected benefits (Zafirovski, 2005).

With regards to the services outsourcing, Sierra and McQuitty (2005) stated that, '*there is a natural social exchange in services due to the inseparable nature of consumption and production of it'* (p. 396). Thus, it requires the maintenance of a long-term, trustworthy (Dyer, 1997; Marshall *et al*., 2007; Cui *et al*., 2009), and collaborative relationship with the vendor (Lee, 2001; Sun *et al*., 2002). Indeed, this depends on the compatibility of the vendor with the focal firm in terms of working pattern and strategic focus (Chamberland, 2003; Chan and Chin, 2007; Wadhwa and Ravindran, 2007).

The services outsourcing is defined as 'transfer of power of performing an internal business activity to the vendor'. Although the transfer of power is unobservable (Zafirovski, 2005), Li and Choi (2009) developed a model to represent the transfer of power in the triadic relationship in services outsourcing. Next, Sun *et al*. (2002), pointed out certain assumptions applied in the social exchange models, which are 1) social behaviour is a series of exchanges 2) individuals attempt to maximize their rewards and minimize their costs and 3) when individuals receive rewards from others, they feel obligated to reciprocate. These assumptions demonstrate the latent reasons of social exchange relationships. Therefore, SET is the most suitable candidate to oversee the exchange process in services outsourcing, as it has a multidisciplinary approach, which could explain gains and losses in exchange, the motivation behind exchange, and

it also integrates basic principles of human behaviour and economic exchange (Ruben, 1998).

Accordingly, SET compelled two types of manageable exchanges, which are the negotiated and reciprocal exchanges. Basically, 'negotiated exchange' covers economic aspects, and 'reciprocal exchange' represents social aspects of resource exchange (Sun *et al*., 2002; Ferguson *et al*., 2005). Based on that, Lacity *et al*. (2009) highlighted two types of governances in outsourcing; 1) contractual governance which manages negotiated exchange, and 2) relational governance which deals with reciprocal exchange. The following section further discusses the governance mechanisms involved in resource exchange process of outsourcing.

2.7.1 Governance in Outsourcing Exchange

Homans (1961) stated that, the social exchange process is based on mutual exchange of reinforcement and relationship that could be terminated due to the failure of reinforcement. Therefore, any type of successful social exchange process is required to fulfil each other's expectations.

As far as resource exchange in outsourcing is concerned, it is pertinent to maintain proper contractual and relational governance for favourable outcomes (Sun *et al*., 2002; Ferguson *et al*., 2005; Lacity *et al*., 2009). Day (2000) illustrated this, in a relationship spectrum, noted as 'transactional-relational continuum'. It describes two opposing governance structures in exchange (Ferguson *et al*., 2005; Lacoste and Fenneteau, 2008). Business to business transactions comprise of exchange of resources as well as relationships, and managing both aspects is important, as they result in different types of benefits (Ford, 2002). For instance, pure contractual governance that is found to be

problematic is required to maintain a sufficient relationship with the vendors (Sun *et al*., 2002; Young, 2008). However, the deployment of relational resources is a fundamental requirement for a successful business transaction where tangible resources are secondary in services. Thus, SET is applicable in explaining the exchange of resources in the service industry. However, Lacoste and Fenneteau, (2008) proposed to balance both aspects, as they are nurturing each other. The next sections explain contractual and relational governance in services outsourcing.

2.7.2 Contractual Governance

A contract is recognised as a formal governance mechanism of interests. The purpose of a formal contract is to reduce the risk associated with resource exchange (Williamson, 1996). It includes detailed clauses in the outsourcing contract, such as clauses that specify prices, service levels, benchmarking, warranties, and penalties for non-performance (Poppo and Zenger, 2002; Lacity *et al*., 2011). However, the transaction cost economies (TCE) domain perceived contractual governance as terms of a specific set of transaction responsibilities (Williamson, 1996; Ferguson *et al*., 2005). The transaction responsibilities are not only applicable to the vendor, but also demonstrate the focal firm's role and responsibilities in the contractual relationship. Thus, the contract basically represents each party's role and responsibilities in performing specific tasks. Having a well-defined contract is crucial for service outsourcing, as the resources exchange is intangible and simultaneous. According to Al-Natour and Cavusoglu (2009) quoted by Teece (1992) *'agreements are characterized by the commitment of two or more firms to reach a common goal entailing the pooling of their resources and activities'* (p. 19). However, Li and Choi (2009) extended the buyer's role as a 'bridge' between the vendor and the final customer in service delivery.

As far as the bilateral relationship is concerned, both the focal firm and the vendor have their own responsibilities in ensuring outsourcing success. As noted in the problem statement, the focal firm's responsibility is to carry out vendor management activities. Then, the vendor is responsible to deliver the services at the agreed level of quality. Basically, outsourcing success is determined by the 'vendor management capability' of the firm. Additionally, the vendor's role is stressed in services, due to the potential and inherent variability of services, which have may have errors that are often visible to the customers (Armistead, 1989, p. 248). Thus, producing a successful and competitive service is the responsibility of both the focal firm and the vendor.

However, achieving performance outcomes is recognised as the ultimate objective of economic transactions. Whipple and Frankel (2000) further highlighted a win-win situation, where both parties could achieve their performance objectives. Therefore, outsourcing as a type of joint business venture requires governance towards achieving common business goals, which indirectly benefited the vendors. This connection divides the responsibility equally between the focal firms and the vendors (Sun *et al*., 2002; Carr *et al*., 2008).

The focal firm's capability in performing vendor management activities and the vendor's responsibility to deliver the agreed service at the agreed quality has been identified as the main aspects of contractual governance in services outsourcing. The impact of these two variables on outsourcing success will be discussed in the hypothesis development section separately.

2.7.3 Relational Governances

Lawler (2001) and Sierra and McQuitty (2005) reported that the greater the responsibility that each party of the exchange process owned, the stronger emotional attachment they will have to a particular unit of social exchange. The strong positive emotions create a pleasant working environment for the successful resource exchange. The perceived benefits and the perceived risks of outsourcing determine the level of relationship required. It is empirically proven that, an effective supply chain relies on the success of relationship management (Croom *et al*., 2000; Sun *et al*., 2002; Zhang *et al*., 2009). Kedia and Lahiri (2007) introduced three types of partnerships in international outsourcing. These are tactical, strategic and transformational partnerships, all of which are often discussed from the perspectives of transaction cost economies, resource based view and resource dependency theory.

As SET explains, a sustainable relationship might develop over time with the reciprocal stimuli received by the partners in the exchange process (Homans, 1961; Zafirovski, 2005; Ferguson *et al*., 2005). In the modern business context, firms operate in a networked business environment, based on mutual understanding and trust. Thus, relational resources are equally important as tangible resources. Bernardes (2010) perceived relational resources as social capital in business. For example, the level of trust and commitment (Lee, 2001; Han *et al*., 2008;Lahiri *et al*., 2009; Lai *et al*., 2009), the level of knowledge and information sharing (Marshall *et al*., 2007; Han *et al*., 2008), quality of communication (Han *et al*., 2008; Park-Poaps and Rees, 2010), symmetry of information (Bettis *et al.*, 1992;Donada and Nogatchewsky, 2009; Banerjee and Williams, 2009), and risk sharing (Lee, 2001; Cui *et al*., 2009) are relational investments.

Dyer (1997) described the relational governance mechanisms of Nissan Inc. The company assisted one of their suppliers/vendors (seats supplier) to build a plant adjacent to its factory. The main purpose was to minimise transportation cost, reduce delivery time, and increase manufacturing flexibility. At the same time it enhances the vendor's production capacity. This is a realistic example of an extended level of relational governance. Finally, inter-organisational relationships produce social learning experiences (Lee and Kim, 1999) in order to be a competitive player in the market.

Nevertheless, the primary objective of business collaborations is to develop a sustainable and profitable relationship, and thereby deliver a satisfactory product or service to the end customer (Gounaris, 2005; Young, 2008). As noted above, investments on social capital help firms building long-term sustainable relationships with vendors (Lee, 2001; Sun *et al.*, 2002; Bernardes, 2010). Thus, relational governance has a notable impact on outsourcing success.

Next, the success of managing dependency and exchange is influenced by the extent to which the vendor is compatible with the firm. Both the resource dependency theory and the social exchange theory highlighted the importance of compatibility of partners. The next section explains the theoretical background of compatibility, in the context of services outsourcing.

2.8 THEORETICAL OVERVIEW OF PARTNER'S COMPATIBILITY.

The notion of partner's compatibility combines both the theoretical aspects of resource dependency theory (RDT) and social exchange theory (SET). The basic tenet of RDT is that a firm intends to access external resources to remedy resource deficiencies (Hessels and Terjesen, 2010). Thereby, firms depend on external resource providers. In RDT's perspective, the compatible partners have complementary dependency, rather than a competing dependency. For example, Mohr and Spekman (1994) defined partnership as a purposive strategic relationship, where partners share compatible goals, strive for mutual benefits and acknowledge a high level of mutual interdependence (p.135). Furthermore, RDT stresses the partner's role in guaranteeing the success of interdependency. In RDT perspective, outsourcing involves the commitment of two parties for the purpose of achieving common objectives with pooled resources (Al-Natour and Cavusoglu, 2009). Based on these facts, compatibility becomes a prerequisite of complementary dependency and hence acknowledged mutual interdependency.

Since RDT assumes that the managers make active choice for organisational wellbeing (Hessels and Terjesen, 2010), they have to select a vendor who can contribute to the requirements of the partnership. It is supported to the extent that vendor is having required competencies, and complementary organisational culture (Whipple and Frankel, 2000; Ogden, 2006; Donada and Nogatchewsky, 2009). Accordingly, RDT has identified the need of a compatible partner to enhance the effectiveness of resource utilisation. Otherwise, the organisational dependency may not produce a value for their dependents, and it also violates the core ideology of sharing external resources.

One of the basic assumptions of social exchange theory is the mutual gratification of individuals or parties involved in the transaction (Zafirovski, 2005). Only compatible partners could offer mutual gratifications to each other. Therefore, the success of transactions relies on the compatibility of partners (i.e. the firm and the vendor) in outsourcing (Chan and Chin, 2007). An empirical study based on the hotel sector in China, found that the incompatibility of corporate cultures between local management and vendors as an obstacle to the successful execution of outsourcing strategy (Lam and Han, 2005). Therefore, compatible operating idiosyncrasies among partners are essential for an effective supply chain management (Shamdasani and Sheth, 1995; Whipple and Frankel, 2000; Lam and Han, 2005; Jarvenpaa and Mao, 2008; Liou and Chuang, 2010).

RDT perceives that the compatibility ensures the survival of the partnership, while SET perceives it as a requirement for a successive exchange. Therefore, both theories advocate having a compatible vendor for outsourcing. This is critical in services outsourcing, as the vendor directly interacts with customers, especially in direct service encounters. The unique nature of services outsourcing emerged as a necessity of having a compatible partner to overcome issues dealing with the services outsourcing.

Compatibility has been operationalized and studied with different terminologies, such as congruence, match and strategic fit. The partners' compatibility is identified as a key success factor in outsourcing (Whipple and Frankel, 2000; Jarvenpaa and Mao, 2008). The core challenge is determining the level of the potential partner's compatibility. The compatibility of tangible resources is visible, but, as far as services are concerned, partners are usually sharing intangible resources such as knowledge and competencies. These resources are bundled with organisational cultural elements and their strategic orientations, making it difficult to determine the compatibility of the services, which are

intangible and concurrent. However, this is essential, as it affects the dependent's survival and mutual benefits.

Initially, Harrigan (1985) categorised compatibility into three types; 1) cultural, 2) strategic and 3) functional. Shamdasani and Sheth (1995) found strategic compatibility to be an important factor for the satisfaction and the continuity in marketing alliances. They viewed "strategic compatibility" of partners with respect to the complementary goals and similar orientation. However, Roh *et al.* (2008) had a much broader explanation on organisational culture. To them, the organisational culture consists of 1) artefacts, 2) espoused values and 3) basic underlying assumptions. Artefacts refer to the visible components, such as organisational structure, which elaborates hierarchical level, flow of authority, and span of control. It also includes organisational practices such as language, clothing, manners, and technology (Schein, 1996). Roh *et al.* (2008) further divided espoused values into strategies, goals, and philosophies, which are less visible. Underlying assumptions are hypothetical terms, which form cognitive stability (Schein, 1996). However, Roh *et al.* (2008) have included strategic component of compatibility as an element of culture, while Harrigan (1985) separated strategic orientation from the culture. In fact, some other scholars mixed partnership quality characteristics with partners' compatibility. For an instance, Liou and Chuang (2010) measured compatibility in terms of relationship, flexibility and information sharing. Here, only flexibility can be considered an element of compatibility, which partially explains the firm's competitive priority. Wasti *et al.* (2006) combined partnership's quality and compatibility aspects into a different variable called 'social climate'.

However, recent business research promotes compatibility of competitive priorities. Kroes and Ghosh (2009) recommended the importance of maintaining congruence between firm's outsourcing drives with firm's competitive priorities. Thus, there should be a match between outsourcing drives and vendor selection. This ensures that, the selected vendor is possibly aligned with the focal firm's competitive priorities. Accordingly, Gilley and Rasheed (2000) and Espino-Rodrı´guez and Padro´n-Robaina (2004) found that firm's operation strategies (i.e. competitive priorities) have a moderating effect on outsourcing decisions.

Consequently, there are frustrating and fragmented arguments on classifying compatibility aspects. To simplify the aforementioned debates, the study defined organisational culture as a set of operating philosophies and management style that strive for common goal(s). Then, the competitive priorities are a 'portfolio of capabilities'. Competitive priorities are hedging goals to a particular direction, and deploying organisational resources according to these priorities (Roh *et al.,* 2008). These are commonly identified in terms of cost, quality, flexibility and on-time service delivery (Espino-Rodrı´guez and Padro´n-Robaina, 2004; Chase *et al.,* 2006; Jarvenpaa and Mao, 2008; Kroes and Ghosh, 2009). In short, the study identified two types of compatibility aspects; 1) culture, and 2) competitive priorities for empirical investigation.

As a whole, it is identified that the services outsourcing context needed separate treatment as the fundamentals of services differ from those of manufacturing sectors. It is also recognised that managing dependency and exchange are crucial elements that ensure outsourcing success. The previous sections further explained the indirect impact of partnership's quality and partners' compatibility on outsourcing success. Based on

these facts, the next section attempts to build a theoretical relationship(s) among variables.

2.9 DEVELOPMENT OF HYPOTHESIS AND RESEARCH MODEL

From the review of epistemological background of the study, it is apparent that there are sufficient supports for the consideration of the five variables (i.e. degree of outsourcing, vendor management capability, vendor's service performance, partnership quality and partner's compatibility) as critical managerial factors that are expected to influence (directly/indirectly) the dependent variable of outsourcing success. Although numerous studies on outsourcing success have been conducted over the decades, discrepancies concerning the extent to which outsourcing success can be managed in the services context continue to elude researchers. Accordingly, the study has three research questions that will be answered through five research objectives. This section attempts to develop the research model for determining outsourcing success in the context of services.

First, the following section explains the theoretical relationships among the identified variables in order to develop research hypotheses for empirical verifications. The flow of discussion will be guided by the five research objectives. The theoretical framework is then developed, based on the theoretical relationships constructed.

2.9.1 Hypotheses Development

The hypotheses of this study are derived based of the research objectives. The first research objective is to investigate the impact of the degree of outsourcing on the outsourcing success in services. There is a positive correlation between the degree of outsourcing and organisational performance (Espino-Rodrı´guez and Padro´n-Robaina, 2004; Kotabe and Mol, 2009). Gilley and Rasheed (2000) and Leiblein *et al*. (2002) argued that the relationship is moderated by environmental factors, for example outsourcing produces greater organisational performance outcomes for the firms that pursue cost leadership and innovative differentiation strategy (Gilley and Rasheed, 2000). Espino-Rodrı´guez and Padro´n-Robaina (2004) further discovered that hotels expecting to gain greater strategic performance outcomes have a greater propensity to outsource.

In addition, Kotabe and Mol (2009) had different views regarding performance outcomes of outsourcing. They found a direct impact between the degree of outsourcing and the financial performance, of which the correlation is not linear. The degree of outsourcing has a curvilinear relationship with financial performance; hence there is an optimal level of outsourcing (Kotabe and Mol, 2009). Therefore there is a need to select the appropriate level of outsourcing, as the negative outcomes could occur after the optimal level outsourcing is reached (Kotabe and Mol, 2009; Espino-Rodrı´guez and Padro´n-Robaina, 2004).

Accordingly, numerous studies empirically proved the positive correlation between the degrees of outsourcing and the organisational performance. For instance, Fixler and Siegel (1999) reported that the magnitude of growth in output is positively correlated with the magnitude of outsourcing. This observation has been consistent over the

decades. Lately, Kim *et al*. (2005) discovered that the partners' interdependence (i.e. degree of outsourcing) is positively associated with the extent of electronic information transfer capability in the supply chain relationship. As previous stated (refer section 2.6.2), the degree of outsourcing is a combined construct of breadth and depth of outsourcing.

Though the isolation of breadth and depth is less meaningful (Gilley and Rasheed, 2000), they have been addressed separately in practice, as they are associated with series of tasks. The breadth reflects the number of activities outsourced as a percentage of total number of activities that a firm is performing (Gilley and Rasheed, 2000). Some firms are willing to outsource a greater proportion of activities than others. This basically depends on the firms' motivation and their resource capability (Ozcelik and Altinkemer, 2009). Depth refers to the level of the vendor's involvement, making it a capability benchmark of both parties. Based on the breadth and the depth, a firm can approach different levels of degrees of outsourcing. These different combinations may result in different levels of success. Thus, it is worthwhile to understand the effect of different combinations of degree of outsourcing on performance. Therefore, this study aims to investigate,

1. The influence of the degree of outsourcing (D X B) on the outsourcing success.
2. The influence of the different levels of breadth (B) and depth (D) of outsourcing on the outsourcing success.

Accordingly, the following hypothesis is developed to test the Research Objective 1.

Research Objective 01:

To investigate the impact of degree of outsourcing on outsourcing success in services.

Alternative Hypothesis

H1: The degree of outsourcing (DOO) influences the outsourcing success (OS).

The study would carry out relevant statistical analysis to identify the relative importance or the differences of breadth and depth in influencing the outsourcing success. Subsequently, post-hoc analysis would assist in determining the impact of the different levels of combinations of breadth and depth of outsourcing on the outsourcing success.

The second objective is to verify the relationship between vendor management capability and outsourcing success in services. Sourcing decision mainly depends on the firm's capabilities and resources (Barney, 1999). Moreover, managing business is the primary responsibility of the company, which cannot be totally outsourced (Whipple and Frankel, 2000; Weidenbaum, 2005). As Kotabe and Mol (2009) suggested, outsourcing increases the firm's performance, and identified an efficient way of addressing organisational competitiveness (Rajabzadeh *et al*., 2008). Therefore, the focal firm is recognised as a fundamental key decision maker (Weidenbaum, 2005) and the executor of value creation process in outsourcing (Petersen, 2005; Byramjee *et al*., 2010). Their ability to manage the outsourcing task and vendor is denoted as vendor management capability.

Outsourcing is perceived as a method of resource allocation and asset management (Quelin and Duhamel, 2003), which involves top management decisions affecting company-wide resource base (Kotabe and Mol, 2009). The focal firm needs to manage and control the vendor in order to ensure a high level of service quality (Li and Choi,

2009, p. 35). It is more critical in services than in manufacturing firms, as vendor is directly involved with the end customer (Li and Choi, 2009).

Chan and Chin (2007) stressed that a strong vendor management system is a key success factor in strategic outsourcing. As highlighted by many scholars (e.g. Lee, 2001; Lam and Han, 2005; Chan and Chin, 2007; Rajabzadeh *et al*., 2008; Petersen *et al*., 2008; Han *et al*., 2008; Lacity *et al*., 2009) the vendor management capability is the main determinant that leads to outsourcing success. In a more constructive point of view, vendor management is taken as a corrective action for improvements (Chan and Chin, 2007).

The reduction of the supply chain base however, facilitates a closer 'vendor monitoring' system, and enhances the supply chain performance (Ogden, 2006). Likewise, it is empirically proven that various characteristics of the vendor management system also positively influence outsourcing success. However, a considerable amount of resources is needed to monitor the outsourced businesses (Byramjee *et al.*, 2010).

In summary, vendor management has been identified as a fundamental component for outsourcing success (Chan and Chin, 2007; Han *et al*., 2008; Rajabzadeh *et al*., 2008). This study attempts to verify the relationship in the context of services outsourcing. Accordingly, a directional hypothesis is established to verify the impact of vendor management capability on outsourcing success based on the second objective of the study.

Research Objective 2:

To verify the positive relationship between vendor management capability and outsourcing success in services.

Alternative Hypothesis

H2: There is a positive relationship between vendor management capability (VM) and outsourcing success (OS).

The third objective of the study is to examine the impact of vendor's service performance on outsourcing success in services. As far as services are concerned, outsourcing produces a structural change in performing businesses (Li and Choi, 2008). For instance, the focal firm transfers the responsibility (full or partial) of delivering the service and satisfying the certain requirements of customer to the vendor. The transfer of responsibility however associated with risks. This is due to the fact that, the services are simultaneous and hence there is less probability to re-establish customer satisfaction if the service fails at the first time. Even though the 'recovery paradox' explains that the satisfaction after recovery is higher than the initial satisfaction (De Matos *et al*., 2007), it still incurs costs in terms of time, material, and labour. The issue becomes more serious if the activity is outsourced. This is because there might be contractual limits, damages of trusts between business partners, and compensation issues. Repeated negative experiences may result in the focal firm to switch the vendor (Dyer, 1997).

The role of outsourcing has changed from traditional purchasing to strategic activity (Chan and Chin, 2007). Simultaneously, the vendor's role is expanded to that of business partner dealing with operational control of functions (Rajabzadeh *et al*., 2008). The vendor's contribution should provide value as a competitive advantage (Liou and

Chuang, 2010; Miles and Snow, 2007). Indeed, some recent studies have already identified the strategic value of the vendors' role in determining collaborative business success. Whipple and Frankel (2000) carried out an empirical study on strategic alliance success factors for both the buyer and the vendor. According to their findings, the vendor's ability to meet performance expectations can be identified as a significant key success factor. They further viewed that the vendors' performance has greater impact on the supply chain efficiency and the focal firm's performance.

In a modern business context, outsourcing has been recognised as a value creation strategy that enhances organisational competitiveness (Petersen *et al*., 2005; Rajabzadeh *et al*., 2008; Byramjee *et al*., 2010). Therefore, the vendor is identified as a specialist, who can contribute to 'breakthrough ideas or activities' (Cui *et al*., 2009, p. 60). Accordingly, outsourcing and vendor's performance are two strongly related phenomena (Takeishi, 2001). Outsourcing can be a better option if the vendor can provide the expected support to the focal firm for a better competitive position than the firm can accomplish on its own (Venkatesan, 1992; Rajabzadeh *et al*., 2008; Carr *et al*., 2008).

Based on these arguments, it is clear that the vendors' service performance directly impacts outsourcing success. Accordingly, the influence of the vendor's service performance on outsourcing success can be hypothesized to test the third objective of the study.

Research Objective 3:

To examine the impact of vendor's service performance on outsourcing success in services

Alternative Hypothesis

H3: There is an association between vendor's service performance (VSP) and outsourcing success (OS).

The fourth objective is to investigate the moderating effect of partnership's quality on the relationships between both vendor management capability and vendor's service performance with the outsourcing success.

Modern business has moved away from power based hierarchical relationship to mutual development based partnership (Chen and Paulraj, 2004: p.125). Accordingly, 'partnership quality' has been identified as one of the most important determinants of outsourcing success (Chi, 1994; Dyer, 1997; Kedia and Lahiri, 2007; Marshall *et al*., 2007; Han *et al*., 2008; Li and Choi, 2009; Cui *et al*., 2009; De Vita *et al*., 2010). Lee (2001) defined partnership quality as 'an inter-organisational relationship to achieve shared goals. Establishing a limited number of supplier base (Ogden, 2006; Faes and Matthyssens, 2009) helps build close and long-term relationships rather than arms-length contractual relationship, for better performance (Lam and Han, 2005; Zhang *et al*., 2009; Byramjee *et al*., 2010). Consequently, Lahiri *et al*. (2009) viewed partnership quality as a relational resource, which affects the focal firm's performance.

However, Byramjee *et al*. (2010) proposed a moderating impact of partnership quality on 'total value orientation' of the business. As explained in SET, the actors' role in the exchange is determined by the reciprocal stimulus they receive (Cook and Rice, 2003;

Zafirovski, 2005). The subsequent impact of partnership characteristics is visible only when the resource exchange starts. More importantly, relational governance cannot stand alone to produce economic benefits (Sun *et al*., 2002; Zafirovski, 2005). Instead, Ferguson *et al*. (2005) discovered that greater relational governance results in greater exchange performance in the banking industry. This means that the magnitude of partnership quality is associated with the magnitude of success of exchange.

SET perceived mutual reinforcement as a facilitator for achieving mutual benefits in exchange (Homans, 1961; Cook and Rice, 2003; Zafirovski, 2005). In agreement with scholars (Lee, 2001; Petersen *et al*., 2005; Sun *et al*., 2008; Han *et al*., 2008; Lai *et al*., 2009; Lahiri *et al*., 2009), the level of trust and commitment between a buyer and a vendor affects the effectiveness of the integrated supply chain performance. Despite 'trust' and 'commitment', there is a wide range of other partnership characteristics discussed in literature. The level of sharing information and knowledge (Marshall *et al*., 2007; Han *et al*., 2008), risk sharing (Cui *et al*., 2009; Lee, 2001) and collaborative participation (Han *et al*., 2008), are some examples.

Concluding the facts, partnership quality is noted as an integrated construct of trust, commitment and cooperativeness of partners to the partnership. With respect to the role of partnership quality, it does not produce economic benefits alone, and it only commences once the resource exchange started. This confirms that partnership quality affects the effectiveness of resource exchange.

Managing mechanism of resource exchange is identified as contractual governance. Therefore, the study proposes a moderating effect (Byramjee *et al*., 2010) of relational governance (i.e. partnership quality) on the relationship between contractual governance

and outsourcing success. More specifically, vendor management capability and vendor's service performance are identified as the main elements of contractual governance in services. Thus, partnership quality moderates the relationships between 1) vendor management capability and outsourcing success, 2) vendors' service performance and outsourcing success. Based on these arguments and facts above, the study deduced the following hypotheses (H4 and H6) which are derived from the fourth objective of the study. Supplementary hypotheses (H5 and H7) are also developed to test the impact of each dimension of the partnership quality construct for the same relationships.

Research Objective 4:

To investigate the moderating effect of partnership quality (PQ) on the relationships between 1) vendor management capability (VM) and outsourcing success (OS), 2) vendor's service performance (VSP) and outsourcing success (OS).

Alternative Hypotheses

H4: The relationship between vendor management capability and outsourcing success is moderated by partnership quality.

H5: The relationship between vendor management capability and outsourcing success is moderated by a) trust between partners in the partnership. b) commitment of partners to the partnership. and c) cooperativeness of partners to the partnership.

H6: The relationship between vendor's service performance and outsourcing success is moderated by partnership quality.

H7: The relationship between vendor's service performance and outsourcing success is moderated by a) trust between partners in the partnership. b) commitment of partners to the partnership. and c) cooperativeness of partners to the partnership.

The fifth research objective of the study is to investigate the moderating role of partners' compatibility on the outsourcing success in services. Literature recommends selecting a compatible vendor at the initial stages of outsourcing (Shamdasani and Sheth, 1994; Chamberland, 2003). However, there are some practical issues during selection, such as, difficulty in quantifying and observing evidences for compatibility of the vendor until the service is actually performed (Kannan and Tan, 2004). It is hard to demonstrate prototypes of services and hence the true nature of the vendor is also difficult to recognise prior to the collaboration (Kannan and Tan, 2004; Wadhwa and Ravindran, 2007). Despite the issues in selecting a compatible partner, it becomes '*a crucial element which affects the extent to which orientations, abilities and activities of organizations can be integrated successfully* (Shamdasani and Sheth, 1994, p.11). Therefore, both the vendors and service firms should make attempt to examine each other's' roles and functions.

Referring to literature, there are two main components of compatibility, which determine the extent of orientations, abilities and activities of partnership. First, the congruence of competitive priories is identified. Competitive priorities are direct manifestations of strategic orientations (Kannan and Tan, 2004; Kroes and Ghosh, 2009), hence different orientations may result in different outcomes. Outsourcing

becomes a mutual effort and hence both firms should have the same strategic orientation. Moreover, the vendor performs the service delivery on behalf of the focal firm. Thus, there should be a similarity of competitive priorities between the focal firm and the vendor that align activities to a same direction. This is vital for a successful exchange.

Next, the divergence of organisational cultures is recognised as one of the main barriers to an alliance's success (Whipple and Frankel, 2000; Lam and Han, 2005; Roh *et al*., 2008). In terms of meta-theoretical thinking of human nature in management research (Burrell and Morgan, 1979), a partner's compatibility can be distinguished as 'voluntarism'. This demonstrates that human actions arise out of culturally derived meanings (*ibid*). Often, employees' actions which aim for immediate economic returns are guided by organisational culture (Donada and Nogatchewsky, 2009). As a result, partners' differences are obvious. Roh *et al*. (2008), Jean *et al*. (2008) and Daityari *et al*. (2008) therefore, stressed on altering organisational culture in order to adapt the partnership requirements, as it facilitates positive gains throughout the duration of partnership. Additionally, events such as gatherings and workshops to communicate and display each other's cultures would also facilitate the understanding of partners' cultures (Daityari *et al*., 2008). Some organisations train their suppliers in order increase their agility with organisations' climate and culture (Carr *et al*., 2006). Likewise, adjusting cultural compatibility in an on-going outsourcing contract will enhance the effectiveness of any attempts that are taken to ensure outsourcing success (Kannan and Tan, 2004; Tallon, 2008; Jean *et al*., 2008; Daityari *et al*., 2008).

In fact, firms cannot accurately determine the most appropriate vendor at the beginning, and therefore, unable to decide on the accurate level of dependencies (Kannan and Tan, 2004). For this reason, the same degree of outsourcing may result in different outcomes for vendors with different level of compatibilities. Working with a business partner who is not aligned with the firm's business culture and strategic movements is a challenge (Wadhwa and Ravindran, 2007). For example, focal firms may need to spend more time, attention and money for vendor management activities in order to direct the vendor with the objectives of outsourcing. With regards to the vendor's service performance, vendors can contribute more to the firm, if their strategic orientation and business culture is compatible with the focal firm (Carr *et al*., 2006; Liou and Chuang, 2010; Wadhwa and Ravindran, 2007).

In summary, the role of partners' compatibility for on-going outsourcing context has yet to be established. However, it is operationalised in terms of compatibility of culture and competitive priorities of vendor(s) and the focal firm. Therefore, this study aims to empirically investigate the moderating role of compatibility in the services' outsourcing context. The following hypotheses have been derived from the fifth objective of the study. Particularly, the influence of the degree of outsourcing, vendor management capability, and vendor's service performance on the outsourcing success may vary with the level of compatibility between partners. Supplementary hypotheses would test the impact of each dimension of compatibility on the above relationships.

Research Objective 05

To investigate the moderating effect of partners' compatibility (CP) on the relationships between (1) degree of outsourcing (DOO) and outsourcing success (OS), (2) vendor management capability (VM) and outsourcing success (OS), and (3) vendors' service performance(VSP) and outsourcing success (OS).

Alternative Hypotheses:

H8: Partners' compatibility moderates the relationship between degree of outsourcing and outsourcing success.

H8a: Cultural compatibility moderates the relationship between degree of outsourcing and outsourcing success.

H8b: Compatibility of competitive priorities moderates the relationship between degree of outsourcing and outsourcing success.

H9: Partners' compatibility moderates the relationship between vendor management capability and outsourcing success.

H9a: Cultural compatibility moderates the relationship between vendor management capability and outsourcing success.

H9b: Compatibility of competitive priorities moderates the relationship between vendor management capability and outsourcing success.

H10: Partners' compatibility moderates the relationship between vendor's service performance and outsourcing success.

H10a: Cultural compatibility moderates the relationship between vendor's service performance and outsourcing success.

H10b: Compatibility of competitive priorities moderates the relationship between vendor's service performance and outsourcing success.

In total, there are twenty hypotheses developed and would be tested from five research objectives. Figure 2.3 depicts the model of research framework which contains all the variables that would be examined and the hypotheses that would be tested.

2.9.2 The Research Model

From the discussion above, the research model of this study is developed. It is shown in Figure 2.3.

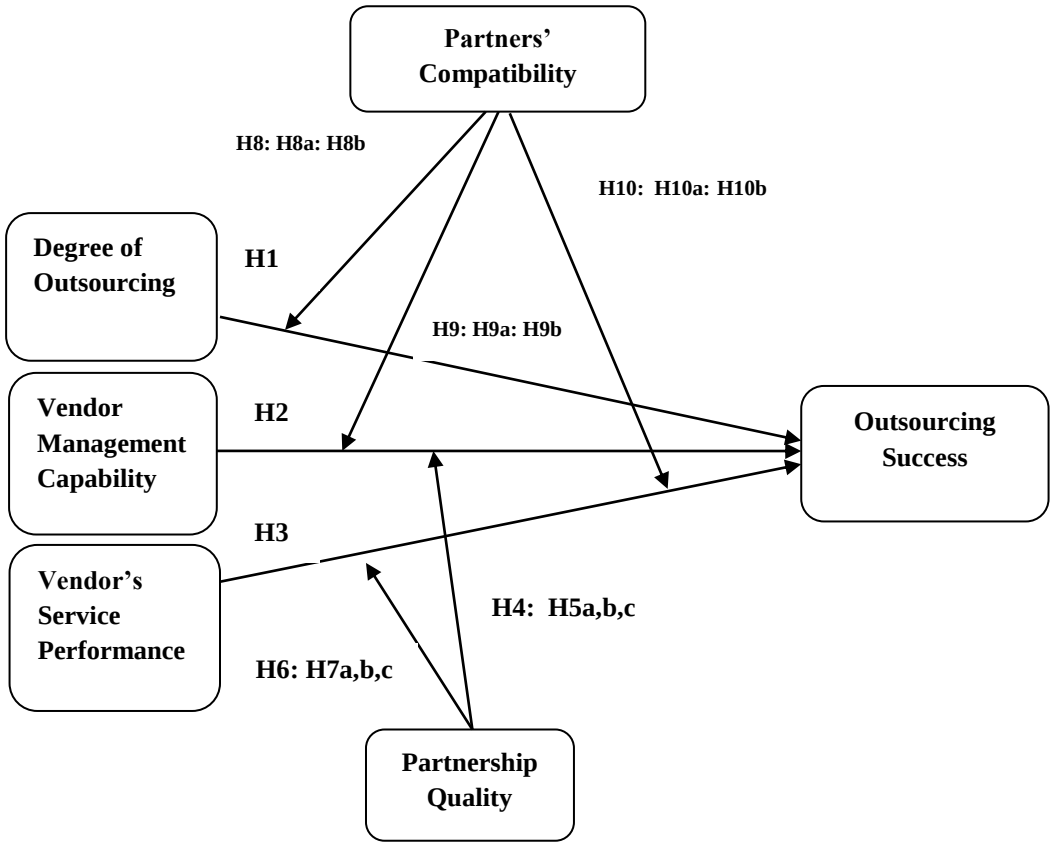

Figure 2.3: The Model of Outsourcing Success in Services

The model consists of three independent variables which are: degree of outsourcing, vendor management capability and vendor's service performance. These variables were expected to influence the dependent variable, which is outsourcing success. The model also tests the moderating role of partners' compatibility on all the aforementioned direct relationships. In addition to that, there is a moderation effect of partnership quality in the relationship between contractual governance and outsourcing success. In particular, the influence of vendor management capability and vendors' service performance on outsourcing success is moderated by the partnership quality.

SUMMARY

This chapter presents an overview of epistemological and ontological background of outsourcing success in the services sector. Firstly, the chapter discussed the literature on general outsourcing and then narrowed it down to the services outsourcing. The specific nature of services outsourcing is hence identified and also recognized the fact that the previous studies have not sufficiently considered the uniqueness of services outsourcing. Limited works have been conducted to investigate the factors affecting the outsourcing success in the services sector.

The review also found that, literature on the managerial aspects of outsourcing is scattered largely due to the issues of underpinning theories applied by previous studies. Thus, extensive literature analysis is conducted to identify appropriate underpinning theory (ies) to oversee the service outsourcing context. In contrast to the dominant theories in the area of research, the explanatory power of resource dependency theory and social exchange theory is acknowledged.

Following that, the study identified that organisational dependency and resource exchange are the crucial managerial elements for services outsourcing success. Next, partners' compatibility is identified as a variable, which mitigates the efforts of outsourcing on its success. This proposes a moderating effect of partners' compatibility on the effectiveness of managerial factors identified (i.e. both dependency and resource exchange). In addition to that, SET perceived partnership quality as a reciprocal behaviour in the exchange process. This provides another moderating variable, which affects factors relating to the exchange performance.

The following chapter outlines the methodology utilized to examine the model constructed in Chapter 2.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter presents the detailed methodology employed in this research. It consists of sampling, operationalisation of constructs, instrument development, pilot testing and methodological procedures that would be used to test the proposed research model.

3.2 RESEARCH DESIGN

Domain of 'school of thought' guides research design. Various schools of thought have different research approaches. The approaches are defined by the ontological and epistemological perspectives of the certain school of thought. As such, it is denoted as dualism (binary model) in philosophy (Johnson and Duberley, 2000, p. 179). Figure 3.1 depicts different schools of thoughts, and their corresponding approaches in social science research. As noted in Chapter 1, the study lies in 'positivism', in which thoughts are guided by objective ontology and objective epistemology. This work believes that reality has an independent existence, and there is a possibility to access the external world objectively (i.e. theory-neutral observational language). Therefore, the reality in the external world (i.e. social phenomena in this research) can be objectively measured. Based on this fundamental thought, the study outlines its research design.

Bryman and Bell (2007) conceived that social research design is about prioritizing a range of dimensions of research processes, including expressing causal connections (hypothesizing), sampling (generalizing to a large group), understanding the behaviour of social context, and considering temporal appreciation of social phenomena and their interconnections (p. 36).

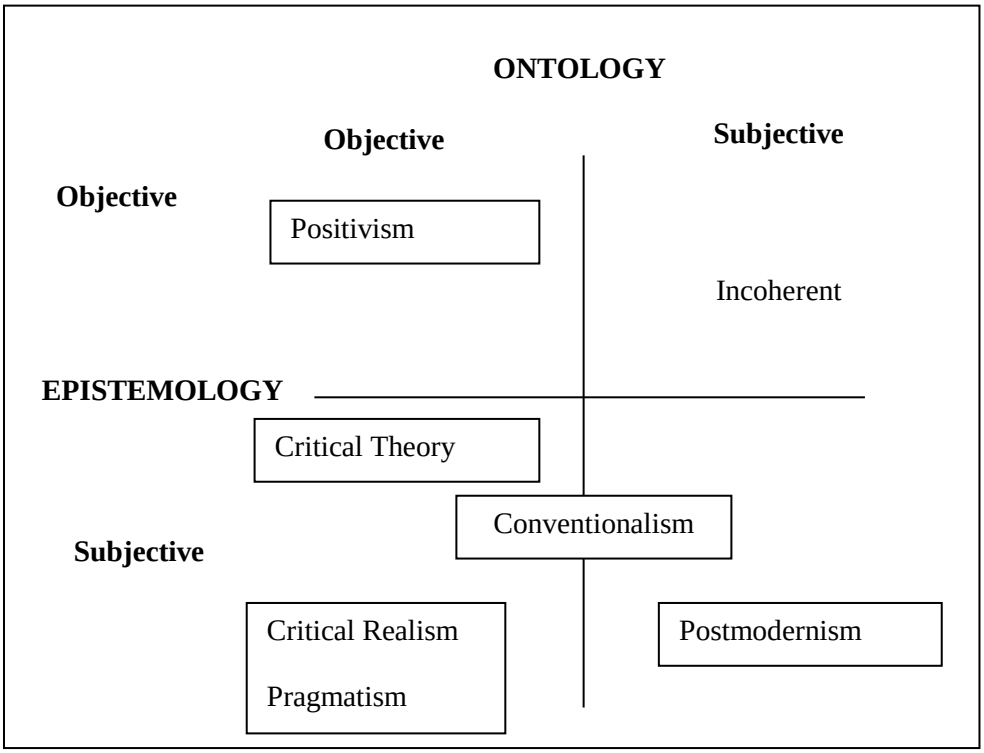

Figure 3.1: Research approaches based on Ontology and Epistemology

Source: Johnson and Duberley (2000, p. 180), Reflexivity and management research

Research design provides a framework for the collection and analysis of data (Bryman and Bell, 2007, p. 40). A meta-analysis carried out by Churchill and Peter (1984) found that research design significantly affects the reliability of the findings. Therefore, the formulation of the most appropriate research design allows the researcher to figure out how to perform the research work. Besides, it facilitates the generation of more reliable and valid research results. Developing a research design is not a simple task, as it deals with multiple factors, rather than just one or more variables that cause a problem (Cavana *et al*., 2001). Each element is interconnected within a particular research paradigm/domain, and this guides researchers on the appropriate research implementation and interpretation.

As the current research lies in the positivist research paradigm, the objective measures of constructs will be employed with the purpose of examining the influence of selected factors on outsourcing success. Therefore, this study investigates causal relationships quantitatively (Baumgartner and Hensley, 2006, p. 17). Sandhusen (2000), however, classified such researches as conclusive research, while Malhotra (2004) categorised conclusive research into causal and descriptive. The causal relationships should be investigated with the use of experimental research designs in a controlled environment (Bryman and Bell, 2007, p. 47- 49). Therefore, experimental design involves manipulating or introducing changes in people or environment that presumably affects the outcome(s) of interest (Fraenkel and Wallen, 2000).

The descriptive research is further classified into the cross-sectional and longitudinal design (Malhotra, 2004). A cross sectional study attempts to offer 'a snapshot of one point in time' (Cooper and Schindler, 2003, p. 148). A longitudinal design collects data from two or more periods of time, using the same samples of respondents, and measuring the same variables. The current study is identified as a cross sectional, as it aims to examine the phenomena at a certain point of time. Based on the characteristics pertaining to the research design, this study applies the survey method in order to accomplish the main aim of the research.

3.2.1 Research Method – Survey

Most of the time, quantitative researches in social science are carried out as cross-sectional data collection (Bryman and Bell, 2007). Survey is the most popular data collection tool within the descriptive research, and is usually defined by its structured nature in gathering data from a large sample (Ruane, 2004). It provides certain factual

and descriptive information, which can be intrapolated to the population. Survey is a relatively easy method to administer, as well as economical and efficient in reaching its target population (Malhotra, 2004). Due to these reasons, and the fact that it is a suitable research method for a descriptive research design, a structured self-completion questionnaire was chosen for this study in order to gather cross-sectional data. The following section describes the development of research instruments, including operationalisation of constructs and scaling.

3.2.2 Population of the Study

Bryman and Bell (2007, p.182) defines population as the 'universe of units from which a sample is to be selected'. The sample should be drawn from the best representation of the population for more generalized results. The current study aims to investigate outsourcing practices of the service sector in Sri Lanka. The sector has more than 55 per cent share of the GDP (during 2009-2011) and is the main growth driver with average 8 percent a year. Telecommunication, trading, port, hospitality and financial services are main contributors to the growth (Source: Central Bank of Sri Lanka website available: http://www.cbsl.gov.lk/2011). As far as the study context is concerned, only banking and hotel industries in the service sector have applied outsourcing for multiple activities as their main strategy of competing. These two industries have also recorded the highest service sector contributors to the gross domestic production (GDP) in Sri Lanka in 2009 and 2010 (source: Central Bank of Sri Lanka website available: http://www.cbsl.gov.lk).

Zhang *et al*. (2009) stated that hotels are a sensitive and competitive industry to be studied, as they use outsourcing for multiple activities as their main competition strategy (Lam and Han, 2005). The banking industry also uses outsourcing to add value to their business process (Banerjee and Williams 2009; Ang and Straub1998; Barako and Gatere, 2008). There is a significant rise in outsourcing activities in the banking sector due to the advanced technology and usage of the Internet to enhance business performance (Barako and Gatere, 2008). In this context, both sectors applied outsourcing for strategic purposes. Thus, the successful empirical investigation on the deduced model can be realised within these two sectors of services.

3.2.3 Sample Frame

The telephone directory issued by Sri Lanka Telecom Corporation is identified as the most updated sample frame of the study. In fact Sri Lanka Telecom Corporation is the only landline service provider. Most of the organisations use landline telephones due to their relatively lower cost and ease of services. According to the 2011 directory (rainbow pages), there are 27 banks and 396 hotels in Sri Lanka. In this study however, 81 ‘one star’ and 24 ‘unclassified’ hotels were omitted from the population, in order to minimize the ‘outliers’ from the analysis. These hotels are less likely to outsource due to their small sizes. Thus, a total population of 318 units was considered for the study.

3.2.4 Unit of Analysis

Lam and Han (2005) identified departmental managers and senior executives in hotels as respondents. Espino-Rodrı´guez and Padro´n-Robaina (2005a:b) and Donada and Nogatchewsky (2009) stated that the execution of the outsourcing function is a middle level management responsibility, following the top management decisions. However,

the decision-making body in outsourcing may differ from one firm to another. Thus, this study defines its respondents as the middle level managers or executives who are responsible for outsourcing (general or specific activity). These managers however are not considered as the unit of analysis, but rather as representative to respective organisations. As stated earlier, this study aims to examine the outsourcing success of services firms. Therefore, service organisations that applied outsourcing for strategic purposes were considered as units of analysis of this study.

3.3 SAMPLING

3.3.1 Sample Size

According to Sekaran (2003), researchers are not required to calculate sample size due to the uncertainty of receiving all of them back. As previously noted, the population is 318, which comprises of 27 banks and 291 hotels. Other similar studies around the world had much lower sample sizes. Lam and Han (2005) sampled four to five-star hotels in Shanghai, China, in which the population and the sample size were 38. Espino-Rodrı´guez and Padro´n-Robaina (2004:2005a:b) identified 58 registered hotels in Canary Islands Spain, and they included 50 hotels as their sample. Donada and Nogatchewsky (2009) investigated two tourists' destinations, and have not specifically mentioned the population size, but they gathered 65 (30 hotels from Turkey and 35 hotels from France) responses from hotels. It is common for organisational research to analyse a smaller sample size compared to consumer research.

The sample size is important as it affects the magnitude of difference in covariance matrices (Hoyle, 1995; Loehlin, 2004). If the sample is inadequate, the probability to

project the results to the population becomes severely limited. Therefore, a 'minimum sample size' is needed to be identified. A priori statistical power analysis can be calculated using various heuristics. Subsequently, there are different arguments on the size of the sample. Bentler and Chou (1987) stated that, the minimum sample size would be five respondents for each free parameter to be estimated, if other multivariate assumptions are met (p.3). Previous research used this as a rule of thumb to decide on the sample's size. Moreover, some scholars measured sample sizes according to the requirement of the statistical software/package that was used to analyse the data. Accordingly, the Structural Equation Modelling (SEM) technique generally expects a minimum sample size that ranges from 150 to 200 (Hair *et al.*, 2010). Schumacker and Lomax (2004) have concluded that an adequate level of a sample should be greater than 150.

Cochran's (1977) constructed two comprehensive formulas to calculate the minimum sample size for categorical and continuous variables. Thus, this study wishes to apply Cochran's (1977) sample size formula for continuous variables, as it considers the variability of the dependent variable's scale, in addition to its error margin and confidence level. The formula is shown below (formula and its description quoted from Bartlet, Kotrlik and Higgins, 2001, p. 46).

$$n_o = \frac{t^2 * s^2}{d^2}$$

$$= \frac{(2.6122)^2 * (1.167)^2}{(0.21)^2} = 210.72 \approx \mathbf{211}$$

Where,

n_o = sample size (before population size adjustment)

t = confidence level at 96% (standard value of 2.6122)

(the alpha level of .04 indicates the level of risk the researcher is willing to take true margin of error may exceed the acceptable margin of error.)

s = estimate of standard deviation in the population = 1.167.

(estimate of variance deviation for 7 point scale calculated by using: 7 [inclusive range of scale] divided by 6 [number of standard deviations that include almost all (approximately 98%) of the possible values in the range]).

d = acceptable margin of error for mean being estimated = 0.21

(number of points on primary scale * acceptable margin of error; points on primary scale = 7; acceptable margin of error = .03 [the error researcher is willing to except]).

Accordingly, the study needs 211 participants. Cochran's (1977) further stated that, if the estimated sample is greater than 5% of the population, the correction formula should be applied (quoted from Bartlet *et al*., 2001, p. 46). The adjustment formula for population is shown below,

$$n = \frac{n_0}{1 + {}^{n_0}/_{Population}}$$

$$\text{n} = \frac{211}{1 + {}^{211}/_{318}} = 126.7 \approx \mathbf{127}$$

n = Final minimum sample size adjusted for the population

Based on the correction formula, the minimum sample size for the study is 127. However, many researchers suggested increasing the sample size by 30% to compensate for non-responses (Israel, 1992). Therefore, the sample size needs to be increased to (127 x 1.3), which makes it 165. According to Hair *et al*. (2010), this amount is marginal in terms of the requirement of statistical package applied for data analysis (i.e. SEM: AMOS). Thus, the study sets the required sample size at 200. This amount

satisfies the AMOS requirement, which exceeds the minimum sample size calculated based on Cochran's (1977) and Israel's (1992) methods.

3.3.2 Sampling Technique

As previously noted, the population consists of 27 banks and 291 hotels, which is a significant proportionate difference. In this case, the proportion for each stratum has to be determined in order to accurately represent a considerable amount from the minority. This approach is known as proportionate/stratified sampling. However, the sampling is only feasible when the relevant information is available, and the difference between the two strata is readily identified (Bryman and Bell, 2007, p. 188). In accordance with the theory above, this study allocated a portion to each sector, based on the calculated minimum sample. The calculation is as follows,

$$n_B = \left(\frac{200}{318}\right) \times 27 = \mathbf{17\ Banks} \qquad n_H = \left(\frac{200}{318}\right) \times 291 = \mathbf{185\ Hotels}$$

According to the calculations, the survey needs to cover at least 17 banks and 183 hotels. The survey instrument is a structured questionnaire. As a matter of fact, the development of the instrument includes transforming the constructs into measurable formats, and developing scales to measure the magnitude involvement of such measures. The next section discusses the transformation of research constructs of this study into measurable formats.

3.4 MEASUREMENT OF CONSTRUCTS

The theoretical framework developed in the previous chapter outlines six constructs. However, constructs are not directly observable, and the meanings are conceptualized for a given context. Further, the definition of each construct is depending on the purpose of the research. Therefore, the constructs should be transformed into variables. The variables are the properties being studied, and they are used to test the hypotheses (Cooper and Schindler, 2003) which have been established in the earlier part of this thesis.

There are three types of variables included in this study. They are criterion (dependent), predictor (independent), and moderator. Bryman and Bell (2007) defined 'criterion' as a variable that is causally influenced by another variable (s) (i.e. independent variable), while a variable that has a causal impact on another (i.e. dependent variable) is identified as the independent variable / predictor (p. 727-728). Finally, moderator is the qualitative or quantitative variables that are responsible for the different levels of strength in the relationships among variables (Baron and Kenny, 1986).

According to the description, outsourcing success depends on the degree of outsourcing, vendor management capability of the firm, and the vendor's service performance. The relationship between the aforementioned independent variables to the dependent variables will be moderated by the partners' compatibility and partnership quality. The following section discusses the measurable forms of each construct considered in the study.

3.4.1 Criterion Variable: Outsourcing Success

This study wishes to identify outsourcing success in a broader perspective. Previous studies have used different measurement indicators to determine the success of outsourcing. Basically, there are mainly two types of classifications of the dimensions applied to determine outsourcing success. Table 3.1 depicts the classification of dimensions applied by the related research work. Some studies have covered many of these aspects, while others have their own theoretical limits. Besides, some studies which focused only one particular industry, have added customized measurement indicator(s) to measure outsourcing success. For instance, Lee (2001) who examined IS outsourcing, adds 'increase of IT competence' and 'access to key IT' as indicators for outsourcing success.

A clear deviation can be observed in performance indicators based on the applied underpinning theory. Firstly, studies based on TCE's perspective have been using financial and operational performance indicators. Profitability (Zhang *et al*., 2009; Kroes and Ghosh, 2009; Thouin *et al*., 2009; Espino-Rodrı´guez and Padro´n-Robaina, 2005a), and reduction of total cost (Kedia and Lahiri, 2007; Lam and Han, 2005; Zhang *et al*., 2009), have been highlighted by many studies as financial performance measures. Espino-Rodrı´guez and Padro´n-Robaina (2005a) applied 'occupancy rate' as a dimension representing the productivity of the hotel industry.

Additionally, increasing overall quality is one of the main operational aspects in outsourcing, and it has been applied as a performance indicator with different terminologies. Espino-Rodrı´guez and Padro´n-Robaina (2005a) and Zhang *et al*. (2009) used 'quality improvements' to measure operational performance.

Table 3.1: Dimensions of Outsourcing Success

Measure	**Source**
Financial	Zhang *et al*., 2009; Gilley and Rasheed, 2000; Thouin *et al*., 2009; Espino-Rodrı´guez and Padro´n-Robaina, 2004; Ozcelik and Altinkemer, 2009
Operational, (non- financial)	Zhang *et al*., 2009; Lee, 2001; Benamati and Rajkumar, 200); Espino-Rodrı´guez and Padro´n-Robaina, 2005a; Ozcelik and Altinkemer, 2009
Overall	Lee, 2001; Benamati and Rajkumar, 2008; Espino-Rodrı´guez and Padro´n-Robaina, 2005a
Strategic, Economical and Technological	Han *et al*., 2008; Grover *et al*., 1996; Lee, 2001; Lee and Kim, 1999

Kedia and Lahiri (2007) however, described TCE as a leading platform for interpreting tactical partnerships. The present study categorized the operational and financial outcomes under 'tactical' performance measures to avoid the overlaps of dimensions.

Secondly, studies that used resource based view (RBV) and knowledge based view (KBV), were embarked on investigating strategic value addition from outsourcing such as focus on core business (Han *et al*., 2008; Lee, 2001; Kroes and Ghosh, 2009) sharing expertise (Lee, 2001; Han *at el*., 2008; Banerjee and Williams, 2009; Bettis *et al*., 1992; Lansdale, 1997), innovations (Cui *et al*., 2009; Cusmano *et al*., 2009), reduce business risk (Lee, 2001; Kedia and Lahiri, 2007) and competitive advantage (Bettis *et al*., 1992). Therefore, focusing on core business, expertise, competitive advantage, reduction in business risk and innovations are the main strategic outcomes of outsourcing.

Thirdly, only a few studies confirmed that outsourcings success is measured in terms of behavioural perspectives such as satisfaction and intention to outsource. Lee (2001) used 'overall satisfaction with suppliers' to measure information system's outsourcing

success. De Vita *et al*. (2010), Lee (2001) and Espino-Rodrı´guez and Padro´n-Robaina (2005a) applied 'overall outsourcing relationship performance' to measure supplier's satisfaction. In fact, organisations are unsatisfied with existing vendors as they tend to switch the vendor/supplier due to negative emotions (Donada and Nogatchewsky, 2009). Thus, the buyer does not have the intention to engage in future interactions with particular suppliers (Dyer, 1997; Lee, 2001; Han *et al*., 2008). The outsourcing contract will be extended/ continued only if the buyer is satisfied with their supplier/vendor, thus, the 'willingness to continue the contract with the vendor/supplier' is an indicator of successful outsourcing (Shamdasani and Sheth, 1994).

In addition to that, the present experience on outsourcing demonstrates future intention to outsource. The 'outsourcing acceptance model' (Benamati and Rajkumar, 2008) has identified 'future intention to use outsourcing' as a behavioural outcome of a successful outsourcing experience. Espino-Rodrı´guez and Padro´n-Robaina (2004) further explained that, the propensity to outsource (i.e. intention to outsource) is one of the determinants of outsourcing success. In brief, 'outsourcing relationship performance', 'willingness to extend existing outsourcing contracts' and 'future intention to outsource which are currently in-sourced' can be identified as behavioural dimensions reflecting the focal firm's satisfaction of outsourcing.

Based on these arguments, outsourcing success is operationalized as follows. Table 3.2 elaborated the dimensions and items adapted to measure outsourcing success.

Working Definition: Outsourcing Success

> *The level of achieved expected results and satisfaction of the outsourcing can be measured in terms of tactical, strategic and behavioural outcomes.*

Table 3.2: Operationalization of Outsourcing Success

Dimensions	Number of Items	Items	Source
Tactical	04	1. Profitability 2. Reduction in total cost 3. Occupancy rate/ productivity 4. Quality improvements	Zhang *et al*., 2009; Kroes and Ghosh, 2009; Thouin *et al*., 2009. Espino-Rodrı´guez and Padro´n-Robaina, 2004: 2005a. Espino-Rodrı´guez and Padro´n-Robaina, 2004: 2005a; Lam and Han, 2005; Kotabe and Mol, 2009; Young, 2008.
Strategic	05	1. Focus on core business 2. Expertise knowledge 3. Competitive advantage 4. Reduce business risk 5. Innovations	Han *et al*., 2008; Lee, 2001; Kroes and Ghosh, 2009; Banerjee and Williams, 2009. Bettis *et al*., 1992; Lonsdale, 1997; Cusmano *et al*., 2009; Cui *et al*., 2009.
Behavioural	03	1. Overall satisfaction with the supplier/vendor 2. Willingness to continue the contract with supplier 3. Future intention to outsource (currently in-sourced)	Lee, 2001; Espino-Rodrı´guez and Padro´n-Robaina, 2005a; De Vita *et al*. 2009. Shamdasani and Sheth, 1994. Benamati and Rajkumar, 2008; Espino-Rodrı´guez and Padro´n-Robaina, 2005a.

Outsourcing success depends on the degree of outsourcing, vendor management capability and vendors' service performance. The following section is allocated to discuss the measurement development of independent variables.

3.4.2 Predictor 1: Degree of Outsourcing

As noted in both preceding chapters, the degree of outsourcing is a combined construct of breadth and depth of outsourcing. This is consistent with Gilley and Rasheed (2000) and Espino-Rodrı´guez and Padro´n-Robaina (2004)'s measurements of the degree of outsourcing. The breadth represents the number of activities outsourced by a certain firm; and depth denotes as the intensity of power assigned to the vendor to perform a certain task.

The study however aims to investigate banking and hotel organisations in the service industry. Therefore, the activities of each type of firms have to be separately identified in order to measure breadth and depth. Barako and Gatere (2008) conducted an empirical investigation on the Kenyan banking industry related to the level of outsourcing of each activity in a bank (p. 44). This study adopted their classification of the banking sector (i.e. eight activities) for the pilot study in order to investigate the degree of outsourcing in the Sri Lankan context. Next, Espino-Rodrı´guez and Padro´n-Robaina (2004; 2005a) investigated the hotel industry for the same purpose, and listed twenty activities categorised under core, complementary and non-core activities (p. 715). As a matter of fact, Donada and Nogatchewsky, (2009) used the same classification in their work. Table 3.3 depicts an activity index of each type of organisation applied in this study.

Table 3.3: Activity Index of Firms

Banking Sector Barako and Gatere (2008)	**Hotel Sector** Espino-Rodrı´guez and Padro´n-Robaina (2004;2005a); Donada and Nogatchewsky, (2009)
1. ATM 2. Card processing 3. Internal auditing 4. Debt collection 5. Account processing 6. Human resources 7. Information technology (IT) 8. Sales/ marketing	1. Reception 2. Reservations 3. Purchasing and receiving 4. Kitchen 5. Restaurant 6. Bars 7. Administration 8. General maintenance (technical services) 9. Hotel leisure activities 10. Employee training 11. Personnel selection 12. Information systems 13. Sales activity 14. Promotion and advertising 15. Common areas cleaning 16. Room cleaning 17. Laundry 18. Swimming pool maintenance 19. Gardening 20. Safety and security

3.4.3 Predictor 2: Vendor Management Capability

A formalised vendor management system is crucial for coping with the negative consequences of outsourcing (Lacity *et al.*, 1995; Lee, 2001; Han *et al*., 2008; Rajabzadeh *et al*., 2008). It starts with the selection of the most appropriate vendor(s), which is one of the most critical decisions (Carr *et al.*, 2006; Rajabzadeh *et al*., 2008; Cusmano *et al.*, 2009) that ensures the success of long-term businesses (Quinn, 1999). Organisations must have pre-determined criteria (based on motivations) to evaluate potential vendors for selection (Chan and Chin, 2007). The evaluation process should be continued even after the contract has begun. Wagner (2006) stated that organisations should identify and remove deficient vendors in order to improve performances. Therefore, focal firms need to implement a monitoring system that constantly surveys and evaluates the vendor's performance.

Han *et al*. (2008) applied vendor selection, vendor's performance evaluation, managing outsourcing process, managing outsourcing contract and controlling vendor as the elements of measuring a vendor's management capability. Chan and Chin (2007), however, used extended measures, including vendor selection based on multiple criteria, vendor assessment, formal evaluation, feedback for improvement, vendor certification, training and education, and transferring best practices. Besides, the ability to compensate vendors as stipulated in the contract reflects the focal firm's financial obligation of managing vendors (Carr *et al*., 2006).

Concluding the facts, Han *et al*. (2008) and Chan and Chin (2007) attempted to measure the focal firm ability to select, (and) monitor, (the) performance evaluation and the development of the vendors, while Carr *et al*. (2006) highlighted their compensation ability. Therefore, the present study combined the measurements of Han *et al*. (2008),

Chan and Chin (2007) and Carr *et al*. (2006) by designing an overall measurement for vendor management capability, shown in Table 3.4.

Table 3.4: Vendor Management Capability

Items	Source
Selection of vendors Monitor vendors Vendors' performance evaluation Develop vendors Compensate vendor appropriately	Han *et al*., 2008; Chan and Chin, 2007 Carr *et al*., 2006

Based on these facts and Table 3.4, the study defines the vendor's management capability as,

Working Definition: Vendor Management Capability

> *The focal firm's abilities to select, monitor, evaluate, develop vendors and compensate them appropriately.*

3.4.4 Predictor 3: Vendor's Service Performance

Whipple and Frankel (2000) pointed out that the vendor's ability to meet performance expectations is a key success factor in a B2B business context. The best vendors are those that can meet the needs of the buying organisation in terms of capacity, quality, technology, price, and service (Ogden, 2006). Petersen *et al.* (2005) attempted to measure vendor's performance by improvements in on-time delivery, quality and responsiveness. Nevertheless, prompt delivery has been highly recognised as an important aspect of outsourcing (Chan and Chin, 2007; Selviaridis *et al*., 2008; Rajabzadeh *et al*., 2008; Byramjee *et al.*, 2010). Furthermore, many authors see pricing as an important aspect of economic transactions and relationships, but different studies

used different terms to measure pricing performances, such as accuracy in budgeting (Rajabzadeh *et al.,* 2008) and competitive cost of goods from the suppliers (Chan and Chin, 2007).

In addition to that, the service quality improvements (Bettis *et al*., 1992; Allen and Chandrasekhar, 2000) and knowledge contribution (Cusmano *et al*., 2000; Banerjee and Williams, 2009) are also used to measure a vendor's performance. The service quality is generally measured using the SERVQUAL scale, developed by Parasuraman *et al*. (1985; 1988). However, the appropriateness of the SERVQUAL scale is doubted, as it is specifically designed for the B2C (business to customer) context (Gounaris, 2005; Lee, J.G, 2011). Gounaris (2005) developed a measurement instrument called INDSERV that specifically deals with business to-business (B2B) service quality which is applied in the present study.

INDSERV Scale

Gronrøos, (1984) is the pioneer in conceptualizing business to-business service quality. He claimed that the service quality in a B2B context could be measured in terms of 'technical quality' and 'functional quality', which was the foundation for the development of the INDSERV scale. Referring to Gounaris (2005a: 2005b), the development of a proper scale for B2B service has evolved in the past two decades. Table 3.5 shows the summary of different quality aspects, identified by the previous studies.

Table 3.5: Service Quality in B2B Context

Measure	**Source** Citations from: Gounaris (2005a)
Technical quality /hard quality: core operation-related elements **Functional quality/ soft quality:** interaction between individuals	Gronrøos, 1984; Szmigin, 1993
Process quality: quality of service delivery **Outcome quality:** quality of service received	Morgan, 1991
Potential quality : search attributes of provider's ability to perform the service (i.e. vendors' ability) before the relation has actually begun	Bochove, 1994

Source: Gounaris (2005a) Measuring service quality in B2B services: an evaluation of the SERVQUAL scale vis-a` -vis the INDSERV scale

The technical/ hard quality and functional/soft quality represent the different quality aspects of service delivery process. Gounaris (2005a) however, combined Gronrøos, (1984), Szmigin, (1993) and Morgan's (1991) ideas for the classification of process quality and established, 1) hard process quality, 2) soft process quality. Combining it all, he formulated four dimensions as the INDSERV scale to measure service quality in a B2B service context. Table 3.6 depicts the items of INDSERV scale.

There are 22 items, which cover the aspects of potential quality, hard process quality, soft process quality and output quality that measure the vendor's performance. Moreover, with respect to the items in the INDSERV scale, they cover not only the quality aspects, but also a range of other performance indicators of vendors' service performance, compared to the scales/measures applied previously (e.g. Whipple and Frankel, 2000; Ogden, 2006; Petersen *et al*., 2005; Chan and Chin, 2007; Selviaridis *et al*., 2008; Rajabzadeh *et al*., 2008).

Table 3.6: INDSERV Scale

Potential quality (PTQ)	1.	Offers full service
	2.	Has required personnel
	3.	Has required facilities
	4.	Has required management philosophy
	5.	Has a low personnel turn-over
	6.	Uses network of partners/ associates
Hard Process quality (HQ)	7.	Keeps time schedules
	8.	Honours financial agreements / stays in budget
	9.	Meets deadlines
	10.	Looks at details
	11.	Understands our needs
Soft process quality (SQ)	12.	Accepts agreement enthusiastically
	13.	Listens to our problems
	14.	Opens to suggestions/ideas
	15.	Has pleasant personality
	16.	Argues if necessary
	17.	Looks at our interests
Output quality (OQ)	18.	Reaches objectives
	19.	Has a notable effect
	20.	Contributes to our sales/image
	21.	Is creative in terms of its offering
	22.	Is consistent with our strategy

Source: Gounaris (2005a) Measuring service quality in B2B services: an evaluation of the SERVQUAL scale vis-a` -vis the INDSERV scale, Journal of Services Marketing, 19/6 (2005) p. 427.

INDSERV therefore, has become one of the most suitable scales to measure vendor's service performance in a B2B context. Accordingly, the study defines vendor's service performance as,

Working Definition: Vendors' service Performance

To the extent the vendors are aligned with potential quality, hard process quality, soft process quality and output quality.

3.4.5 Moderator 1: Partnership Quality

The study perceived partnership quality as the relational governance mechanism in the resource exchange process. It covers a broader aspect, including trust, norms, communication, information sharing, dependency and corporation (Lacity *et al*., 2009). However, it has been operationalised in different ways, as shown in Table 3.7.

Table 3.7: Different Views of Partnership Quality

Source	Key dimensions/ items	Research Type
Lee, 2001; Lahiri *et al*., 2009	Trust, business understanding, benefits and risk sharing, commitment, conflict	Empirical
Marshall *et al*., 2007; Donada and Nogatchewsky, 2009; Cui *et al*., 2009	Trust, communication	Empirical
Han *at el*., 2008	Relationship formation: *Information sharing, communication quality, collaborative participation* Relationship outcomes: *Trust, commitment*	Empirical
Sun *et al*., 2002	Power, trust, commitment, conflict	Empirical
Lai *et al*., 2009	Trust , Commitment	Empirical
Lacity *et al*., 2009	Trust, norms, communication, sharing information, dependency and corporation	Conceptual

The partnership quality is widely conceived as trust and commitment among business partners (Lee, 2001; Han *et al*., 2008; Cheng *et al*., 2008; Lahiri *et al*., 2009; Lai *et al*., 2009). Han *at el*. (2008) recognized information sharing, communication quality and collaborative participation as relational formation behaviours, which result in 'trust and commitment' outcomes. Moreover, this study noticed that the behavioural elements are scattered around partners' cooperativeness. For example, sharing/communicating information, knowledge and collaborative participation aspects (Lee, 2001; Han *et al*., 2008; Lacity *et al*., 2009; Lahiri *et al*., 2009) reflect the level of partners' cooperation.

Accordingly, this study identified partnership quality as an integrated construct of reciprocal behaviours and its outcomes.

As identified above, the study incorporated cooperativeness as another dimension of partnership quality in order to address behavioural elements, and consequently, partnership quality is operationalised as:

Working Definition: Partnership Quality

> *The level of trust, commitment and cooperativeness maintain by the partners to the partnership*.

3.4.6 Moderator 2: Partners' Compatibility

Even though compatibility has been studied in different collaborative business setups, there is no consensus on the operationalisation of the construct. This is due to the dynamic nature of compatibility requirements in different contexts. However, different approaches of measuring compatibility are explained in Chapter 2. Then, referring to literature, the study grasps compatibility of culture and competitive priorities between partners as highlighted in previous studies.

Organisational culture is defined as a set of operating philosophies and management style, striving for common goal(s) (Shamdasani and Sheth, 1994; Whipple and Frankel, 2000; Jarvenpaa and Mao, 2008). The competitive priorities are commonly identified in terms of cost, quality, flexibility and prompt service delivery (Espino-Rodrı´guez and Padro´n-Robaina, 2004; Chase *et al.,* 2006; Jarvenpaa and Mao, 2008; Kroes and Ghosh, 2009). By aggregating both aspects, the definition for compatibility can be defined. Table 3.8 further elaborates the items considered under each dimension.

Working Definition: Partners' Compatibility

The level of cultural and competitive priorities' alignment between the focal firm and the vendor(s) in the outsourcing partnership.

Table 3.8: Partners' Compatibility

Dimension	Items	Source
Culture	Operating philosophy Management style Complementary goals	Roh *et al*., 2008; Whipple and Frankel, 2000; Shamdasani and Sheth, 1994
Competitive priorities	Cost focus Quality focus Flexibility focus Delivery time focus	Espino-Rodrı´guez and Padro´n-Robaina, 2005a; Chase *et al*., 2006; Roh *et al*., 2008; Kroes and Ghosh, 2009.

N.B: Shamdasani and Sheth (1994) included complementary goals as (a) component of strategic compatibility, but Schein (1996) and Roh *et al*. (2008) argued that 'goals' are an element of espoused culture. Therefore, the study included it as an item indicating organisational culture. However, when defining a single firm's organisational culture, 'goals' become 'common goals', aligning the business into the same direction, but as far as outsourcing context is concerned, it can be recognized as a vertical supply chain integration (Chen and Paulraj, 2004; Lejeune and Yakova, 2005). In vertical integration, partners should have complementary goals that strengthen one another (Shamdasani and Sheth, 1994; Lam and Han, 2005). Therefore, in a vertical integration context, it is more meaningful to define goals as 'complementary' rather than 'common'.

3.5 INSTRUMENTATION

The research instrument of this study is a structured questionnaire. The structured questionnaire is identified as the best instrument for self-completion/ self-administered data collection method (Bryman and Bell, 2007, p. 240- 242). An eight-page questionnaire was developed and designed as a double-sided booklet (please refer Appendix A) for the pilot study. The front page is a covering letter that provides brief information regarding the purpose of the research project. Respondents were invited to participate in the survey voluntarily. Furthermore, it was enclosed with a statement, which demonstrates the research ethics, whereby the participant's privacy was guaranteed. The estimated time (15-20 minutes maximum) required to complete the survey was also stated on the cover page.

Scaling of the questionnaire basically follows the original source with minor modifications in order to fit into the theme of the study (Churchill, 1979). Even though Nunnally (1978) suggested the formation of both positively and negatively worded questions to maintain the symmetry of the questionnaire, it limits the questions ability to capture the measured concept (Alexandrov, 2010). Likewise, Alexandrov (2010, p. 02) quoted that, *negatively-worded items have strong method effects and exhibit longitudinal invariance (Motl and DiStefano, 2002; Horan et al., 2003) and it changes the dimensionality of the construct (Herche and Engelland, 1996; Mook et al., 1991; Tomas and Oliver, 1999).* Therefore, the study did not include any negative worded questions, as the purpose of the study is not to measure the respondents' comprehension of the context, but to gather actual information. Thus, the researcher believes that questions should be simple, understandable and clear.

The questionnaire consists of three sections. The next subsection explains the development of questions, and the scale developed for each measure, pertaining to each section.

3.5.1 Questionnaire: Section A

Section A contains only one part, allocated for measuring a firm's degree of outsourcing. Since the study investigates banks and hotels, there are different activities listed (Table 3.3). As previously noted, this study follows Barako and Gatere (2008) activity index for banking organisations, and Espino-Rodrı´guez and Padro´n-Robaina (2004;2005) and Donada and Nogatchewsky (2009) activity classification for the hotel sector. Barako and Gatere (2008) applied the activity index to investigate the current situation of outsourcing such as, whether the banks have already outsourced the function or under consideration, etc. (p. 43). The scale applied by them is basically nominal, and the aggregate responses were calculated as a percentage of total cases studied. Nevertheless, some scholars have applied a percentage of outsourcing for each activity (Gilley and Rasheed, 2000; Poppo and Zenger, 1998), while others used the Likert scale (Espino-Rodrı´guez and Padro´n-Robaina, 2004:2005; and Donada and Nogatchewsky, 2009). The data collected from Likert items become significantly less accurate when the number of scale points drops below five or exceeds seven (Johns, 2010, p. 06). Therefore, a 5-point or 7-point Likert scale is preferable. Despite the 7-point Likert scale being the expanded choice of response; it is associated with some clarity problems. For example, respondents become confuse and unable to distinguish labelling differences in the middle points (not the two extreme ends in the scale), or

labelling options are hard in longer scales (Johns, 2010). As far as the degree of outsourcing is concerned, the extreme points of 7-point Likert scale are clear (i.e. 0= not outsourced at all, and 7= totally outsourced) but, the meaning of the middle points are too narrow to break down into a range of 2 – 6 (i.e. 4 distinct points). In such cases, Churchill (1979) suggested options for scaling such as 1) adopted, 2) modified and 3) extended. Therefore, the study modified the scale used by Espino-Rodrı´guez and Padro´n-Robaina (2004; 2005a) from a 7-point scale to a 5-point scale, in order to avoid issues in clarity of each point. Therefore, the 5-point scale is refined as suitable for measuring the degree of outsourcing in banking and hotel organisations are shown in Table 3.9.

Table 3.9: Likert Scale - Degree of outsourcing

Not outsourced at all	Outsourced to a limited extent	Outsourced to a moderate extent	Outsourced to a greater extent	Totally outsourced
1	2	3	4	5

3.5.2 Questionnaire: Section B

Section B consisted of parts 2, 3, 4, and 6 of the questionnaire. Part 2, 3, 4 and 6 measured the items using a 7-point Likert scale, ranging from 1 = 'strongly disagree' to 7 = 'strongly agree'. However, some scholars (e.g. Coulthard, 2004; Laroche *et al*., 2004) disputed the 'odd scales' as the midpoint value, which does not truly reflect the respondent's actual response. Laroche *et al*. (2004) stated that Asian respondents often prefer to ensure harmonious relationships and hence avoid giving scores that are extreme. As far as the context of study is concerned (i.e. Sri Lanka), there is no such issue reported yet. Further, the scales without midpoints force the respondents to choose either positive or negative. However this study had no intention to use the 6-point scale, but chose the 7-point scale instead. Indeed some respondents may really want to select the midpoint of agreement, but, if it is missing from the choice, respondents may get a negative feeling, which may affect the entire response. As a result, there would be a probability of obtaining missing values.

Furthermore, Johns (2005) reported that when the midpoint is omitted from the scale, respondents have a tendency to select disagreements instead. Therefore, the study decided to use the 7-point Likert scale for section B, as it provides an option to ambivalence (i.e. definite but mixed feelings) and indifference (i.e. no particular feelings about the statement) (Johns, 2010). Accordingly, all items in part 2, 3, 4 and 6 have used the 7-point Likert scale of agreement.

Part 2 measured the vendor management capability of the firm. It was operationalized as shown in Table 3.4, while Table 3.10 shows the adapted questions.

Table 3.10: Questions: Vendor Management Capability

Code	Items	Source
VM 1	We select only qualified suppliers/vendors with satisfactory assessment of selection criteria	Adopted: Han *et al*., 2008; Chan and Chin, 2007
VM 2	We have systematic process to monitor suppliers/vendors	
VM 3	We evaluate suppliers'/vendors' performance with specified criteria	
VM 4	We have systematic process in the development of suppliers'/vendors' capabilities.	
VM 5	We have the ability to compensate/ pay supplier/vendor fees according to the contract	Adapted: Carr *et al*., 2006

Part 3 investigated the vendors' service performance and adapted the INDSERV scale, which has 22 items (as shown in Table 3.6) developed by Gounaris (2005). The questions were created for each item (Please refer the Part 3 in Appendix A).

Table 3.11: Questions: Partnership Quality

Code	Dimension	Items	Source
COP 1	Cooperativeness	We share information that affects each other's business	Adapted: Lee, 2001; Lahiri *et al*., 2009
COP 2		We share business knowledge on core business processes	
COP 3		We share benefits and risk of the business	
COP 4		We make decisions for business objectives and directions together.	Adopted: Han *et al*., 2008
COP 5		We solve most of the problems together	
COP 6		We are willing to comply with each other's requests	
COP 7		We are keen in solving each other's problems	
COP 8		We are cooperative in conducting business	
PQT 1	Trust	We always take decisions which are favorable for both of us	Adapted: Han *et al*., 2008; Lai *et al*., 2009
PQT 2		We assist each other in performing business	
PQT 3		We are sincere at all times	
PQT 4		We have friendly relationship	
PQC 1	Commitment	We have strong relationship	
PQC 2		We do our best to maintain a good relationship	
PQC 3		We always try to keep each other's promises	
PQC 4		We are willing to continue the relationship	

Part 4 measured the quality of the relationship maintained by the focal firm and their vendors in the context of outsourcing. The Table 3.11 shows the questions and related source used to measure the partnership's quality. It consisted of 16 items, categorized under three dimensions.

Part 5 attempted to measure partners' compatibility. Respondents were asked to select the appropriate answer according to their agreement to a particular statement. Basically, a 7-point Likert scale was used in order to measure the level of agreement with the statements (Shamdasani and Sheth, 1994; Whipple and Frankel, 2000). However, Kroes and Ghosh (2009) measured the level of importance of compatibility between firms outsourcing drivers and competitive priorities with a 5-point Likert scale. The labeling of the scale (i.e. 5 point Likert) is more meaningful than 7 point scale. Accordingly, the present study also used a 5-point Likert scale, and modified labels in order to measure the respondents' agreement on the 'extent of compatibility', in which partners are working to maintain. On a scale where, 1= not at all; 2= to limited extent; 3= to moderate extent; 4= to somewhat large extent; and 5= to great extent.

Accordingly, the statements shown in Table 3.12 were formed to measure partners' compatibility on a 5-point Likert scale.

Table 3.12: Questions: Partners' Compatibility

Code	Statement	Source
CPC1	Your firm and your vendor firm (s) have similar operating philosophies	Adopted: Whipple and Frankel, 2000
CPC2	Your firm and your vendor firm(s) have a similar management style.	
CPC3	Your firm and your vendor firm(s) have complementary goals	Adapted: Roh *et al*., 2008; Shamdasani and Sheth, 1994
CPP1	Your firm and your vendor firm(s) consider 'cost' as an important dimension in doing business	Adapted: Espino-Rodrı´guez and Padro´n-Robaina, 2005a; Kroes and Ghosh, 2009.
CPP2	Your firm and your vendor firm(s) consider **'**quality' as an important dimension in doing business	
CPP3	Your firm and your vendor firm consider (s) 'delivery time' as an important dimension in doing business	
CPP4	Your firm and your vendor firm(s) consider 'flexible reaction to demand' as an important dimension in doing business	

Part 6 measured a 12-item scale of outsourcing success, which is the dependent variable. The 12 items represent tactical, strategic and behavioural dimensions, which were integrated to measure outsourcing success in the services industry. Table 3.2, therefore elaborates the list of items adapted for the study, with respect to the corresponding source. Most of the items were measured with a 7-point Likert scale. Espino-Rodrı´guez and Padro´n-Robaina (2004) and Lam and Han (2005) for example, also measured the financial performance in the hotel sector with a 7- point Likert scale (p. 296).

As far as the study context is concerned, some units of analysis are ill equipped with proper governance mechanisms. For example, all hotel organisations are not public listed companies; hence, they produce financial statements only for internal references. Moreover, they are not willing to disclose such statements (i.e. statements with figures and values) to a third party. In contrast, all banking organisations are public listed, or

attached to the government (government link corporations), where transaction transparency and accountability of statements are guaranteed. In this study banking organisations are rather small in number. Moreover, the prevalent issue of the monetary values becomes less reliable in the study context, due to the higher level of economic instability. For example, USD1 (American Dollar) = LKR109 (Sri Lankan Rupee) in July 2011, however, it has increased to 130 in March 2012 (source: Central Bank of Sri Lanka website available: http://www.cbsl.gov.lk/htm/english/_cei/er/e_1.asp). This confirms that, the values calculated from monetary figures might not represent the actual results of the business performance (e.g. profitability, return on investments, etc.). As far as the unit of analysis is concerned, their monetary success is not in a fixed range. For example, 20 per cent of profitability may not be a satisfactory achievement for a five star hotel when compared with a two star hotel. Therefore, the study planned to obtain only subjective responses of outsourcing success, in order to align the contextual limits, which may possibly result in missing values. Additionally, this study measures 'success', which has a meaning that is broader than performance, and is quite subjective.

Unlike tactical outcomes, the strategic and behavioural outcomes were measured with attitudinal scales. Thus, the study aims to maintain a consistency of responses over items measuring the same variable (i.e. outsourcing success) for the purpose of aggregation easiness.

3.5.3 Questionnaire: Section C

Section C included the demographic profile of the unit of analysis. The unit of analysis was identified as 'service organisations'. Basically, two types of services organisation(s) would be investigated, leading to the customisation of certain parts of the profile. Some questions were enclosed for the purpose of identifying certain characteristics of firms related to the background of the outsourcing. At the beginning, respondents were asked to provide information regarding the name (if preferred) and the type of the organisation. There were two types of categorisation used, shown in Table 3.13. The categorisation was discrete, with no overlapping. The question was formed as a check box, to make it easier to select and minimize time spent for responding. Even though 1 Star hotels were omitted from the sample, Table 3.13 included it as to maintain the clarity of the well -known categorization. This also provides an opportunity to detect cases which are not belonging to the sample.

Table 3.13: Type of the Organization

Bank		**Hotel**	
Government	O	1 Star	O
Semi –Government	O	2 Star	O
Private	O	3 Star	O
Foreign		4 Star	O
Other.....	O	5 Star	O
(Please specify)		Above 5 Star (5+)	O

The third question enquired the number of employees and the fourth question examined the branches operating in the context of study. The purpose of the fifth question was to identify the length of time period, in which the organisation has engaged in outsourcing. Basically questions 2, 3, 4 and 5 were designed to facilitate the descriptive analysis of

demographic details. Finally, respondents were asked to provide their contact details if they are interested in the research findings. The purpose was to convey gratitude for participation, and to demonstrate the opportunity of mutual benefits of research. The questionnaire however, ended up with a short statement, which appreciates their participation, and expressing the value of their responses to the study (i.e. Thank you very much for your valuable time and responses).

Then, the developed questionnaire was forwarded for a pre-pilot test to ensure content validity. Thereafter, the validated research instrument (i.e. structured questionnaire) was used for the pilot test for reliability analysis. The following section explains the procedure and outcomes of pre-pilot and pilot tests.

3.6 RESEARCH INSTRUMENT VALIDATION

3.6.1 Content Validity

The content validity is "a subjective but systematic evaluation of how well the content of the scale represents the measurement task at hand" (Malhotra, 2004, p. 269). It can be determined by having a panel of experts examining whether the items sufficiently describe the constructs being measured in the context of the study. Bryman and Bell (2007) viewed it as an 'intuitive' process (p. 165). Alexandrov (2010) *claims that this is the only validity needed in scale development, and the typical item purification through statistical procedures is unnecessary because it can change the meaning of the measured concepts*" (p. 01). Content validity was evaluated in two rounds.

Firstly, it was forwarded to peers. The group comprised of twelve senior PhD students from University of Malaya, Malaysia; University of Nagoya, Japan and University of

Otago, New Zealand. They have been asked to check the appropriateness of wordings, flow of questions, or any other suggestions, which in their opinion require improvements. Minor changes were proposed, and corrections were carried out.

Secondly, the altered questionnaire was forwarded to five individuals. Three of them are academics from the UK, Japan and Sri Lanka, who are familiar with services management and supply chain management. One individual was selected from the hotel industry (i.e. Chairman, Jetwing Hotel Inc-2011), and another from banking industry (i.e. Head, Strategic procurement Management, Nation's Trust Bank -2011) in Sri Lanka. Basically, academics proposed to include a blank space for 'others' option to the part 1 activity index, in order to tackle additional/ unrevealed activities. Consequently, all comments and suggestions received from them were thoroughly discussed with the research supervisor, and changes were made where necessary. After careful considerations on multiple fronts, the questionnaire was finalized.

3.6.2 Pilot Test

Piloting the research instrument is crucial for a self-completion questionnaire, or structured interview as the researcher does not have the opportunity to probe and prompt when responders are completing the questionnaire (Bryman and Bell, 2007). Bryman and Bell (2007) stated some additional advantages of a pilot study (p. 273), listed below.

1. *If the main study is going to employ mainly closed questions, open questions can be asked in the pilot to generate the fixed choice answer* (e.g. Part 1, Activity index keep a blank space to detect unspecified activities)

2. *Pilot study allows the researcher to determine the adequacy of instructions to interviewers, or to respondents completing self-completion/administered questionnaire.*
3. *Questions that seem not understood or questions that are often not answered should become apparent. Such questions can generate missing data.*

Likewise, a pilot study serves as a supplementary method to assure content validity as well. The main purpose of a pilot study is to carry out a reliability analysis of the research instrument, by measuring internal consistency of the questionnaire items. Bryman and Bell (2007) defined internal reliability as, '*…whether or not respondents' scores on any one indicator tend to be related to their scores on the other indicators'* (p. 163). According to Nunnally (1978), Cronbach's alpha is a superior estimator for internal consistency of items. The split-half method could also be used to test for internal reliability. Nunnally (1978) stated that a value ranges from 0.5 to 0.6 is considered sufficient in the early stages of a research. Another factor that helps to determine internal reliability is the item-total correlations. Item-total correlations provide information on the degree of correlations among the indicators of the same scale (Lu *et al*., 2007). An item with a value that is less than 0.25 is considered as very weak, and plays a very small role in conceptualising the given factor (Nunnally, 1978). Therefore, the study fixed item-total correlation value at 0.3 and any item below that value would be omitted.

In order to test the internal consistency of the measurement developed for this particular study, a pilot study was conducted in Sri Lanka. The Cronbach's alpha and item-total

correlation analysis were examined to test the internal reliability of the measurement. The validated questionnaire was distributed to 10 banks and 50 hotels in Colombo, Galle and Kandy cities. The researcher personally visited these organisations to deliver the questionnaires. Appointments were made prior to the visits. This helped the researcher to meet some of the respondents and briefly explain the background of the research. These explanations were crucial in building the responder's confidence, and encouraging active participation in the survey. As the result, some respondents provided additional information willingly, such as, contacts details and other information of certain affiliated professional bodies and other firms in the same chain they were attached with. A total of 38 questionnaires from three banks and 35 hotels were collected. Eight questionnaires from the hotel sector were discarded, as they were returned with incomplete demographic profile and/or many missing values. Therefore, only 30 completed questionnaires were analysed from the pilot test.

The results of the reliability and item-total correlation analysis are described in the following paragraphs. Table 3.14 exhibits the results of 'vendor management capability'. The vendor management capability maintained the internal reliability, where the Cronbach's alpha was above 0.6 ($\alpha = 0.753$). Item-total correlations for all five items were higher than 0.3. The item number VM 5 had the lowest item-total correlation of 0.372. Its omission increased the overall reliability to 0.815. However, since the item-total correlation was still above the limit (> 0.3), it was included in the final questionnaire.

Table 3.14: Results of Pilot Study: Vendor Management Capability (n=30)

Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
VM1	.576	.763
VM2	.838	.669
VM3	.705	.718
VM4	.459	.807
VM5	.372	.815
(VM) Vendor Management Capability (α = 0.799)		

The Table 3.15 shows the reliability results of vendor's service performance. The variable consists of four dimensions (PTQ, HQ, SQ and OQ).

Table 3.15: Results of Pilot Study: Vendor's Service Performance (n=30)

Items	Corrected Item-Total Correlation		Cronbach's Alpha if Item Deleted		Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
	Old Value	New Value	Old α	New α			
PTQ1	.636	.701	.486	.656	HQ1	.456	.690
PTQ2	.634	.648	.485	.685	HQ2	.539	.653
PTQ3	-.070	*excluded*	.763	-	HQ3	.414	.701
PTQ4	.230	*excluded*	.639	-	HQ4	.478	.678
PTQ5	.462	.562	.553	.731	HQ5	.543	.651
PTQ6	.495	.431	.548	.803			
(PTQ) Potential Quality Old (α = 0.636) / New (α = 0.776)					(HQ)Hard Process quality (α = 0.723)		
SQ1	.603		.769		OQ1	.448	.767
SQ2	.624		.764		OQ2	.653	.699
SQ3	.494		.793		OQ3	.588	.722
SQ4	.328		.822		OQ4	.494	.758
SQ5	.673		.752		OQ5	.582	.727
SQ6	.670		.753				
(SQ)Soft process quality (α = 0.808)					(OQ)Output quality (α = 0.777)		

None of the instrument subscales indicated any value below the threshold level of Cronbach's alpha (α=0.60). Regarding item-total correlation (please refer to the old values), all items other than PTQ3 and PTQ 4 reported a higher correlation than 0.4. Omission of PTQ3 increased the reliability of PTQ dimension to 0.763. Even though the omission of PTQ4 increased the reliability by 0.06, the study excluded PTQ3 and PTQ4 from the item list as both had item-total correlations below 0.3. The new reliability was 0.776, and item-total correlations (new values) were higher than 0.3. Thus, only four items from PTQ (i.e. 1,2,5,6) were considered for the final questionnaire.

Table 3.16 presents the reliability of partnership quality.

Table 3.16: Results of Pilot Study: Partnership Quality (n=30)

Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
COP1	.614	.801	PQT1	.597	.722
COP2	.455	.820	PQT2	.633	.704
COP3	.647	.795	PQT3	.565	.744
COP4	.399	.826	PQT4	.570	.735
COP5	.567	.808	(PQT) Trust(α = 0.781)		
COP6	.510	.813			
COP7	.660	.793	PQC1	.557	.773
COP8	.593	.803	PQC2	.625	.743
(COP) Cooperativeness (α = 0.828)			PQC3	.666	.722
			PQC4	.602	.752
			(PQC) Commitment (α = 0.798)		

The Cronbach's alpha for all dimensions was above 0.7, which confirmed a higher level of reliability. Item-total correlation also reported values greater than 0.3. However, the reliabilities reported in Table 3.16 were the highest values, and it is not advisable to exclude any item(s) that is perceived to increase reliability.

Table 3.17 exhibits the reliability analysis summary of partners' compatibility. Accordingly, both dimensions in the variable (i.e. organisational culture: CPC and Competitive priorities: CPP) reported acceptable levels of reliability, which was above 0.6. However, item-total correlations were relatively low, but maintained at above 0.3 level correlations.

Table 3.17: Results of Pilot Study: Partners' Compatibility (n=30)

Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CPC1	.606	.306	CPP1	.560	.477
CPC2	.329	.697	CPP2	.316	.643
CPC3	.422	.570	CPP3	.376	.609
(CPC) Compatible Culture (α = 0.636)			CPP4	.503	.535
			(CPP) Compatible Competitive Priorities (α = 0.645)		

Outsourcing success was measured using three dimensions; tactical (OST), strategic (OSS) and behavioural (OSB).

Table 3.18: Results of Pilot Study: Outsourcing Success(n=30)

Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OST1	.429	.700	OSS1	.323	.838
OST2	.319	.770	OSS2	.710	.731
OST3	.577	.636	OSS3	.667	.746
OST4	.802	.431	OSS4	.610	.765
(OST) Outsourcing Success: Tactical Measures (α = 0.719)			OSS5	.663	.748
			(OSS) Outsourcing Success: Strategic Measures (α = 0.807)		
OSB1	.637	.391	(OSB) Outsourcing Success: Behavioural measures (α = 0.678)		
OSB2	.424	.675			
OSB3	.430	.661			

The reliability analysis of each dimension is shown in Table 3.18. All of them had a satisfactory levels of reliability (α> 0.6) and item-total correlation threshold (>0.3).

In short, only two items from 'potential quality (PTQ)', which measures the vendors' service performance, were discarded. Moreover, the reliability of 'degree of outsourcing' was not measured. Degree of outsourcing means 'Breadth' x 'Depth'. However, there is no need for the breadth to be positively and linearly related to Depth. This is due to 'number of activities outsourced' (i.e. Breadth) and 'levels of outsourcing in each item' (i.e. Depth) being two different measures but jointly defined the construct. For instance, a firm may outsource few activities (breadth) with high/low depth, while it can also outsource higher numbers of activities with high/low depth, and hence there is no co-alignment between breadth and depth. Therefore, the measuring reliability is inappropriate for these two, as they do not need to correlate (linearly relate). They

jointly represent the ‘degree of outsourcing’, but individually act as two different things. For further clarification, the meaning is the same with measuring an area. “Area”= (height) x (width), but it is not necessary the ‘height’ to be correlated with ‘width’ to define an area.

The pilot study however, uncovered some potential modifications in the activity indexes. With regard to the banking sector, the human resource (HR) function split into ‘personnel selection’ and ‘training’, as they perform separately and are identified as separate functions in outsourcing. Additionally, ‘legal affairs’ and ‘office maintenance’ were also identified as separate functions in outsourcing. The pilot study revealed that sales/marketing in the banking sector has sub functions, such as ‘customer service’, ‘advertising and promotion’ and ‘corporate printing’. Accordingly, the new index of the degree of outsourcing comprises of 13 activities.

Table 3.19: Modified Activity Index

Banking Sector	Hotel Sector
1. ATM	1. Reception
2. Card processing	2. Reservation
3. Internal auditing	3. Laundry
4. Debt collection	4. Housekeeping
5. Legal affairs	5. Food and beverages supplies
6. Account processing	6. Restaurants
7. Personnel selection	7. Bars
8. Training	8. Kitchen operations
9. Information technology (IT)	9. Technical services (e.g. repair resources)
10. Customer service	10. Swimming pool maintenance
11. Advertising and promotion	11. Gardening services
12. Corporate printing	12. Administration
13. Office maintenance	13. Training
	14. Personnel selection
	15. Information systems and technology
	16. Sales/marketing
	17. Leisure activities (e.g. tour packages, entertainment activities, etc.)
	18. Security and surveillance

The hotel sector activities were reduced to 18 items, from an original of 20 proposed by Espino-Rodrı´guez and Padro´n-Robaina (2005a). However, common area cleaning and room cleaning was outsourced as a package of 'housekeeping'. Furthermore, sales, promotion and advertising operated under 'sales/marketing'. Four types of activities were merged into two groups. Next, purchasing and receiving were perceived too general, and hence some respondents demanded that the nature of purchases should be indicated in the questionnaire, and some left it blank. In two questionnaires respondents themselves added a part to 'purchasing and supplies' with '*of food and beverages*' Therefore, the activity was renamed as 'food and beverages supplies'. Additionally, 'general maintenance' also had an overlapping meaning with cleaning aspects in this study's context. Thus, it was also renamed as, 'technical service' and an example was provided along with the question (i.e. repair resources) for clarity. Then, the new lists of activities were finalized upon the recommendations of the research supervisor. The new activity indexes for both sectors are listed in Table 3. 19.

Concluding the fact in the instrumentation, the content validity and reliability tests indicated the need of some modifications for the initial developed measurement. Based on the analysis, the final version of the survey instrument was developed for final data collection (Please refer Appendix B).

N.B: Appendix B is a combined questionnaire. But two separate questionnaires for banks and hotels were prepared for data collection. The main difference is with the activity index in Part 01.

3.7 DATA COLLECTION PROCESS

Data were collected from mid-level managers (i.e. operational / service/ logistics) in the banking and hotel sectors form the month of July to November in 2011. A preliminary search was carried out to identify certain personnel in the organisation(s) who are responsible for handling the outsourcing function. Accordingly, the researcher referred to the professional bodies which that particular sector is attached to, websites, and annual reports in order to obtain particular details. For example, information was obtained from 'Association of Professional Bankers, Sri Lanka' and 'Tourist Hotels Association, Sri Lanka'. Based on the information gathered, the target respondents' list was prepared with their names, designations and personal contact details pertaining to each unit of analysis. For some organisations, it was difficult to find personal information of the target respondents to whom the researcher made phone calls. The respondents' list was organized with their names, designations and contact details which include address and either telephone number or email address. The data were collected in two rounds.

First, the questionnaire was mailed to the whole population of the hotel sector, taking into account only 264 hotels, with the removal of cases used for the pilot test (i.e. 291-pilot study 27 = 264 units). A stamped, self-addressed envelope was enclosed. The researcher allowed a three weeks period of waiting for the respondents to return the questionnaires. Mitchell and Jolley (2006) stated that self-administered questionnaires have the advantage of being easily distributed to a large number of people, are able to cover wide geographical locations, are economical, and are anonymous, which helps keeps respondents honest. Despite those advantages of self- administered questionnaire, the postal method was able to gather only eighteen responses.

Due to this fact, the researcher contacted the chairman of Tourist Hotels Association, Sri Lanka' (THASL) for their assistance as a strategy to reach respondents. The primary aim was to enhance the respondents' confidence in responding to the questionnaire, as the request came from a respected body. Accordingly, eighty questionnaires were distributed to the targeted hotel sector invitees, who participated in the Hotel and tourism forum, held on 12th August 2011, at Kings Court – Cinnamon Lake side Hotel, Colombo, Sri Lanka. The forum was organised by THASL, and altogether, there were hundred and fifty seven (157) participants from the hotel sector. Some invitees were omitted from the list, such as hotel chain heads and corporate heads, and only mid-level managers/executives were selected, according to their designation. Consequently, fifty-seven completed questionnaires were returned. Thus, in the first round, the researcher collected a total of seventy-five completed responses.

The second round basically followed two methods of data collection in order to avoid common method variance in self-reporting (Podsakoff *et al*., 2003; Wang and Pho, 2009). In mid-August, the researcher started to make appointments with the rest of the target respondents in the hotel sector sample frame. At that time, these target hotels were not registered under THASL. Then, the researcher personally visited and approached them in order to collect data via direct interviews. Soft reminders in the form of phone call were made before the visit to eliminate idle time and minimize waiting. During the period of three months, the researcher conducted fifty-one direct interviews. A token of appreciation was given to each respondent (i.e. A pen and a key tag of Petronas Twin Towers). Simultaneously, the researcher started to visit places where industrial personnel are supposed to visit, and also participated in industrial events with the permission of corresponding organising committees, such as tourism

festivals / exhibitions (e.g. Hotel, Hospitality and Food, Sri Lanka 2011, South Asia's International Hotel, Hospitality & Tourism Event' - Colombo - 27th – 29th October 2011; Road to Paradise' Tourism Festival, Colombo - September 28th -29th 2011) and conferences (e.g. Annual convention: Association of Professional Bankers, Sri Lanka' - November 4th -5th 2011).

Specifically, the purpose of organising the first type of event was to gather stakeholders in the hotel sector to demonstrate/market each other's products/services (i.e. hoteliers, airlines, tour planners, customers and vendors who offer services for hotel sector). As the events were organised for business deals, the mid-level managers' presence were guaranteed. Therefore, in exhibitions, the researcher personally visited each exhibition lot/room presented by the hotel organisations, and had a discussion prior to distributing the questionnaire. The purpose was to identify the correct respondent. After a brief explanation regarding the purpose of the study, the questionnaire was distributed to the representatives (i.e. either manager or executive), who agreed to their voluntary participation in the study. Each submission was marked as 'submitted' in the sample frame. The researcher was present in the vicinity of the exhibition floor to assist if any problems were encountered by the respondents. The purpose was to avoid the drawbacks of the absence of the researcher to assist in clarifying ambiguous questions encountered by the respondents. This method produced a higher response rate. Accordingly, the researcher was able to gather a total of sixty-eight responses from hotel sector events over a period of five days.

Next, the researcher attended the 'Annual Convention: Association of Professional Bankers, Sri Lanka 2011'. Unlike the hotel sector, all banks operating in Sri Lanka are under the affiliation of 'Association of Professional Bankers Sri Lanka'. Therefore, the

convention became a realistic opportunity to reach professionals in the banking sector within a shorter period of time. Prior approval was obtained from the organising committee for the participation and data collection. The invitees' list was requested from the organising committee prior to the function in order to filter the target respondents. Accordingly, the researcher was positioned parallel to the registration desk of the convention to identify particular respondents. The self-administered questionnaire was prepared as a bundle, which was placed in a folder, with some additional papers and a pen. The pen served as a double function: as a form-filling tool and as a token of gratitude. Meal and refreshment breaks were used by the researcher to remind and help the respondents to fill up the questionnaires. Some questionnaires were completed as 'direct interviews' upon their requests (i.e. some respondents did not like to read the questionnaire), while some respondents were seeking assistance to clarify some questions. However, many requested a brief explanation of the study purpose and implicational value of the study to the banking sector. A questionnaire drop desk was set up at the exit point of the convention premises. The data collection was very much successful in terms of number of responses collected, interactive discussions made, and the rapport built with industrial personnel. A total of twenty-five questionnaire sets were distributed (population, 27 – pilot study, 3). Finally, twenty-three responses were collected from the banking sector. Out of twenty-three, five were directly interviewed.

In summary, hundred and ninety four (194) completed questionnaires were collected from the hotel sector (143 self-administered, 51 direct interviews). Then, twenty-three (23) responses were collected from banking organisations (18 self-administered 5 direct interviews). The study employed two methods (i.e. self-administered questionnaire and direct interviews) of data collection in order to minimize common method variance. A

total of 217 questionnaires were subjected to the preliminary scanning process for data cleaning. Then, five questionnaires were omitted due to the severe incompleteness. Finally the usable quantity of questionnaire was 213 (23 banks, 190 hotels). Based on the number of usable questionnaires, the response rate was calculated.

1. Response rate to the total population

$$R_{T=} {}^{213}/_{318} = \mathbf{66.9}\%$$

2. Response rate after pilot test (Population (T) – Pilot study(p))

$$R_{T-p=} {}^{213}/_{318-30} = \mathbf{73.95}\%$$

3.8 DATA ANALYSIS PROCEDURE

Data analysis started with the manual checking for accuracy and completeness of the returned questionnaires. A code was assigned to each questionnaire for identification purpose. Then, all the data were entered into the SPSS version 18.0 spread sheet for basic analysis. Prior to the analysis, data were cleaned and subjected to the treatment of missing values. The refined data were then submitted to further analysis.

The data analysis mainly focused on tests for errors, scale purification, tests for multivariate assumptions, descriptive statistics, and inference statistics for hypothesis testing. Basically, scale purification followed the procedure introduced by Ahire, Golhar and Waller (1996). This is further developed by Koufteros (1999) for structural equation modelling. The framework is shown in Figure 3.20, and it mainly includes exploratory

factor analysis (EFA), Cronbach's Alpha reliability and confirmatory factor analysis (CFA), which assesses unidimensionality, reliability and validity.

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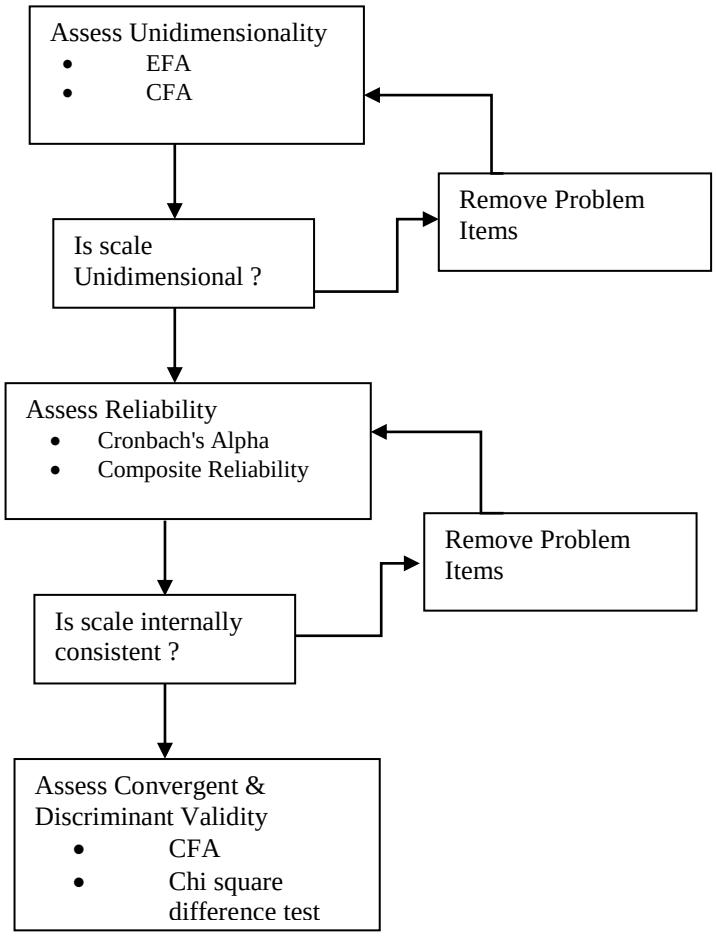


Figure 3.2: Measurement Property Assessment Framework

3.8.1 Cronbach's Alpha Reliability

The reliability indicates that the measure is bias-free, and offers consistent measurement across time and across the various items in the instrument. Reliability helps assess the goodness of fit (Cavana *et al*., 2001). The most popular test of "inter-item consistency reliability" is the Cronbach's alpha. It is employed for pilot data collection. According

to Cavana *et al*. (2001), a value of less than 0.6 is considered as poor, while a value of over 0.8 reflects high internal consistency.

3.8.2 Exploratory Factor Analysis (EFA)

Malhotra (2004) defined factor analysis as an interdependence technique, in which an entire set of interdependent relationships is examined without making the distinction between dependent and independent variables. It is also known as a powerful statistical technique for data reduction and summarization. The statistical investigation primarily focuses on the interpretation of the strength of the relationship of each variable to the construct (Hair *et al*., 2006). The main difference between EFA and CFA is, EFA explores the possible underlying factor structure of a set of observed variables, without imposing a preconceived structure on the outcome (Child, 1990). Subsequently, the researcher is not forcing the numbers of factors that should be extracted; instead, the analysis proposes the number of latent factors in the entire measure. Therefore, EFA basically simulates observed data; thereby presenting factors discriminated by the observed data. Subsequently, EFA outlines the content (i.e. items) of each identified factor/component, with their corresponding contribution. EFA is also used to analyse common method variance with '*none*' or zero rotation. However, adjustments for rotation methods improve the explanation of factor loadings as it could mitigate some of the vagueness associate with preliminary analysis (Child, 1990).

The '*varimax'* is the most commonly used method for rotation. It is an orthogonal method of rotation that minimizes the number of variables with high loadings on a factor, thereby enhancing the interpretability of the factors (Malhotra, 2004).

3.8.3 Confirmatory Factor Analysis (CFA)

CFA statistics demonstrate how well the specification of factors matches the actual data (Hair *et al*., 2006, p. 774). Unlike EFA, CFA requires specification of a model 'a priori', which is based on the review of relevant theory and literature to support model specification. Therefore, the researcher has to pre-determine the number of factors to extract. Basically, CFA plays a critical role in measurement model validation in path or structural analyses (MacCallum and Austin, 2000). Confirmatory factor analysis can be used to assess the measurement model by examining the constructs' unidimensionality, reliability and validity.

The existence of unidimensionality can be established by evaluating the goodness-of-fit (GOF) of the proposed model (Bagozzi and Baumgartner, 1994; Garver and Mentzer, 1999), and each of the variable's direction of path and significant level (Garver and Mentzer, 1999). The goodness-of-fit (GOF) measures describe how well a specified model reproduces the covariance matrix among indicator variables (Hair *et al*., 2006, p. 708). A model with good fit provides a valid platform for researchers to subsequently analyse the hypothesized relationships among constructs. The model of this study is evaluated using the multiple fit criteria, namely: the chi-square statistics (χ^2), degree of freedom (df), p-value of the chi-square statistic, goodness of fit index (GFI), relative chi-square (χ^2/df), comparative fit index (CFI), the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR) (Bryne, 2001; Hair *et al.*, 2006). However, these GOF indices can be categorized into three general groups: absolute, incremental and parsimony fit measures. Absolute measures examine how well the deduced theory fits the observed data (Hair *et al*., 2006). The incremental indices show how well a specified model fits relative to some

alternative baseline model (ibid, p.749). Here, the baseline model is referred to as the 'null model', which assumes the observed variables are not correlated. Next, parsimony indices are conceptually similar to the adjusted R^2 in regression (Hair *et al*., 2006). Thus, it provides information about the best model among competing models.

However, the primary purpose of CFA is to purify and determine the measurement model, thereby developing the structural model in SEM, used for hypothesis testing. In this study, the AMOS statistical package was used for structural equation modelling (SEM).

3.8.4 Structural Equation Modelling (SEM)

SEM combines the factor (measurement) and path (structural) models into a single model, where each latent factor is regressed onto the others. Basically, SEM has the advantage of being able to estimate the magnitude of error terms, unlike the approach of path analysis, which relies solely on multiple regression procedures, and is assumed that error terms are zero (Kaplan, 2000). It is also capable of examining a chain of dependent relationships concurrently (Hair *et al*., 2006) hence the analysing power is higher in-terms of modelling interactions, nonlinearities, correlated independents, measurement errors, correlated error terms, and multiple latent independents/dependents relationships (Kumar *et al*., 2008). Besides, SEM has an attractive graphical modelling interface that simplifies model interpretation (Kumar *et al*., 2008).

Therefore, the current study applied structural equation modelling (SEM) for inference statistical analysis. However, there are two approaches that SEM can perform: the one-step approach or the two-step approach. In the one-step approach, the estimation of both

the measurement and structural relationships of an SEM model are carried out simultaneously in a single analysis. The two-step approach separates the estimation in two different analyses. This approach is preferable among researchers, due to the fact that it facilitates overcoming the problems related to interpretational confounding (Burt, 1976) and misspecification (Lance *et al*., 2007), which are quite inherent in the one-step approach (Gallagher *et al*., 2008). Furthermore, the two-step approach is concerned with a series of structural equations that represents the causal processes observed in the study, and the depiction of these structural links in a pictorial path model (Byrne, 2001). Moreover, SEM analyses the 'goodness of fit' in order to ascertain whether the expected values of the model fit the observed values for hypothesis testing. Accordingly, SEM will be tested on the twenty hypotheses developed in this study.

The researcher however is aware of the potential weaknesses of structural equation modelling. These are, 1) lack of clarity concerning what exactly is being tested, 2) a poorly fitting structural (i.e., path) component that is masked by a well-fitting composite model, 3) a large number of equivalent models that will always yield identical fit to the target model 4) omitted variables that influence constructs included in the model and 5) low power or sensitivity to detect critical misspecifications. (Kaplan, 2000; Byrne, 2001; Gallagher *et al*., 2008).

SUMMARY

Chapter 3 elaborates the research methodology of the study. The research however, lies in the positivist research domain. Thus, quantitative and cross sectional data were collected through the survey method. The banking and hotel organisations in Sri Lanka were selected as the study unit where mid-level managers/ executives were identified as

respondents. A structured questionnaire (i.e. survey instrument) was developed with reference to the previous literature. It had been subjected to the pilot tests for content validity, and reliability. The finalized questionnaire was forwarded to the final data collection, and several steps were taken to minimize bias associated with the research method, such as the measures of the questionnaire consisting of a 5-point and a 7-point Likert scale, and two types of methods were employed for collecting data through structured questionnaire. This is statistically tested and reported in Chapter 4.

A total of 213 usable questionnaires were collected by self-administered method and direct interviews. Several strategies were taken in order to enhance the response rate, including offering a token of gratitude, follow up phone calls, and supports from affiliated professional bodies as an intermediary channel to distribute questionnaires. Accordingly, the study exceeded the minimum sample size required, and the response rate to the population reported is approximately sixty seven per cent.

The preliminary data analysis was conducted using the SPSS version 18.0, while AMOS would be applied for inference statistics. The chapter also outlines the advantages of SEM. The complete data analysis is explained in Chapter 4.

CHAPTER 4

DATA ANALYSIS

4.1 INTRODUCTION

This chapter presents the preliminary data analysis (i.e. descriptive) and structural equation modeling (SEM). SPSS version 18.0 software package is used for descriptive statistics, while AMOS 18 version is used for SEM. Basically, the SEM technique is applied to develop the measurement model, and establish causal relationships predicted in the research model. Test for common method variance , multivariate assumptions, statistics for scale purification and measurement model validation are also reported. Therefore, this chapter provides the evidence(s) of logical induction that supports the establishment of rational relationships among the variables in the theoretical model.

4.2 DATA PREPARATION FOR ANALYSIS

In this study, 213 usable responses were collected from 318 organisations. The unit of analysis was the service organisations located in Sri Lanka. Accordingly, 23 banks and 190 hotels (above 2 Star) were investigated. The collected data were preliminarily scanned for accuracy and precision. Then, they were subjected to cleaning process (for 213 questionnaires). The purpose was to identify outliers and provide treatments for missing values.

4.2.1 Data Cleaning

The data analysis is started by transcribing data into SPSS version 18.0. Then, they were subjected to the cleaning process. Several plot diagrams/graphs helped in

identifying the outliers. Outliers are cases that have out-of-range values, as compared to the majority of other cases. Their presence in the data may distort statistical test results (Hair *et al.*, 2006), such as very high or very low arithmetic mean or the range (Bryman and Bell, 2007), which may in turn result in wrong conclusions. Outliers are detectable via analysis of the residual scatterplot. According to Tabachnick and Fidell (2007), cases that have a standardized residual of more than 3.3, or less than -3.3 in the scatterplot are considered outliers. Few outliers in large samples are common, and most of the time, taking any action is unnecessary. Subsequent checks were carried out for 'consistency' and 'missing values'.

First, one common case was identified as an outlier. This is due to the fact that the degree of outsourcing of that particular firm was zero (i.e. not practising outsourcing), and thus, the case is not applicable for the analysis. Then, the rest of the data (i.e. 212) were forwarded to statistical checks to identify any common outliers that need to be eliminated from the final analysis. Five cases were deleted, due to them being detected as outliers. Then, only 207 questionnaires were forwarded into the missing values treatments.

Random missing values can be substituted with 'natural values' or by 'imputed value' (Malhotra, 2007; Tsikriktsis, 2005). The neutral value method assigns the mean value of the variable (i.e. means response of the variable) to the missing response. Mean substitution can be performed in three ways 1) total mean substitution, 2) subgroup mean substitution and 3) case mean substitution (Tsikriktsis, 2005). Accordingly, only six missing values were found, and replaced with individual case mean value of responses for a particular variable. For further confirmation, Boxplot diagrams were run again, against each construct in order to verify the cleanliness of data (please refer

Appendix C). Accordingly, there were no missing values reported, while few outliers were detected, which are not common for the whole dataset.

However, some variables required scale transformations or calculations. This is known as, 'variable respecification' (Malhotra, 2007) and it includes 'transforming data into another scale for meaningful analysis and interpretation'. The present study used scale transformation for most of the elements of demographic profile.

4.2.2 Scale Transformation and Respecification

The workforce, domestic branches of the organization, and the duration of experience in outsourcing were subjected to the scale transformation for better demographic profile analysis. They were reported directly as there were no previously complete categorizations with regards to outsourcing in the Sri Lankan context. The reported data for aforementioned demographic items were categorised into three groups (low/medium/ high) for descriptive analysis.

Next, the aggregation of each latent variable was required for inference analysis and hence, the sum of the items' values in each variable was also calculated. Somehow, it is important to explain the calculation of degree of outsourcing. The construct identified as a multiplication of 'breadth' and 'depth'. The relevant data were obtained with 1-5 Likert Scale, with 1 representing both zero depth and breadth. Thus, it required re-coding data into a new variable (i.e. 0-4), for the purpose of eliminating the 'effect of zero outsourcing' on calculating the total degree of outsourcing. Subsequent descriptions of certain calculations were illustrated, and described later in this chapter. The following section analyzed the demographic profile, with subsequent scale transformations and calculations.

4.3 DESCRIPTIVE STATISTICS

4.3.1 Demographic Profile

The summary of descriptive characteristics of the unit of analysis investigated in this study is illustrated in Table 4.1. The table mainly presents the type of the organization, and their subcategories.

Table 4.1: Demographic profile of Unit of Analysis

	Frequency	Valid Percent %	Cumulative Percent %
2 Star	59	28.5	28.5
3 Star	53	25.6	54.1
4 Star	56	27.1	81.2
5 Star	12	5.8	87.0
5+ Star	4	1.9	88.9
Total Hotel organizations	**184**	**88.9**	**88.9**
Government Banks	2	1.0	89.9
Semi government Banks	2	1.0	90.8
Private Banks	11	5.3	96.1
Foreign Banks	8	3.9	100.0
Total Banking organizations	**23**	**11.1**	**100.0**
Total	207	100.0	100.0

A total of 184 hotels and 23 banking firms were investigated. The majority of hotels studied are rated as two stars, followed by three, four, and five stars. The lowest percentage of observations is reported from above 5-Star (i.e. 5+) hotels. This is due to the fact that the number of high-end hotels available in the country is quite low. As for the banking sector, the majority of them are private banks (eleven), followed by foreign banks (eight). Government and government-linked banks are comparatively low in number. They operate in a wide range of geographical area compared to other types of banks.

Next, the frequency analysis of the 'workforce' of organisations is illustrated in Table 4.2. The workforce ranged from 50 to 2500. The lowest is reported from a 2-star hotel, while the maximum is reported from a government owned geographically expanded banking organization. The workforce however is categorised into 3 levels (i.e. Low, Medium and High), based on percentile values, obtained from SPSS. Firms with a workforce of below 120 (<120) are categorised as 'low' while 121 – 275 as 'medium', and above 276 (>276) as 'high' level. The frequency of each level of the workforce is reported in Table 4.2.

Table 4.2: Demography Workforce (WF)

			group * WF Category Crosstabulation			
			Low WF	Medium WF	High WF	Total
group	Hotel	Count	65	68	51	184
		% within group	35.3%	37.0%	27.7%	100.0%
		% within WF category	92.9%	97.1%	76.1%	88.9%
		% of Total	31.4%	32.9%	24.6%	88.9%
	Bank	Count	5	2	16	23
		% within group	21.7%	8.7%	69.6%	100.0%
		% within WF category	7.1%	2.9%	23.9%	11.1%
		% of Total	2.4%	1.0%	7.7%	11.1%
Total		Count	70	70	67	207
		% within group	33.8%	33.8%	32.4%	100.0%
		% within WF category	100.0%	100.0%	100.0%	100.0%
		% of Total	33.8%	33.8%	32.4%	100.0%

The majority of hotels investigated are reported to have a medium level of workforce (37%). The majority of banks (69.6%) operate at high levels of workforce, while 21.7 per cent of the banks are at a low level. However, only 8.7 per cent of banks are operated at a middle level workforce. This indicates that either the banks are operating

with a greater workforce (maybe due to wide geographical expansion), or with a lesser workforce (maybe due to focus only limited markets). For example, 'Bank of Ceylon' operates nationally, and offers a full range of services, while 'Citibank' focuses on corporate clients, making geographical expansion unnecessary.

The next analysis is based on the number of branches in the country (i.e. in banks/hotels), or members in the chain (i.e. hotels). This is a factor that helps determine the geographical expansion of the business. Relatively, banks have a wider range of expansion than hotels.

The maximum number of branches recorded for the banking sector is 45. As for the hotel sector, it is only 6. Considering this distinct numerical difference, different percentiles are generated to categorize the groups, as shown in Table 4.3.

Hotels and banks were then categorised into three groups – low, medium and high. 'Low level geographical expansion' group comprises of hotels with branches below 2 and banks below 14. 'Medium level geographical expansion' group includes hotels with branches ranging from 3 to 5 and banks ranging from 15 to 30. 'High level geographical expansion' group is represented by hotels of more than 6 branches and banks more than 30 branches.

Cross-tabulated figures in Table 4.3, further explains the frequency of each category. According to within group percentages, banks reported a higher value in the high and low geographical expansion category (i.e. 13% and 52.2% respectively) in comparison to hotels. However, nearly 50 per cent of hotels and banks operate with limited geographical expansion. This may be due to the geographical limitation of the country (i.e. as a whole the total area of the country is only 65610 km^2).

Table 4.3: Demography: Number of Branches

		Hotels	Banks	Total
N	Valid	184	23	207
	Missing	0	0	0
Minimum		1	6	
Maximum		6	45	
Percentiles	33.33	2.00	14.00	
	66.66	4.00	30.00	

Branches * group Crosstabulation			Group		
			Hotel	Bank	Total
Bran H/B	Low level geographical expansion	Count	93	12	104
		% within Bran H/ B	89.0%	11.0%	100.0%
		% within group	50.5%	52.2%	52.2%
	Medium level geographical expansion	Count	82	8	90
		% within Bran H/B	91.0%	9.0%	100.0%
		% within group	44.6%	34.8%	34.8%
	High level geographical expansion	Count	9	3	12
		% within Bran H/B	75.0%	25.0%	100.0%
		% within group	4.9%	13.0%	13.0%
Total		Count	184	23	23
		% within Bran H/B	100.0%	100.0%	100.0%
		% within group	100.0%	100.0%	100.0%

The next demographic element is organisation's 'experience in outsourcing'. The frequency analysis is demonstrated in Table 4.4. The investigated sample, however, has a minimum of 2 years, and a maximum of 25 years of experience in outsourcing. Based on the percentile values generated, the data were categorised into three groups - low, medium and high level of outsourcing experiences. Low level group has outsourcing experience of below 6 years; medium group has 7 to 10 years while the high level group has above 11 years outsourcing experiences. The cross-tabulated analysis was formulated based on these factors, and it is depicted in Table 4.4.

Table 4.4: Experience in Outsourcing

N	Valid	207
	Missing	0
Mean		8.99
Minimum		2
Maximum		25
Percentiles	33.33	6.00
	66.66	10.00

exp * group Crosstabulation			group		
			Hotel	Bank	Total
exp	Low level experience	Count	66	4	70
		% within exp	94.3%	5.7%	100.0%
		% within group	35.9%	17.4%	33.8%
	Moderate level experience	Count	69	8	77
		% within exp	89.6%	10.4%	100.0%
		% within group	37.5%	34.8%	37.2%
	High level experience	Count	49	11	60
		% within exp	81.7%	18.3%	100.0%
		% within group	26.6%	47.8%	29.0%
Total		Count	184	23	207
		% within exp	88.9%	11.1%	100.0%
		% within group	100.0%	100.0%	100.0%

Table 4.4 further shows that, the majority of firms (37.2%) have 7-10 years of experiences in outsourcing, while only 29 per cent of firms have more than 11years of experiences. However 47.8 per cent of banking firms reported high-level experience, while only 26.6 per cent hotels reported a higher level of experience in outsourcing. Comparatively, hotels have generally low and medium level of experience in outsourcing compared to banks. Based on the arguments drawn from the sample, it can be surmised that in the context of Sri Lanka, the banking sector is more matured in outsourcing compared to the hotel sector. But, these figures (in Table 4.4), provide

evidences of, that there may be a greater potentiality and tendency to adapt outsourcing as a business strategy in the hotel sector in future.

The respondents of this study were identified as managers/middle level managers/executives, who are engaged in outsourcing with certain organisations. The last question (Section C, Question 06) in the questionnaire was aimed to obtain the respondents' demographic information: names, designation and contact details. Majority of respondents did not specify their designation clearly. For example, there was a preference to state one's designation vaguely as 'manager', while other respondents stated the department they were employed (e.g. 'operations', 'services', 'logistics', 'supply chain'). Therefore, these department-specific management positions were grouped as 'middle-level managers'. In addition to that, some respondents stated their designation as 'executive'. Table 4.5 exhibits the frequency of each respondent category in the study.

Table 4.5: Respondents' Profile of Designation

Title	Frequency	Percentage to Total
Manager (unspecified)	36	17%
Middle level manager	88	43%
Executive	52	25%
Designation not stated	31	15%
Total	207	100%

The majority of the respondents are middle level managers (43%), followed by executives (25%), and individuals, who specified their designation as 'managers' (17%). Nevertheless, a total of 31 respondents have refused to state their designation details. This might be for personal reasons or unfounded phobias (perceived risk of exposing firms' data) of exposing data to a third party.

4.3.2 Summary of Demographic Profile

The study investigated hotels (above 2 Star) and banks in Sri Lanka. A total of 207 usable questionnaires were forwarded for further analysis. The demographic profile examined included organisational type, workforce, geographical expansion and experience in outsourcing. Consequently, the hotels were categorised based on the star ranking, while banks were categorised in terms of ownership. All other aspects were classified into three groups, which are 'low, medium and high' for a meaningful analysis.

From the result of the demographic profile analysis, banks tended to gravitate towards maintaining either a high or low level workforce than hotels. This may be associated with the geographical expansion of the banks. Perhaps this is due to the fact that, higher geographical expansion of banks requires higher level of workforce and vice versa. However, the above mentioned pattern was absent from hotels.

With regards to the current outsourcing experiences, the banking sector reported higher level of experience. However there was a high percentage of medium level experience group reported in hotels, followed by the low level group. Therefore these two groups will collectively accumulate more experiences in the near future. This indicated that outsourcing has become popular among hotels in Sri Lanka. Furthermore, outsourcing was confirmed as a middle level management task in this study context.

4.4 DESCRIPTIVE STATISTICS FOR CONSTRUCTS

This section comprises of simple descriptive analysis of six major constructs, which include the degree of outsourcing, vendor management capability, vendors' service performance, partnership quality, partners' compatibility and outsourcing success.

4.4.1 Degree of Outsourcing

Degree of outsourcing is a combined construct of 'breadth of outsourcing' and 'depth of outsourcing'. The questionnaire listed activities for both types of firms. Respondents were asked to mark activities currently outsourced in their respective organisations (i.e. breadth). The intensity of outsourcing (i.e. depth) was measured using a 5-point Likert scale. Based on the reported data, the degree of outsourcing is calculated as follows.

$$Degree of Outsourcing(DOO) = Breadth\ of\ outsourcing(B) \times Depth\ of\ outsourcing(D)$$

$$B = \frac{Number\ of\ Activites\ Outsourced}{Total\ Number\ of\ Activities}$$

$$D = \frac{Total\ Intensity\ of\ Outsourcing\ (i.e. \sum of scales\ )}{B \times 4\ (i.e. Maximum\ Intensity)}$$

A total of 18 number of activities for hotels (H), and 13 number of activities for banks (B), were listed. Therefore, the calculations were done separately.

$$DOO_H = \frac{\sum Activities\ \ outsourced}{18} = (B_H) \times \left(\frac{\sum ofscales}{B_H \times 4}\right)$$

and,

$$DOO_B = \frac{\sum Activities\ \ outsourced}{13} = (B_B) \times \left(\frac{\sum ofscales}{B_{\boldsymbol{B}} \times 4}\right)$$

Table 4.6 shows descriptive statistics for the degree of outsourcing. The depth data is reported in a 5-point Likert scale, while breadth is reported as a numerical value. As previously noted, the data were re-coded to 0-4 in order to eliminate the effect of zero outsourcing, as zero represents no outsourcing at all (in-sourced), while 4 means the activity is fully outsourced. Then, the 'degree of outsourcing' is derived after a series of calculations of 'breadth' and 'depth', as shown in the formulas above. Due to the effect of computation, higher values (8.37± 1.189) are reported in the mean and standard deviation.

Table 4.6: Descriptive statistics for Degree of Outsourcing

		Depth of Outsourcing	Breadth of outsourcing	Degree of Outsourcing
N	Valid	207	207	207
	Missing	0	0	0
Mean		9.3046	.9026	8.3756
Std. Deviation		1.2538	.0754	1.1895
Minimum		6.30	.61	5.25
Maximum		13.82	1.00	11.75

Note: Initially 5-point Likert scale was used for depth and then recoded to 0-4.
Scale: 0= not outsourced at all; 4 = totally outsourced.
Breadth is the fraction of activities outsourced to total activities listed.

With regards to the depth of outsourcing, the firms' minimum level of depth for a single activity should be 1, and the maximum depth (i.e. intensity) for all activities should be 18 (as there are 18 maximum activities). In reference to Table 4.6, the mean value for depth is 9.3046, with a standard deviation of $\pm$ 1.25. This indicates that the majority of firms observed, have average depth of outsourcing. Accordingly, the majority of the firms observed prefer to assign an average power to the vendor.

Next, the mean score of breadth is $0.9026 \pm .0754$ (M+SD). This explains that the majority of firms have applied outsourcing for about 90 per cent of activities. The range of breadth can be interpreted as a percentage. The sample shows the minimum breadth (i.e. number of activities) as 61 per cent while there are some firms that apply outsourcing for all activities.

The possible range of total degree of outsourcing should be 1 to 18. As there is no 'total depth of outsourcing' reported, there were no firms that outsource whole activities (breadth) with total intensity (depth). Thus, the range of degree of outsourcing is reported as 5.25 to 11.75 and the mean score is valued at $8.37 \pm$ 1.189 (M+SD). These figures indicate that service outsourcing is being moderately practiced in Sri Lanka. Thus it has the potential to be further intensified.

Next, the graphs depicted in Figure 4.1 show that the level of outsourcing is higher in banks than hotels. Corporate printing, advertising and promotion and maintenance in the banking sector were outsourced more than other activities. Personnel selection, card processing and IT were generally outsourced at lower rates.

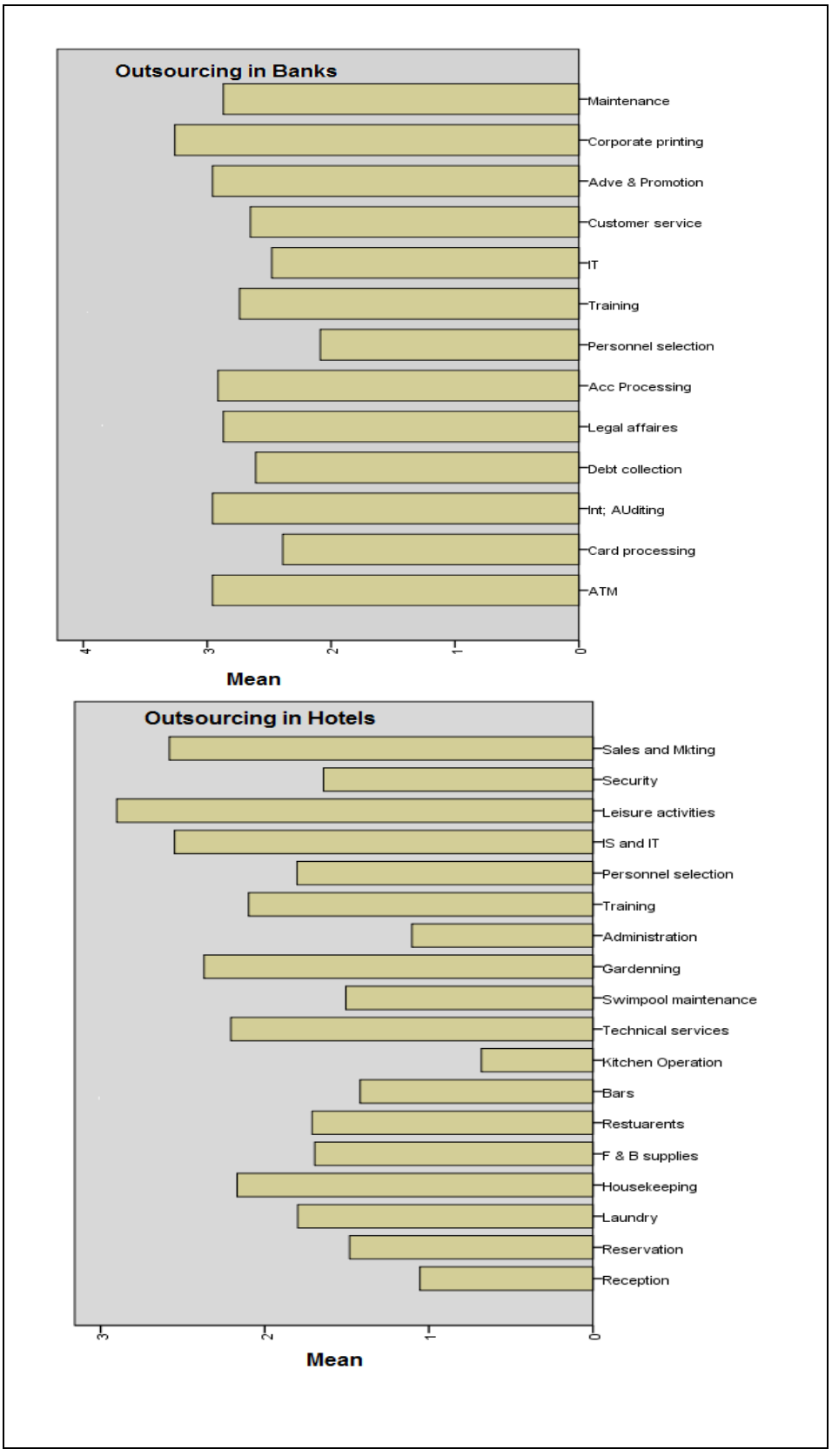


Figure 4.1: Activities Outsourced in Banks and Hotels.

With regards to hotels, the majority of them outsourced leisure activities, information systems and information technology (IS and IT) and sales and marketing activities. Kitchen operations, administration and receptions were the activities that are still internalized. However, it is apparent that the hotels have experiences in outsourcing for all types of activities listed.

4.4.2 Vendor Management Capability

The vendor's management capability was measured with 7-point Likert scale. As shown in Table 4.7, the mean score is reported as 5.75± 0.1085 (M±SD). This indicates that the majority of respondents have above average (i.e. score 4) level for a vendor management system. Among the items in the variable, VM_2 reports the highest value (5.81±1.095). It explains the 'focal firm's ability to monitor vendor(s) appropriately'. The respondents' agreement on their 'ability to monitor vendor' is higher than other items in vendor management activities. However, the lowest mean value (5.72± 1.027) is reported from VM_4, which is 'focal firm's capability to develop vendor(s)'. But comparatively, there is no significant difference in the respondents' agreement on each item. This implies that all vendor management activities are perceived as equally important.

Table 4.7: Descriptive statistics for Vendor Management Capability

Variable/ Items	Mean	Std. Deviation
Vendor Management Capability	5.75	1.085
VM_1 (Vendor Selection)	5.73	1.142
VM_2 (Vendor Monitoring)	5.81	1.095
VM_3 (Performance Evaluation)	5.77	1.095
VM_4 (Vendor Development)	5.72	1.027
VM_5 (Compensation)	5.73	1.070
Valid N (listwise)		207

Note: A 7-point Likert scale was used. Scale: 1 = strongly disagree; 7 = strongly agree

4.4.3 Vendors' Service Performance

The vendors' service performance was measured with 7-point Likert scale. As shown in Table 4.8 the construct comprises of four dimensions. All dimensions are reported above 4 mean scores. This implies that the respondents tend to agree with the vendors' service performance. Hard process quality (HQ) is reported to have the highest value among them. This indicates that the respondents have more agreeableness with vendors' HQ than to other performance aspects of vendor(s).

Table 4.8: Descriptive statistics for Vendors' Service Performance

Dimension	Mean	Std. Deviation
Potential quality	5.19	.50
Hard process quality	5.88	.78
Soft process quality	4.64	.73
Output quality	4.21	.82
Valid N (listwise)		207

Note: A 7-point Likert scale was used. Scale: 1 = strongly disagree; 7 = strongly agree.

4.4.4 Partnership Quality

Table 4.9 provides descriptive statistics of 'partnership quality' construct. It was measured with three dimensions, which are cooperativeness, trust and commitment. All three dimensions in the construct report above 4 means scores. Cooperativeness scores the highest mean value (5.75 ± 0.917), followed by trust (5.55 ± 1.148). There are no notable differences in the respondents' agreeableness on cooperativeness and trust in comparison to commitment.

Table 4.9: Descriptive statistics for Partnership Quality

Dimension	Mean	Std. Deviation
Cooperativeness	5.75	.917
Trust	5.55	1.148
Commitment	4.44	1.720
Valid N (listwise)		207

Note: A 7-point Likert scale was used. Scale: 1 = strongly disagree; 7 = strongly agree.

Table 4.9 provides descriptive statistics of 'partnership quality' construct. It was measured with three dimensions, which are cooperativeness, trust and commitment. All three dimensions in the construct report above 4 means scores. Cooperativeness scores the highest mean value (5.75 ± 0.917), followed by trust (5.55 ± 1.148). There are no notable differences in the respondents' agreeableness on cooperativeness and trust in comparison to commitment.

4.4.5 Partners' Compatibility

The partners' compatibility construct comprises of corporate cultural compatibility and compatibility in competitive priorities dimensions. A 5-point Likert scale was used to measure each dimension. Table 4.10 shows the mean scores of each dimension in the construct.

Table 4.10: Descriptive statistics for Partners' Compatibility

Dimension	Mean	Std. Deviation
Culture	3.97	.644
Competitive Priorities	5.31	.956
Valid N (listwise)		207

Note: A 5-point Likert scale was used to measure the respondents' agreement on the extent of compatibility' Scale: 1 = Not at all; 5 = To a greater extent

The mean value is considerably higher in "compatibility in competitive priorities" (3.84 $\pm$0.488) than the 'cultural compatibility' (3.15$\pm$0.541). Therefore the results show that the competitive priorities are perceived to be more important than corporate cultural compatibility. Both standard deviations reflect a high level stability of responses.

4.4.6 Outsourcing Success

The success of outsourcing was measured in terms of tactical, strategic and behavioural dimensions. Table 4.11 illustrates the mean scores and standard deviations of each dimension. Even though the highest value is reported from tactical outcome (4.58$\pm$1.115), the differences among the mean scores of dimensions are minimal. Therefore the responses show that all three types of outcomes are almost equally important.

Table 4.11: Descriptive statistics for Outsourcing Success.

Dimension	Mean	Std. Deviation
Tactical	4.58	1.115
Strategic	4.42	.862
Behavioural	4.22	1.633
Valid N (listwise)		207

Note: A 7-point Likert scale was used. Scale: 1 = strongly disagree; 7 = strongly agree.

The next section is allocated for checking common methods of variance in the survey.

4.5 COMMON METHOD VARIANCE

This study used self-administered questionnaire for data collection. When respondents are self-reporting through a unique scale, there is a probability for indicating different ratings, rather than true ratings (Podsakoff *et al*., 2003). This generates inaccurate measures and thereby, establishes inaccurate relationships, which are known as 'common method variance'. Wang and Pho (2009) explained the common method variance as a type of spurious internal consistency, which occurs when the apparent correlation among indicators, or even constructs, results from their common source (p.674). But Conway and Lance (2010) claimed that, there are some

> *...misconceptions about method variance that can impede the progress of research: (a) that relationships between self-reported variables are necessarily and routinely upwardly biased,(b) that other-reports (or other methods) are superior to self-reports, and (c) that rating sources (e.g., self, other) constitute mere alternative measurement methods* (p.326).

However, scholars (e.g. Podsakoff *et al*., 2003; Burton-Jones and Straub 2004) recommended testing the common method variances (CMV) in a positivist research domain. The Harman single-factor test is commonly used to test the common method variance. It requires loading all the measures in a study into an exploratory factor analysis, with the assumption that the presence of CMV is indicated by the emergence of either a single factor, or a general factor, accounting for the majority of covariance among measures (Podsakoff *et al*., 2003, p. 889). Consequently the exploratory factor analysis test was performed with none-rotated, single factor option. The results of the factor analysis revealed that there are fourteen factors with Eigen values above 1.0, which together explain 71 per cent of the variance. The largest single factor explained

only 20.566 per cent of the variance, which is significantly less. Therefore, the factor analysis did not detect a single factor explaining a majority of the covariance (please refer Appendix D).

4.6 TESTS FOR MULTIVARIATE ASSUMPTIONS

4.6.1 Normality

Normality magnifies the shape of the sample data distribution to the population. Subsequent estimates of sample means will have representative variations with the population mean (Bryman and Bell, 2007). Normality is used to describe a curve that is symmetrical and bell-shaped. The highest score frequency is depicted in the middle, with lower frequencies towards the extremes (Gravetter and Wallnau, 2000). There are many statistical methods that could be applied for assessing normality, such as Q-Q plots, box plots, and histograms. Histograms basically check the skewness and kurtosis of data distribution. A skewness value of above 3, and kurtosis value of above 10, are indicative of those that depart from normality (Kline, 1998). However, for a perfectly normal distribution, the kurtosis and skewness should be zero (Pallant, 2005). Meanwhile, certain scholars (e.g. George and Mallery, 2003; Morgan, *et al.*, 2001) stated that the threshold value of $\pm$ 1.0 is a guideline to determine normality. The kurtosis is the measurement of the peak of the curve, which does not effectively affect analyses. Negative kurtosis represents a flatter distribution, while a positive value denotes a peaked distribution.

The result in Table 4.12 shows that all the skewness statistics, except PTQ5 and PTQ6 are less than one (skewness value is ≤ 1). However, PTQ5 and PQT6 reported a value of

skewness below 2 (skewness<2). Therefore all items have maintained an appropriate level of skewness. The kurtosis statistics which range from -1.022 to 1.811 (-2 > 2) show that the data distribution is normal.

Table 4.12: Skewness and Kurtosis Statistics

	Minimum	Maximum	Skewness	Kurtosis
Vendor management	1	7	-.735	-.278
VM_2	2	7	-.851	.139
VM_3	1	7	-.723	-.193
VM_4	2	7	-.403	-.948
VM_5	1	7	-.434	-1.063
Vendor's Performance	3	7	-.357	-.172
PTQ2	1	7	-.795	1.758
PTQ5	1	7	-1.290	1.284
PTQ6	1	7	-1.008	1.811
HQ1	3	7	-.198	-.323
HQ2	2	7	.035	-.482
HQ3	1	7	.046	.934
HQ4	1	7	.358	-.011
HQ5	2	7	.278	-.481
SQ1	2	7	-.872	.201
SQ2	1	7	-.378	-.706
SQ3	1	7	-.560	-.538
SQ4	1	7	-.439	-.753
SQ5	1	7	-.277	-.824
SQ6	1	7	-.299	-.853
OQ1	2	7	.303	-.220
OQ2	1	6	.186	-.457
OQ3	1	7	-.078	-.012
OQ4	1	7	.205	-.597
OQ5	1	7	.243	-.100

Table 4.12: Skewness and Kurtosis Statistics Continued

Partnership Quality	1	7	-.588	-.496
COP2	2	7	-.539	-.777
COP3	2	7	-.506	-.795
COP4	1	7	-.575	-.809
COP5	1	7	-.712	-.300
COP6	1	7	-.565	-.690
COP7	2	7	-.551	-.644
COP8	1	7	-.491	-.617
PQT1	1	7	.219	-.319
PQT2	2	7	.011	-.221
PQT3	1	7	.309	-.325
PQT4	2	7	-.037	-.444
PQC1	2	7	.159	-.610
PQC2	2	7	.192	-.496
PQC3	2	7	.326	-.480
PQC4	2	7	.225	-.247
Partners' Compatibility	2	5	-.337	-.508
CPC2	1	5	-.341	-.176
CPC3	1	5	-.371	-.231
CPP1	1	5	-.689	.071
CPP2	1	5	-.355	-.142
CPP3	2	5	-.341	-.627
CPP4	1	5	-.402	-.082
Outsourcing Success	1	7	.101	-.493
OST2	1	7	.099	-.403
OST3	1	7	.093	-.968
OST4	1	7	-.071	-.713
OSS1	1	7	.047	.001
OSS2	1	7	.051	-.237
OSS3	1	7	.496	-.032
OSS4	1	7	.255	-.522
OSS5	1	7	.061	.108
OSB1	1	7	-.445	-.702
OSB2	1	7	-.416	-.815
OSB3	1	7	-.248	-1.022
Valid N (listwise)				207

4.6.2 Linearity

Linearity is essential for all the multivariate techniques which measure correlational measures of association. It investigates the presence of a straight-line relationship between two variables (independent and dependent variables) (Malhotra, 2004; Hair *et al*., 2006). This implies that relationships should be explained in the form of linear relationship, as depicted in following formula.

$$y = a + \beta_1 x_1 + \cdots + \beta_n x_n + \acute{\varepsilon}$$

A simple regression helps examination of linearity. The Scatterplots, normal probability plots, and regression-standardized residuals (Pallant, 2005) will determine the linearity between the variables. Accordingly, simple regression is performed for each pair of independent and dependent relationships. The fulfilment of this assumption provides cues of the existence of homoscedasticity as well.

4.6.3 Homoscedasticity

Homoscedasticity is another important assumption in multivariate analysis. It is commonly recognised as homogeneity, or uniformity of variance, with regards to the "dependent variable exhibiting similar amounts of variance across the range of predictor variables" (Stamatis, 2001, p. 140). It is evaluated for pairs of variables. There are two approaches for evaluating homoscedasticity, which are the graphical and statistical methods. Basically, Scatterplot and Boxplot facilitate the graphical representation of homoscedasticity, while Levenes test could be performed for the numerical analysis. However, the Levenes test is insensitive to departures from normality, making Bartlett's test more appropriate in those situations.

In this study, the normal probability plot and scatterplot were used to test the linearity and homoscedasticity of data. Figure 4.2 provides the evidence on linearity and homoscedasticity of the relationship between the degree of outsourcing (DOO), and outsourcing success (OS).

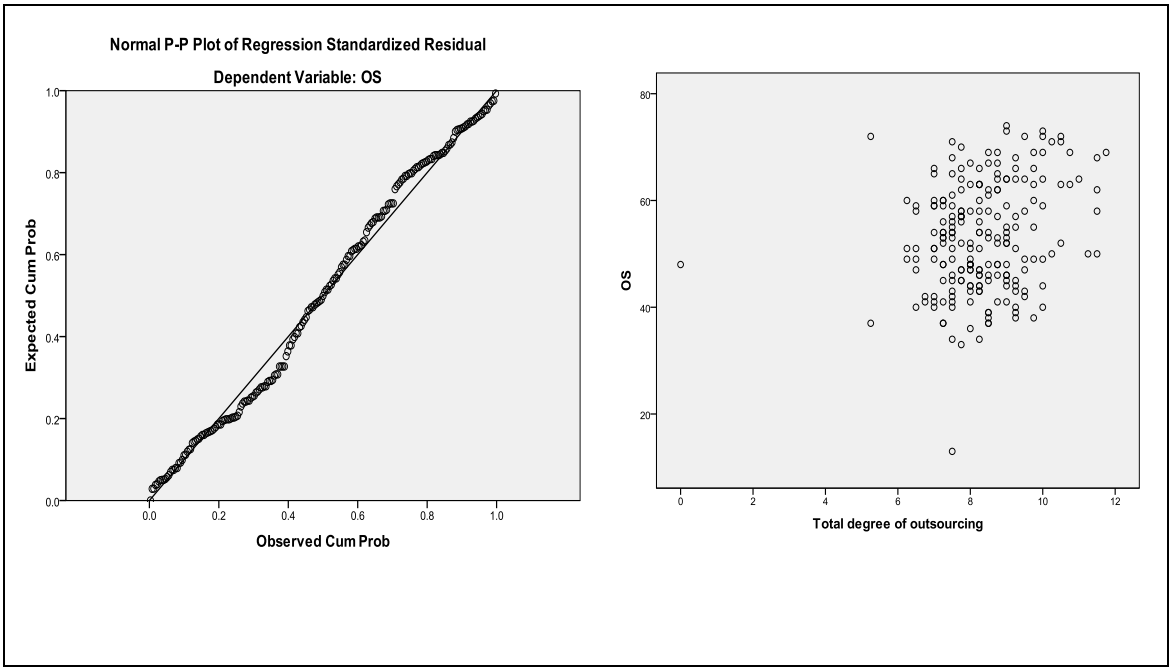


Figure 4.2: Linearity and Homoscedasticity in the Relationship Degree of Outsourcing (DOO) and Outsourcing Success (OS) Variables

Figures 4.3 and 4.4 illustrate the results of linearity and homoscedasticity between vendor management capability (VM) and outsourcing success as well as between vendors' service performance (VSP) and outsourcing success (OS). Consequently, the main variables of this study satisfy linearity and homoscedasticity assumptions for multivariate analysis.

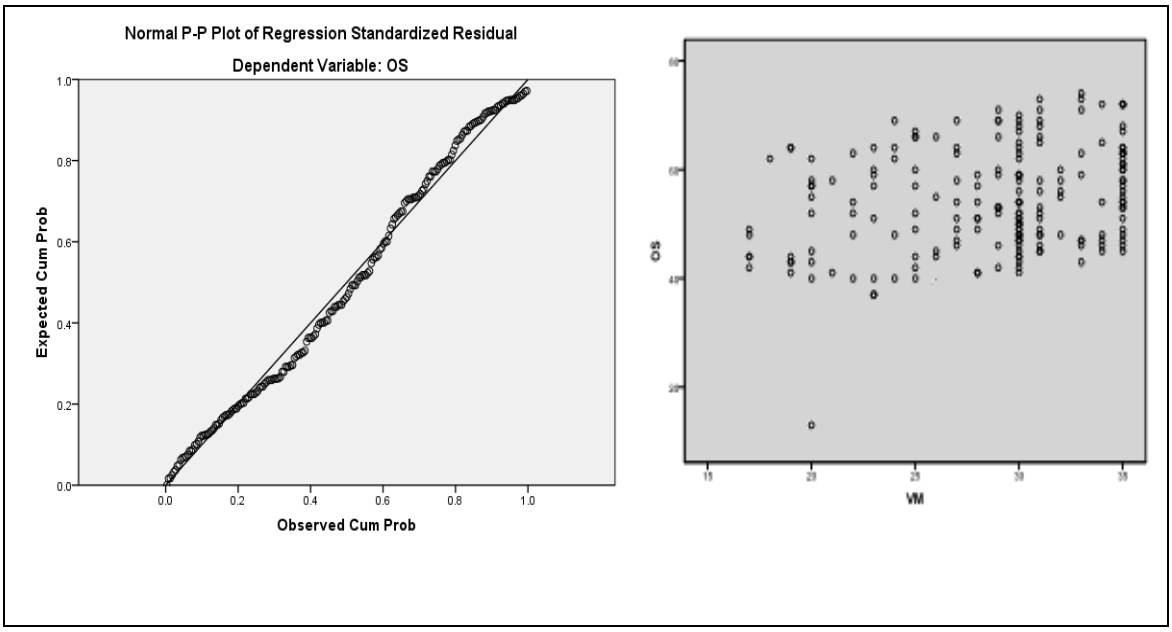


Figure 4.3: Linearity and Homoscedasticity in the Relationship between Vendor Management Capability (VM) and Outsourcing Success Variables (OS)

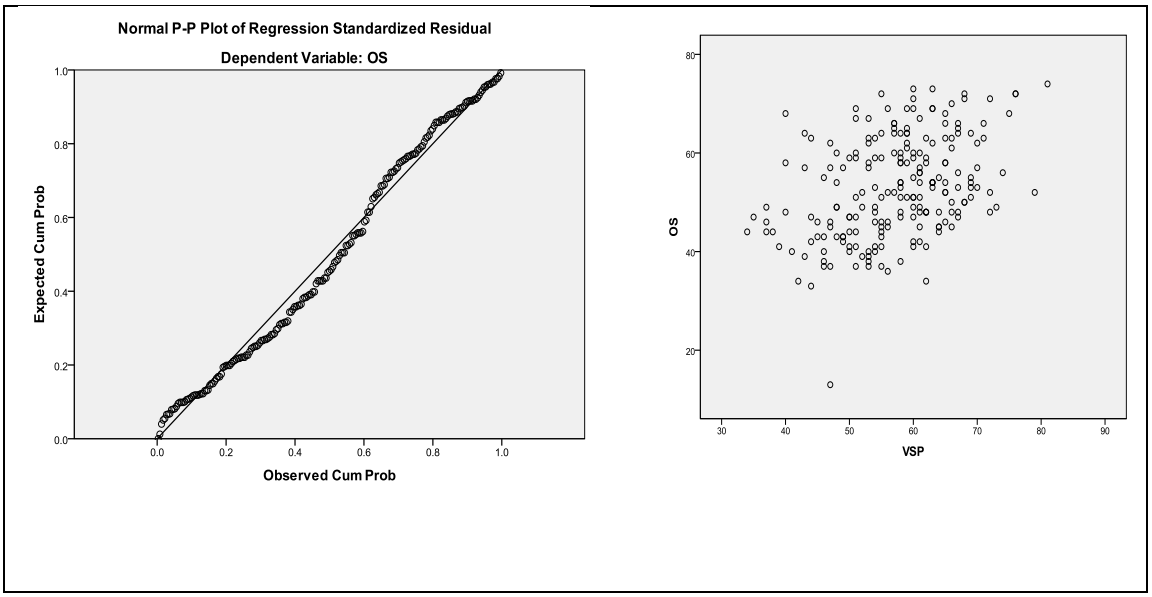


Figure 4.4: Linearity and Homoscedasticity in the Relationship between Vendors' Service Performance (VSP) and Outsourcing Success Variables (OS)

4.6.4 Multicollinearity

Multicollinearity is recognized as a problem of model fitting and the interpretation of relationships. It refers to the high intercorrelations among the independent variables, making it difficult to ascertain and separate the influence of a single independent variable on a dependent variable. Thus, the presence of multicollinearity can cause several problems such as inaccurate results of regression coefficient estimation (Tabachnick and Fidell, 2007). Specifically, partial regression coefficient may not be a precise estimate, as the magnitude (i.e. $\pm$) of beta coefficient (β) may change. Further, the stepwise regression may include/remove wrong independent variable(s) in order to increase the predictive power (i.e. R^2 value). Therefore, ensuring that no multicollinearity problems exist is imperative for conducting a successful multivariate analysis. Basically, the correlation matrix of independent variable is useful to determine inter-correlations (should be < 0.9). Besides, multicollinearity problems should be taken into consideration if the tolerance value is less than 0.10 and VIF more than 10 (Belsley *et al.*, 1980).

Table 4.13: Collinearity Statistics for VSP, PQ, CP and OS

Dependent Variable	Dimensions/ Variable	Collinearity Statistics	
		Tolerance	VIF
VSP	PTQ	.900	1.111
	HQ	.525	1.906
	SQ	.989	1.011
	OQ	.509	1.963
PQ	COP	.946	1.057
	PQT	.794	1.260
	PQC	.760	1.315
CP	CPC	.174	5.741
	CPP	.174	5.741
OS	OST	.379	2.639
	OSS	.386	2.592
	OSB	.967	1.034

Tolerance is a value that measures the degree of the independent variable's variability not explained by other independent variable in the model. It is determined by using the formula 1-R^2 for each variable. The Variance Inflation Factor (VIF) is the reciprocal of the Tolerance (1 / ($Tolerance\ value$). Table 4.13 illustrates the Collinearity statistics for constructs in the study, and only construct CP (i.e. partners compatibility) reports Tolerance rates closer to 0.1, where the dimension of the VIFs are moderately high. Therefore, the correlation matrix between variables are also performed, and shown in Table 4.14.

As seen in Table 4.14, there is a (p=0.909) significant correlation between CPC and CPP, which can be detected as a multicollinearity issue. This will be further investigated in the measurement model.

Based on the results of multivariate assumptions, it can be concluded that all variables are ensured of normality, linearity and homoscedasticity. Only one variable was detected with a multicollinearity issue (i.e. CP), which prompts further investigation in scale purification and measurement validation. Finally, the observed data is confirmed as suitable for multivariate analysis.

Table 4.14: Pearson Correlation Coefficients

		DOO	VM	PTQ	HQ	SQ	OQ	COP	PQT	PQC	CPC	CPP	OST	OSS	OSB
DOO	Pearson Correlation	1													
	Sig. (2-tailed)														
VM	Pearson Correlation	.036	1												
	Sig. (2-tailed)	.604													
PTQ	Pearson Correlation	.247**	.060	1											
	Sig. (2-tailed)	.000	.387												
HQ	Pearson Correlation	.331**	.031	.262**	1										
	Sig. (2-tailed)	.000	.658	.000											
SQ	Pearson Correlation	-.044	.458**	.049	-.029	1									
	Sig. (2-tailed)	.532	.000	.484	.677										
OQ	Pearson Correlation	.315**	.008	.299**	.687**	-.071	1								
	Sig. (2-tailed)	.000	.911	.000	.000	.307									
COP	Pearson Correlation	.064	.796**	.019	.077	.418**	.011	1							
	Sig. (2-tailed)	.361	.000	.787	.267	.000	.874								
PQT	Pearson Correlation	.371**	.028	.243**	.405**	-.021	.592**	-.007	1						
	Sig. (2-tailed)	.000	.691	.000	.000	.768	.000	.915							
PQC	Pearson Correlation	.339**	.228**	.165*	.251**	.034	.249**	.205**	.443**	1					
	Sig. (2-tailed)	.000	.001	.018	.000	.626	.000	.003	.000						
CPC	Pearson Correlation	-.045	-.125	.018	.106	-.084	.009	-.068	-.003	-.101	1				
	Sig. (2-tailed)	.524	.072	.793	.127	.231	.901	.330	.963	.150					
CPP	Pearson Correlation	-.059	-.131	.006	.123	-.046	.028	-.069	.001	-.099	**.909****	1			
	Sig. (2-tailed)	.400	.060	.932	.077	.511	.687	.326	.984	.154	.000				
OST	Pearson Correlation	.238**	.072	.061	.210**	.078	.330**	.026	.140*	-.011	-.006	-.045	1		
	Sig. (2-tailed)	.001	.306	.384	.002	.262	.000	.708	.044	.877	.926	.522			
OSS	Pearson Correlation	.261**	.017	.015	.209**	.043	.302**	.003	.162*	.051	-.041	-.064	.783**	1	
	Sig. (2-tailed)	.000	.809	.833	.003	.539	.000	.965	.020	.466	.560	.360	.000		
OSB	Pearson Correlation	.051	.295**	.055	.070	.496**	.070	.329**	.034	-.101	-.037	-.032	.177*	.118	1
	Sig. (2-tailed)	.468	.000	.428	.313	.000	.317	.000	.622	.149	.600	.646	.011	.092	

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

4.7 MEASURE REFINEMENT AND VALIDATION

The scale was purified earlier following the pilot test (n=30) prior to final data collection. Cronbach's alpha and item-total correlations were used to determine the appropriateness of items to each dimension/variable. However, there are twenty hypotheses which examine the casual relationships of this study. Before proceeding to the inferential statistics, a scale purification process should be performed for the purpose of refining reliable and valid items to the structural model from the measurement model (Lu *et al*., 2007). As stated in Chapter 3, the assessment abides tests for unidimensionality, reliability and validity of the measure. The process determines the measurement model.

4.7.1 Unidimensionality

Hair *et al* (2006) identified 'Unidimensionality' as a set of indicators with only one underlying latent construct (p.773), which actually measures the homogeneity of indicators. Therefore all indicators load as only one construct, and if the correlations among indicators could be accounted for a single common factor, it is known as unidimensionality. This can be accessed through the exploratory factor analysis, followed by a confirmatory factor analysis, as depicted in Figure 4.1. However, it should be noted that AMOS and SPSS have different factor extraction approaches/methods. AMOS uses 'Maximum Likelihood Estimation (MLE)' by default, while SPSS uses the 'Principle Component' analysis method. Hair *et al*. (2006) stated that MLE is an alternative to ordinary least squares used in multiple regressions, and it improves the parameter estimates in order to minimize a specified fit function (p.708), making the results similar or better. This study applied exploratory factor analysis (EFA) to whole latent variables to determine the unidimensionality of the measure using

principle component analysis in SPSS. Unidimensionality will be further estimate the measurement model together with CFA, the result of goodness-of-fit, direction of paths, and the respective significant levels of individual variables.

EFA is conducted using principal component analysis, and Varimax rotation methods, with Kaiser normalization (Kinnear and Gray, 1997). Prior to the analysis of EFA, the appropriateness of using EFA is determined by the results of KMO and Bartlett's test of sphericity. The results are displayed in Table 4.15 for vendor management capability (VM), vendors' service performance (VSP), partnership quality (PQ), partners' compatibility (CP) and outsourcing success (OS) constructs. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is an index used to examine the appropriateness of factor analysis, with high values (between 0.5 and 1.0) indicating that factor analysis is appropriate (Malhotra, 2004).

Table 4.15: KMO and Bartlett's Test for the Constructs of VM, VSP, PQ, PC and OS.

		VM	VSP	PQ	CP	OS	For All
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.871	.806	.907	. 859	.887	.838
Bartlett's Test of Sphericity	Approx. Chi-Square	1155.74	997.67	3358.93	1250.48	1168.06	9248.24
	Df	10	190	120	21	66	1770
	Sig.	.000	.000	.000	.000	.000	.000

Bartlett's test of sphericity is a test used to examine the hypothesis stating that the variables are uncorrelated in the population. In other words, the population correlation matrix is an identity matrix; each variable correlates perfectly with itself ($r = 1$), but has no correlation with the other variables ($r = 0$) (ibid). Accordingly, the KMO values for all constructs are reported to be above 0.8, fulfilling sample adequacy. Bartlett's Test of Sphericity is significant for all constructs, and justifies that each construct correlates

perfectly with itself. The results of KMO and Bartlett's test of sphericity ($p<0.001$) allow to forward data of this study for the EFA.

Subsequently EFA is performed for each individual construct. Table 4.16 shows the EFA results for vendor management capability (VM) variable.

Table 4.16: The EFA Results of Vendor Management Capability

Items: VM	Component
	1
VM_1	.908
VM_2	.935
VM_3	.947
VM_4	.926
VM_5	.908

1. Total variance extracted by 1 factors = 85.541%
2. Extraction Method: Principal Component Analysis.

Table 4.16 shows that all factor loadings are above 0.9. It yields only one factor based on an Eigenvalue of >1. The number of factors that fall into those variables is in accordance with theoretical predictions with the total variance explained by the factor as 85.541 per cent.

Next, the EFA for vendors' service performance (VSP) is evaluated, and shown in Table 4.17. The vendors' service performance construct consists of four latent variables (i.e. PTQ, HQ, SQ and OQ). The VSP scale was borrowed from Gounaris (2005a), which was rigorously tested for unidimensionality, reliability and validity. As noted in Chapter 3, the scale is known as INDSERV.

Table 4.17: The EFA Results of VSP

Items/dimensions: (VSP)	Component			
	1	2	3	4
Potential Quality				
PTQ1	-.059	.104	**.655**	.110
PTQ2	.089	-.038	.243	**-.556**
PTQ5	.170	-.047	.063	**.620**
PTQ6	**.403**	-.131	-.051	.196
Soft Process Quality				
SQ1	.064	.205	.166	**.566**
SQ2	.081	**.742**	.029	.013
SQ3	-.096	**.715**	.228	.178
SQ4	.130	**.684**	.173	-.003
SQ5	.221	**.677**	-.271	.029
SQ6	.182	**.677**	-.248	.023
Hard Process Quality				
HQ1	-.142	-.131	.315	**.507**
HQ2	-.135	.184	**.618**	-.135
HQ3	-.334	.145	**.549**	.046
HQ4	.132	.144	**.517**	.198
HQ5	**.725**	.003	-.055	.159
Output Quality				
OQ1	**.693**	.105	.181	-.034
OQ2	**.642**	.101	-.088	.107
OQ3	**.660**	.138	.319	-.178
OQ4	**.682**	.242	.264	-.128
OQ5	**.639**	-.039	.437	.058

1. Total variance extracted by 4 factors = 48.141%
2. Extraction Method: Principal Component Analysis.
3. Rotation Method: Varimax with Kaiser Normalization

Even though the unidimensionality is not well demonstrated in VSP (except soft process quality and output quality dimensions), EFA created four factors. The number of factors generated is somehow aligned with the basic scale (i.e. INDSERV). These four factors explain only 48.141per cent of total variance, which is considerably low. The PTQ (i.e. potential quality) items are scattered among three factors and this results in poor

discriminant validity. Furthermore, SQ1, HQ1 and HQ5 have deviated from the theoretically defined location.

With respect to the factor loadings, the PTQ6 is determined to be below 0.5. The deletion of items due to statistical issues is not advisable in the beginning (Hair *et al*., 2006), as this may affect construct validity. Moreover, the main purpose of EFA is to explore the factor structure (Child, 1990). Thus VSP with all items is forwarded to reliability tests for further investigations.

Thereafter, the EFA for partnership quality (PQ) is assessed, and the results are depicted in Table 4.18.

Table 4.18: The EFA Results of PQ

Items/dimensions : PQ	Component		
	1	2	3
Cooperativeness			
COP1	**.919**	.155	.084
COP2	**.931**	.171	.057
COP3	**.911**	.190	.065
COP4	**.924**	.186	.099
COP5	**.917**	.186	.075
COP6	**.855**	.302	.026
COP7	**.870**	.218	.065
COP8	**.774**	.360	-.085
Trust			
PQT1	.283	**.907**	.193
PQT2	.277	**.913**	.233
PQT3	.297	**.898**	.239
PQT4	.293	**.896**	.212
Commitment			
PQC1	.135	.180	**.870**
PQC2	.004	.158	**.908**
PQC3	-.028	.119	**.906**
PQC4	.087	.218	**.824**

1. Total variance extracted by 4 factors = 86.308%
2. Extraction Method: Principal Component Analysis.
3. Rotation Method: Varimax with Kaiser Normalization

Table 4.18 shows EFA result of partnership quality (PQ) construct. The eigenvalues >1 generated three factors and all items are reported to be above 0.7 factor loadings. Therefore, the unidimensionality of the construct is fully assured. Total variance explained by the three factors is 86.308 per cent which further indicates that the observed data successfully distinguished the three factors of partnership quality.

Next, the EFA for partners' compatibility (CP) is assessed. Table 4.19 shows the results of the assessment. Theoretically, CP consists of two latent variables (i.e. CPC and CPP), but EFA analysis for CP demonstrates that CP itself is a latent variable, as all items fall under one factor with high factor loadings. Therefore, CP, as a latent variable has a very high unidimensionality, which explains approximately 76 per cent of variance.

Table 4.19: The EFA Results of CP

Items: Partners' Compatibility	Component
	1
CPC1	.870
CPC2	.883
CPC3	.808
CPP1	.906
CPP2	.843
CPP3	.870
CPP4	.917

1. Total variance extracted by one factor = 75.979%
2. Extraction Method: Principal Component Analysis.

Table 4.20 summarizes the EFA for outsourcing success (OS) construct. It produced two factors (eigenvalue>1). Theoretically there are three factors for OS. However, the observed data clearly distinguish them into two separate factors. Factor /component 1 represents the '*operational'* measures of outsourcing success, while factor/component 2 indicates '*behavioural*' measures of outsourcing success. All factor loadings are

reported to be above 0.5, which indicates satisfactory convergence as well. However, these two factors measure 60.838 per cent of the total variance, which is appropriate.

Table 4.20: The EFA Results of Outsourcing Success

Items/dimensions: OS	Component	
	1	2
Tactical measures		
OST1	**.749**	-.012
OST2	**.740**	.195
OST3	**.797**	.109
OST4	**.802**	.142
Strategic measures		
OSS1	**.774**	.191
OSS2	**.732**	.054
OSS3	**.665**	-.160
OSS4	**.704**	.069
OSS5	**.567**	-.033
Behavioural measures		
OSB1	.019	**.872**
OSB2	.131	**.901**
OSB3	.040	**.889**

1. Total variance extracted by 3 factors = 60.838 %
2. Extraction Method: Principal Component Analysis.
3. Rotation Method: Varimax with Kaiser Normalization.

In conclusion, the results of EFA confirm that VM and PQ successfully satisfied the conditions of unidimensionality. EFA proposed changes in the factor structure in CP and OS. Thus, in comparison to theory, CP and OS constructs moderately satisfy unidimensionality. Even though VSP is adopted from a previously developed scale, it reported poor EFA results. Furthermore, one item was detected (i.e. PTQ6) at below threshold level of factor loadings, while SQ1 and HQ1 also deviated from the original location. However, none of them were deleted and forwarded to reliability analysis for further investigation of their qualification/disqualification for them to be included as items in the measurement model.

4.7.2 Reliability

Hair *et al* (2006) defined reliability as a measure of, the degree to which a set of indicators of a latent construct is internally consistent in their measure (p.710). Basically, Cronbach's alpha is used to determine the internal consistency (i.e. reliability) of the measures. As a rule of thumb, the scale is considered reliable when Cronbach's alpha is greater than 0.7. An alpha value of more than 0.7 would indicate that the items are homogeneous, and measuring the same construct. However, Hair *et al*. (1998) recommended that Cronbach's alpha values from 0.6 to 0.7 were deemed to be the lower limit of acceptability.

Besides, item-total correlation should be above 0.25 (Nunnally, 1978) for it to qualify as a reliable item. As noted in Chapter 3, a pilot study was carried out to test the reliability of each construct of the study, and 2 items were removed (i.e. PTQ 3 and PTQ4) from the total item list, where item-total correlations were below threshold. However, the measurement model is required to perform Cronbach's alpha and composite reliability for further scale purification.

Table 4.21: Cronbach's Alpha Reliability

Variables/Items	Item-Total Correlation	Cronbach's α if deleted	Cronbach's Alpha
Vendor management capability			0.946
VM_1	.845	.936	
VM_2	.890	.934	
VM_3	.909	.933	
VM_4	.887	.928	
VM_5	.861	.934	
Vendors' potential quality			**0.250**
PTQ1	*.080*	*-.079*[a]	
PTQ2	*-.033*	*.086*	
PTQ5	*.010*	*.022*	
PTQ6	*-.003*	*.044*	
Vendors' hard process quality			**0.597**
HQ1	.118	.647	
HQ2	.417	.506	
HQ3	.331	.554	
HQ4	.378	.527	
HQ5	.529	.437	
Vendors' soft process quality			0.725
SQ1	.188	.763	
SQ2	.535	.663	
SQ3	.517	.669	
SQ4	.498	.676	
SQ5	.519	.669	
SQ6	.522	.669	
Vendors' output quality			0.795
OQ1	.593	.750	
OQ2	.420	.803	
OQ3	.598	.748	
OQ4	.660	.728	
OQ5	.610	.744	
Partnership quality: cooperativeness			0.972
COP1	.908	.967	
COP2	.924	.966	
COP3	.907	.967	
COP4	.924	.967	
COP5	.914	.967	
COP6	.877	.969	
COP7	.870	.969	
COP8	.792	.974	
Partnership quality: trust			0.982
PQT1	.945	.979	
PQT2	.970	.972	
PQT3	.957	.975	
PQT4	.944	.979	
Partnership quality: commitment			0.916
PQC1	.810	.891	
PQC2	.849	.878	
PQC3	.825	.886	
PQC4	.755	.910	

Table 4.21: Cronbach's Alpha Reliability Continued

Partners' compatibility: culture			0.854
CPC1	.736	.785	
CPC2	.721	.800	
CPC3	.718	.802	
Partners' compatibility: competitive priorities			0.919
CPP1	.848	.882	
CPP2	.714	.928	
CPP3	.819	.892	
CPP4	.876	.872	
Outsourcing success : tactical			0.840
OST1	.615	.823	
OST2	.686	.792	
OST3	.685	.792	
OST4	.708	.782	
Outsourcing success: strategic			0.781
OSS1	.547	.718	
OSS2	.588	.696	
OSS3	.521	.731	
OSS4	.600	.689	
OSS5	.485	.762	
Outsourcing success: behavioural			0.876
OSB1	.727	.854	
OSB2	.798	.790	
OSB3	.758	.827	

The construct must be established before assessing its validity. Therefore, Cronbach's alpha is calculated using SPSS version 18, and the values are shown in Table 4.21. Based on facts provided in Table 4.21, all latent variables except PTQ and HQ are reported to be above 0.7 Cronbach's alpha reliability. Therefore, those variables have high internal consistency. Among them, 'trust' (one of the dimensions of partnership quality) reports the highest reliability (0.982).

As noted previously, PTQ, HQ, SQ and OQ are the dimensions of vendors' service performance. PTQ dimension is discarded, due to very low alpha value (0.25), and item-correlations are below the cut-off point (0.25). Despite this, HQ is reported to be below threshold level (0.597), but it is very close to the 0.6 minimum level. Even though, the deletion of HQ1 could increase the reliability to 0.647, it may affect the content validity of the scale. Besides, SQ1 also reports a low item–total correlation (0.188), but the

deletion of the item does not significantly increase the reliability of the variable. At the moment, four items (whole PTQ) are deleted and hence, HQ1 and SQ1 may remain with the original scale. Other than the above highlights, 'item total correlations' of all items (except SQ1 and HQ1) range from 0.331 to 0.97. Summarizing the aforementioned facts, the reliability test discards the whole PTQ variable, and forwards all other variables to the confirmatory factor analysis (CFA).

In addition to Cronbach's alpha reliability, CFA computes composite reliability (CR) and average variance extracted (AVE). Composite reliability is also known as constructs reliability (CR), and is calculated as follows.

$$CR = \frac{(\sum_{i=1}^{n} \lambda_i)^2}{(\sum_{i=1}^{n} \lambda_i)^2 + (\sum_{i=1}^{n} \delta_i)}$$

Where, λ_1 = the squared sum of factor loadings

i = number of items

δ_1 = the error variance terms for the indicator

Composite reliability (CR) indicates the extent to which a set of indicators is being consistent in their measurement of the same construct (Lu *et al*., 2007). According to Nunnally (1978), a scale with a CR value of 0.6 and above is considered to acquire a reasonable internal consistency. VE also determines the convergent validity, which will be described in the next section. Nevertheless, Hair *et al*. (2006) stated that, even though the measurement reliability is necessary, it is not a sufficient condition for determines the validity. Therefore, the validity for each construct is assessed.

4.7.3 Validity

Construct validity concerns the extent to which a set of measured variables actually represents the theoretical latent construct those variables are designed to measure (Hair *et al*., 2006, p. 776). It comprises of four components: content , convergent, discriminat and nomological. Regarding content validity, the survey instruments considered in the present study are established, as they have been aptly developed through a thorough review of related literature. It also refined with reference to the relevant experts' opinions. As noted in Chapter 3, this is assessed in the pre-test stage before finalising the measurement instrument for the final data collection. Then, the CFA procedure will further determine the convergent and discriminant validity of the constructs in the study.

Convergent validity represents the extent to which items of the same latent variable are measuring the same construct, and it can be assessed by factor loadings. Higher factor loadings represent higher convergent validity, while all factor loadings should be statistically significant.

$$AVE = \frac{\sum_{i=1}^{n} \lambda_i^2}{n}$$

Where,

λ = standardized factor loading

i = number of items

As Hair *et al*. (2006) pointed out, a good rule of thumb is that standardized loading estimates should be 0.5 or higher, and ideally 0.7 or higher (p. 777). Moreover, the average percentage of Varience Extracted (VE) is another indicator of convergence.

The Average Variance Extracted (AVE) is an estimate, which calculates the average amount of variances in indicators that are accounted for by the underlying factor (Taylor

and Hunter, 2003). AVE achieves 0.5 or greater (Fornell and Larcker, 1981), taken as the cut off value, assures that at least 50 per cent or more of the variances in the observed variables are explained by the set of indicators.

Next, discriminant validity indicates the extent to which a construct is truly distinct from other constructs (Hair *et al*., 2006, p. 778). As a rule of thumb, all construct average variance extracted (AVE) estimates should be larger than the corresponding 'squared inter-construct correlation estimates' (SIC). This indicates that the measured variables have more in common with the construct they are associated with, than they do with the other constructs.

Nomological validity is tested by examining whether the correlations between the constructs in the measurement model are logical (Hair *et al*., 2006, p. 778), corresponding with previous literature. Although previously developed scales were applied in this study, their validity still needs to be tested. Accordingly, the measurement model of SEM performs confirmatory factor analysis (CFA), which further tests and verifies the reliability and validity of the scales.

Confirmatory factor analysis (CFA) in SEM was used to test the conceptual model that examined the antecedents of outsourcing success in services industry in this study. According to Anderson and Gerbing (1988), confirmatory measurement models should be evaluated and re-specified before the measurement and structural models are examined. Thus, each construct of the model was separately analysed. Thus, CFA was conducted with structural equation model (SEM) using AMOS 18.0 software with 207 samples to test the underlying dimensions of the five constructs, namely: vendor management capability, vendors' service performance, partnership quality, partners' compatibility and outsourcing success.

As recommended by Hair *et al*. (2006), the reported GOF (goodness of fit) indices include at least one absolute measure (χ^2/df/ p value/GFI/RMSR/ RMSEA), incremental measure (NFI/ CFI/ TLI/RNI) and parsimony (PRATIO/ PCFI/ PNFI) fit measure. These indices are briefly explained in Table 4.22. Moreover, SEM (AMOS and LISREL) compute Hoelter's critical N. Hoelter's critical N helps to judge if the sample's size is adequate, when it is Hoelter's N > 200. If Hoelter's N is under 75, it is considered unacceptably low to be accepted as a model by chi-square.

Table 4.22: Goodness of Fit Indices

Fit Measure	**Fit Measures' Indicators**
Chi-Square (χ^2)	A P value greater than 0.05 indicates an acceptable fit.
CMIN/DF (χ^2/df)	A value close to one and not exceeding 3 indicates a good fit.
RMESA	A value about 0.05 or less indicates a close fit of the model. A value of about 0.08 or less indicates a reasonable error of approximation
TLI	A value between 0 to 1.00. A value close to 1.00 indicating a very good fit.
CFI	A value between 0 and 1, a value close to 1 indicate very good fit.
NFI	A value between 0 and 1, 1 indicates a perfect fit.
GFI	A value always less than or equal to 1, and 1 indicates a perfect fit.
AGFI	A value is bounded above by 1 and is not bounded by 0 and I indicated perfect fit

4.8 MEASUREMENT MODEL

The measurement model is tested and constructed with first order and second order CFA. Accordingly, the first section discusses the first order CFA for each construct, in order to finalize the first order measurement model (Please refer Appendix E for AMOS outputs). Then, the second order CFA will further confirm the appropriateness of the measurement model for the structural model. CFA assumes the normality of data, hence simultaneously testing it in AMOS output.

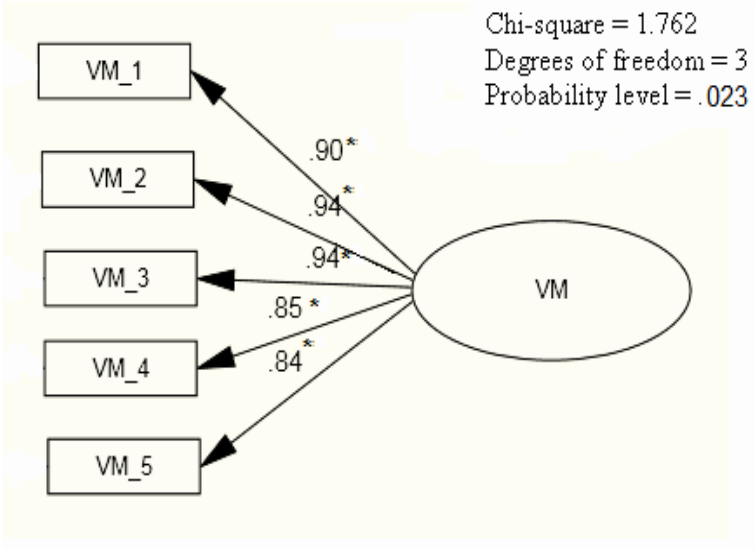
The theoretical model however consists of six constructs, but, only five are forwarded to the first order measurement model, and the degree of outsourcing (DOO) is eliminated. As previously noted, it is a derived variable (breadth x depth), and the presences of both items are vital to interpret the construct. Therefore, it is identified as an 'observed variable' in AMOS, and will appear only in the second order measurement model.

4.8.1 First Order Measurement Models.

a) Vendor management capability

Vendor management capability (VM) is a latent variable consisting of five items, and the results of first order CFA analysis for vendor management capability (VM) is shown in Figure 4.5.The model is significant at 5per cent level (p=0.023)

All factor loadings are significant, and are reported to be above 0.8. Thus, a 5-item model for vendor management capability construct is assured a convergent validity and remains as default. Next, GOF indices indicate that, the data have a good fit to the model (see Table 4.23).



*Factor loadings are significant at 0.05 level

Figure 4.5: 1st order Measurement Model for Vendor Management Capability

Table 4.23: GOF measures of Vendor Management Capability

Absolute				Incremental				
CIMIN/DF	GFI	AGFI	RMSEA	NFI	RFI	IFI	TLI	CFI
0.587	.997	.983	.000	.999	.995	1.001	1.003	1.000

The absolute indices confirm that the observed data perfectly fit the theory (CIMIN/DF<3; GFI=.997; AGFI=.983). However, RMSEA is a bit lower and indicates the close fit of the model. But, all incremental fit indices report values of above 0.9 to 1. This demonstrates that the specified model perfectly fits the baseline (null) model. In fact, Hair *et al*. (2006) do not recommended parsimony measure for assessing single model fits. Accordingly, the results confirm the factor structure, as shown in Figure 4.5. Besides, 'Hoelter's critical N' for 0.5 and 0.1 level is greater than 200, and this justifies the adequacy of the sample for the interpretation of the model.

b) Vendors' Service Performance (VSP).

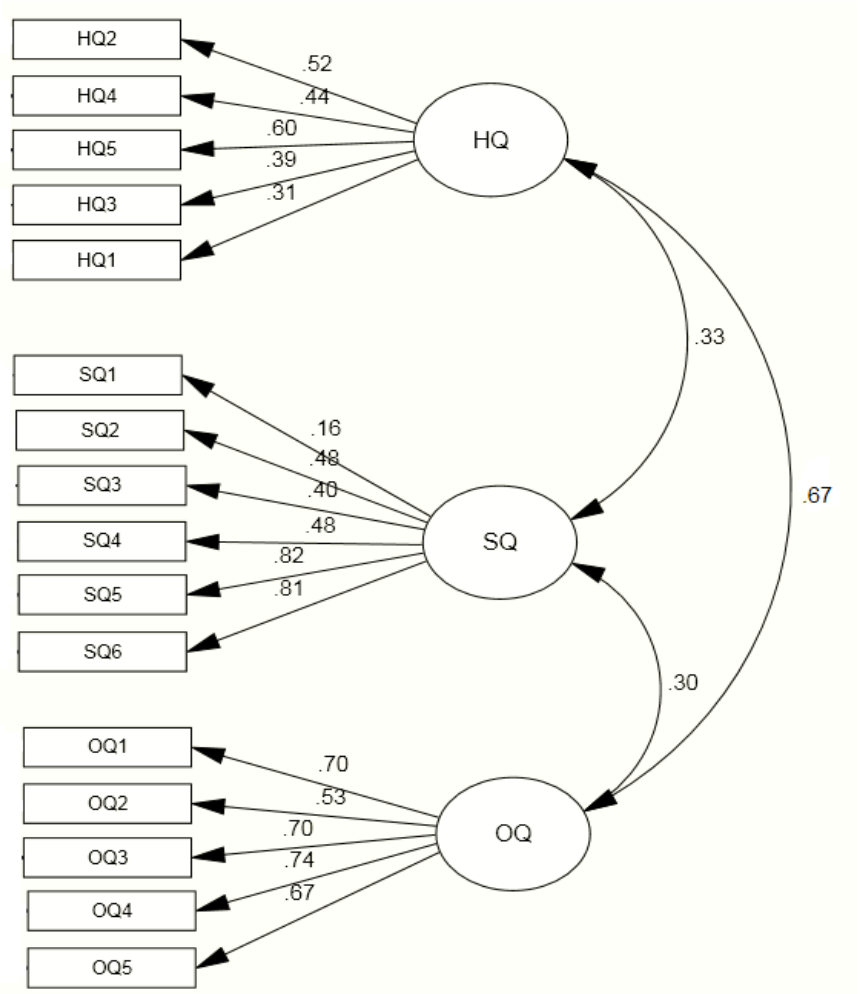


Figure 4.6: 1st order Measurement Model for Vendors' Service Performance

Previously, vendors' service performance (VSP) is refined with Cronbach's alpha value, and one dimension (i.e. PTQ) is removed from the scale. The rest of the items are forwarded into CFA. The first order CFA for VSP is shown in Figure 4.6.

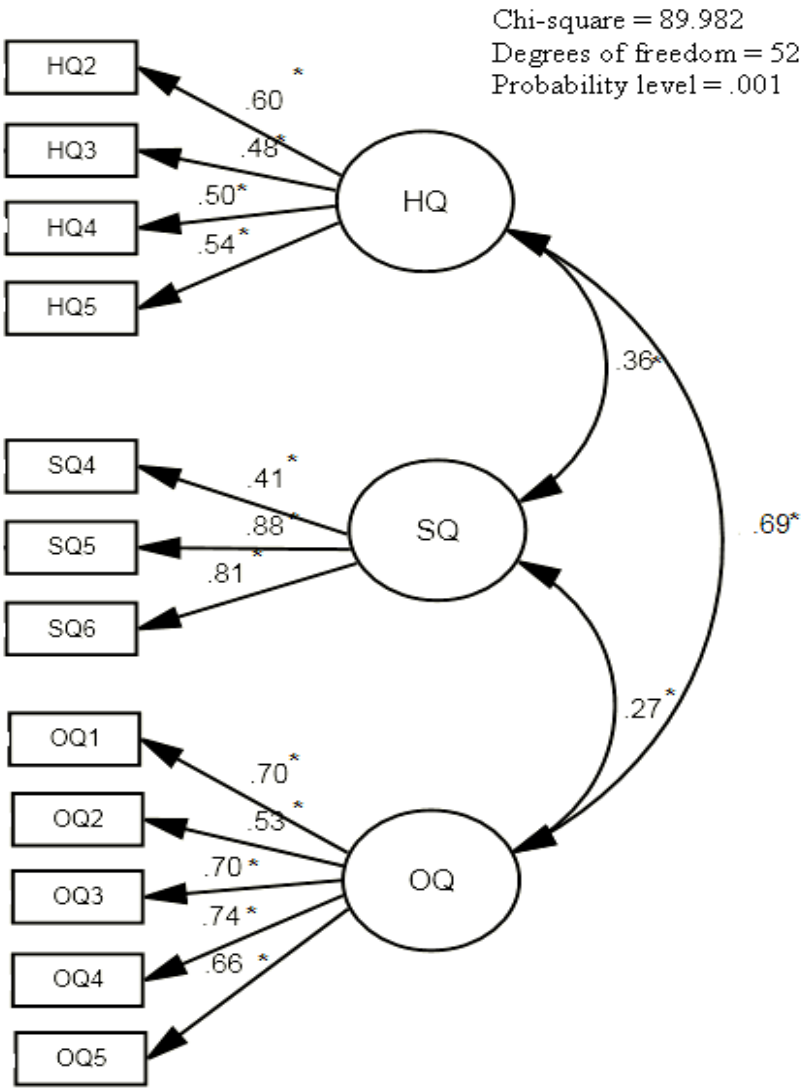
Accordingly, HQ1, 3, 4; SQ1, 2, 3, 4 report standardized regression weights below 0.5, and subsequently, stepwise deletion of items starting from the lowest standardized regression weight is conducted.

For instance, SQ1 reports the lowest value (0.16), hence it is discarded first, followed by HQ1, HQ2 and HQ3 in successive stages. Ultimately, the measurement model for

VSP is finalized, as depicted in Figure 4.7. The refined model (i.e. model in Figure 4.7) represents ‘Hoelter's critical N’ for 0.5 as 160, and 0.1 as 180, which confirms the adequacy of the sample for the model. However, the refined model (in Figure 4.7) contains items with low (i.e. HQ3 and SQ4) and marginal convergence validity (i.e. HQ4, HQ5 and OQ2).

Indeed, these items will affect AVE and discriminant validity of the latent variables/construct. But the study still wishes to maintain them, as the deletion of further items could seriously affect the content validity of the INDSERV scale. The above results further indicate a mismatch of the scale to the South Asian context.

The refined model consists of 12 items (even two of them below 0.5). All standardized regression weights and correlations are significant at 5 per cent significance level. The observed data however, demonstrates that, the purified scale (with 12 items) has satisfactory goodness of fit (GOF) (Table 4.24).



*Factor loadings are significant at 0.05 level

Figure 4.7: Purified 1st order Measurement Model for Vendors' Service Performance

Table 4.24: GOF measures of Vendors' Service Performance

Absolute				Incremental		
CIMIN/DF	GFI	AGFI	RMSEA	IFI	TLI	CFI
1.730	.940	.910	.060	.947	.931	.946

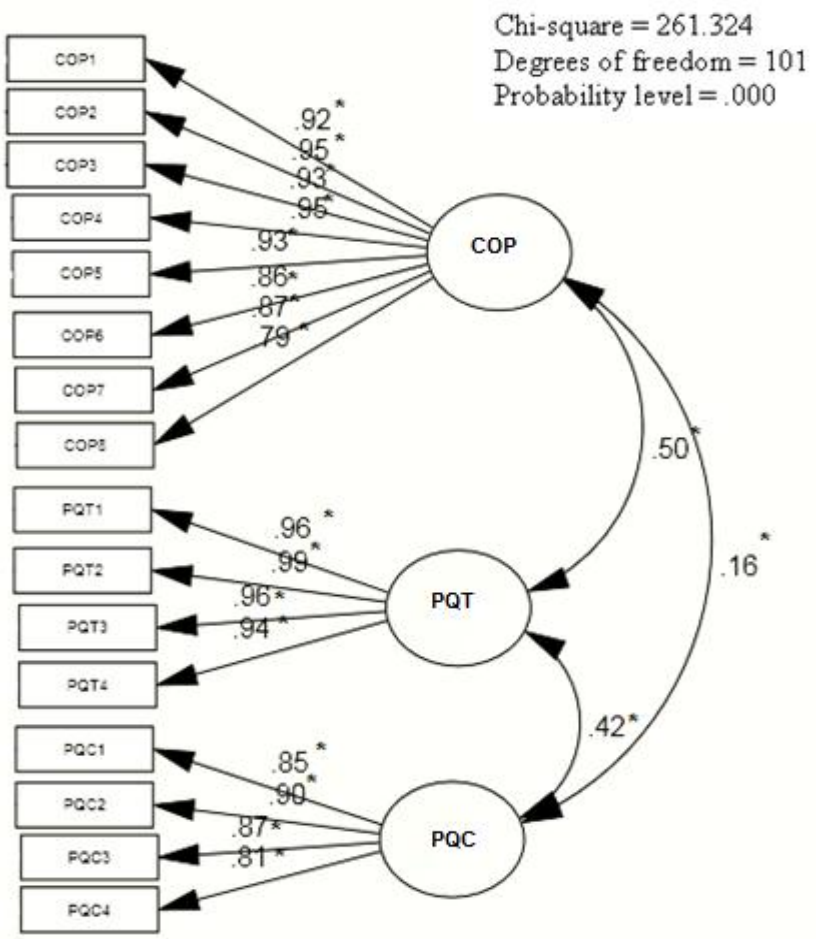
According to Table 4.24, the absolute fit indices confirm the fit between the observed data and the model. The RMSEA is within range of 0.05- 0.08, indicating that badness of fit of the model is negligible. Then, incremental indices are above 0.9, confirming that the construct fits the baseline model, assuming that all observed variables are uncorrelated (Hair *et al*. 2006; p.749).

c) Partnership Quality (PQ)

The partnership quality construct consists of three latent variables (i.e. cooperativeness, trust and commitment). The CFA for PQ is reported in Figure 4.8. All factor loadings and correlations are significant and none of items reported less convergence validity.

With regards to the GOF indices of the model, the majority have reached satisfactory levels, as demonstrated in Table 4.25. Absolute GOF indices are however; relatively lower than the incremental indices. This is may be due to the slightly higher correlation between COP and PQC, but the model is still significant, at a 5 per cent level. Furthermore, the RMSEA is below 0.08, satisfying the absolute model fit.

'Hoelter's critical N' for 0.5(116) and 0.1 (127) is above 75, maintaining the adequacy of the sample. Thus, the model in Figure 4.8 can be accepted based on the Chi square value.



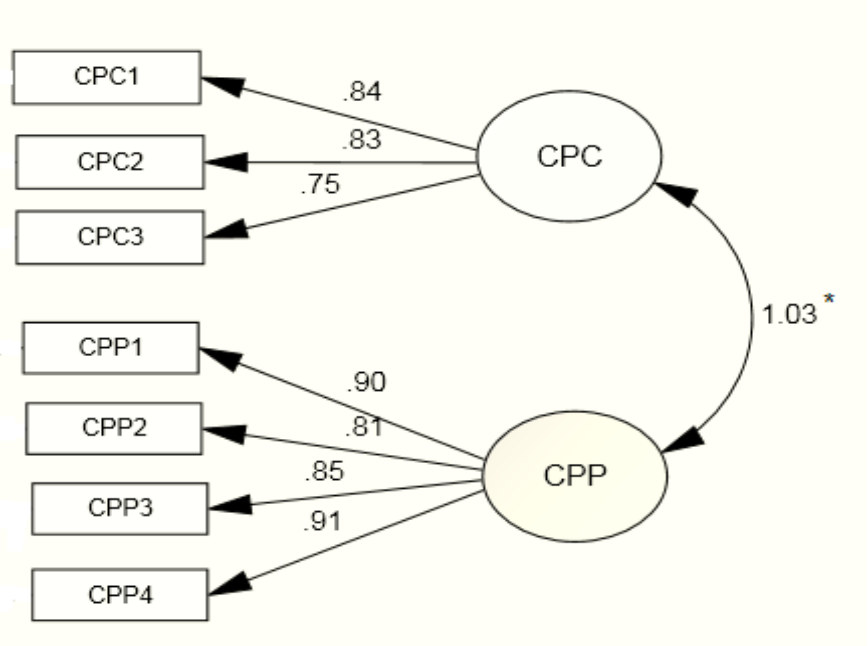
*Factor loadings are significant at 0.05 level

Figure 4.8: 1st order Measurement Model for Partnership Quality

Table 4.25: GOF measures of Partnership Quality

Absolute			Incremental				
CIMIN/DF	GFI	RMSEA	NFI	RFI	IFI	TLI	CFI
2.211	.886	.077	.952	.942	.973	.968	.973

d) Partners' Compatibility (CP)



*correlation is significant at 0.05 level

Figure 4.9: 1st order Measurement Model for Partners' Compatibility

First order CFA for partners' compatibility is illustrated in Figure 4.9. All the items showed the appropriate convergence validity (>0.8), but there is a significant correlation between CPC and CPP which is greater than 1. This implies that the two latent variables are highly (over) correlated. Referring to the exploratory factor analysis (EFA for CP) in Table 4.19, it suggests that partners' compatibility is a latent variable containing all the items of CPC and CPP.

Roh *et al*. (2008) and Carmel and Tjia (2005), however, stated that organisational culture and competitive priorities are intricately interwoven. Therefore, CPC and CPP combined as one latent variable and it is tested in CFA, and the outcome is demonstrated in Figure 4.10.

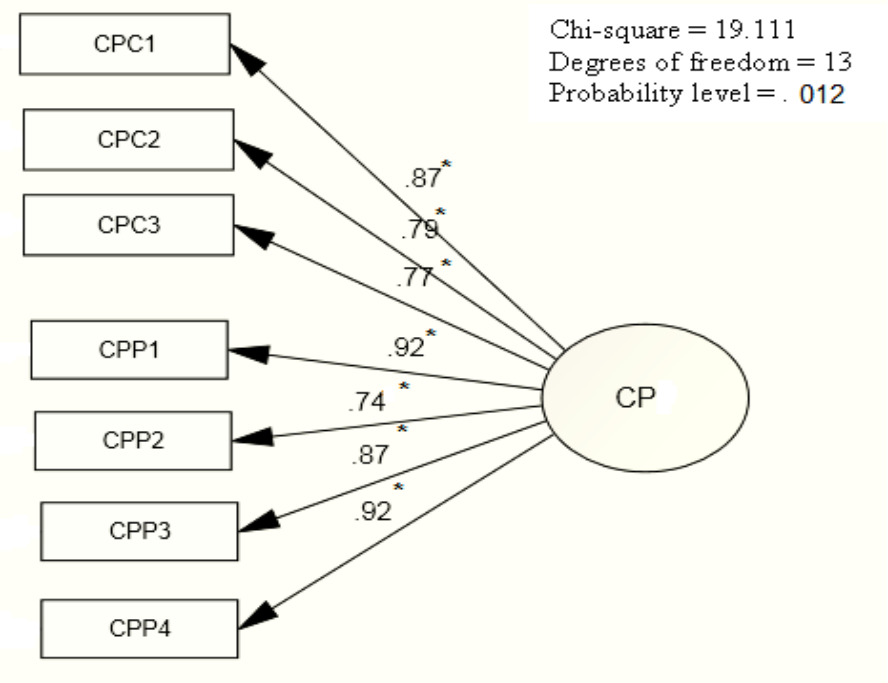


Figure 4.10: 1st order Measurement Model for Partners' Compatibility as a latent variable

Accordingly, the standardized regression weights (in Figure 4.10) of all items are significant, and most of them are better compared to the previous model (in Figure 4.9). These are outlined in Table 4.26.

Table 4.26: Cronbach's Alpha and Path comparison of CP models

Model in Figure 4.9				**Model in Figure 4.10**			
Path			Std.Reg. weight	Path			Std.Reg. weight
CPC1	<---	CPC	.843	CPC1	<---	CPP	.865
CPC2	<---	CPC	.834	CPC2	<---	CPP	.795
CPC3	<---	CPC	.751	CPC3	<---	CPP	.767
CPP1	<---	CPP	.898	CPP1	<---	CPP	.915
CPP2	<---	CPP	.808	CPP2	<---	CPP	.742
CPP3	<---	CPP	.851	CPP3	<---	CPP	.867
CPP4	<---	CPP	.907	CPP4	<---	CPP	.915
Cronbach's α	CPC		0.854	Cronbach's α	CP		0.941
	CPP		0.919				

Table 4.26 clearly shows the internal consistency (i.e. Cronbach's α) of the construct, as the latent variable increased.

Next, the Chi square of the model in Figure 4.10 is significant under 5 per cent level. Hoelter's critical N for 0.5(242) and 0.1 (249) also confirms the adequacy of the sample for accepting the model, based on Chi square significance. With respect to the model fit indices, all absolute, incremental and parsimony indices confirm the appropriateness of the model (Please refer Table 4.27).

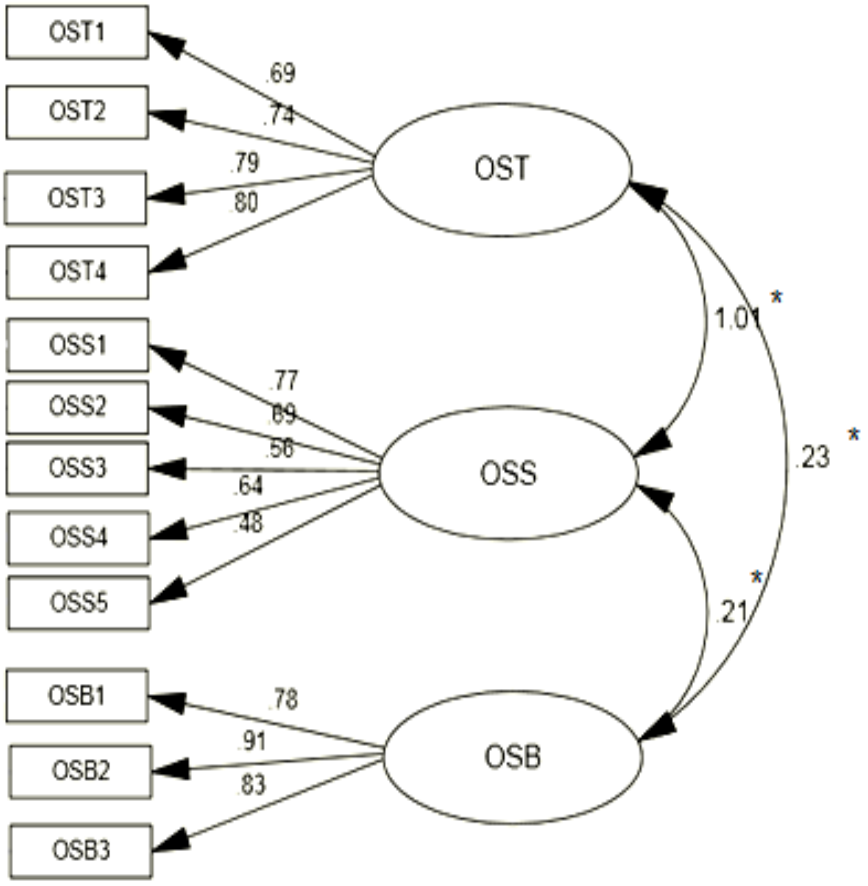
Table 4.27: GOF measures of Partners' Compatibility

Absolute				Incremental				
CIMIN/DF	GFI	RMSEA	RMR	NFI	RFI	IFI	TLI	CFI
1.470	.973	0.048	.014	.988	.980	.996	.993	.996

e) Outsourcing Success (OS)

Outsourcing success is the main focus (dependent variable) of this study. It is to be measured according to three dimensions (i.e. OST, OSS and OSB). The CFA is performed in order to confirm the theory deduced with observed data. The basic first order CFA model is illustrated in Figure 4.11.

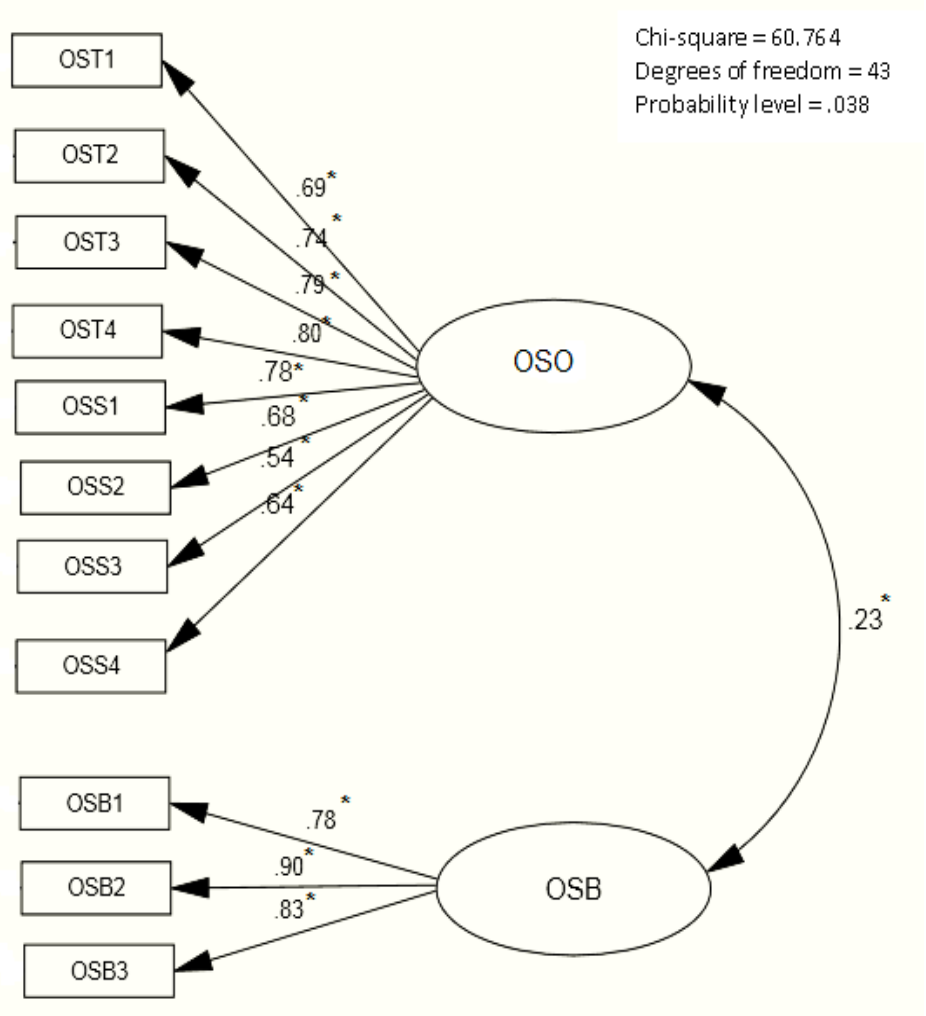
There are 12 items altogether measuring the construct. The regression weights of all items are within the satisfactory level (>0.5), except OSS5 (0.48). Therefore, OSO5 is discarded in order to maintain the appropriate convergence of the construct. OSS5 represents "innovations" as an outcome of outsourcing. This implies that, the context of the study does not perceive 'innovation' as a valid outcome of outsourcing.



*correlation is significant at 0.05 level

Figure 4.11: 1st order Measurement Model for Outsourcing Success.

Furthermore, there is a significant correlation (p=.000) between OST and OSS which exceeds the value of 1. This creates a non-positive definite covariance matrix, and which demonstrates that these two latent variables are highly correlated. Therefore, EFA is recalled to check the factor structure proposed by the observed data, which appears in Table 4.20 (the EFA results of OS). The EFA also confirms that the model have only two factors, rather than three. Thus, as previously noted, the factors are categorised under: 'operational measures' (OSO) and 'behavioural measures' (OSB).



* Significant at 0.05 level

Figure 4.12: 1st order Measurement Model for Outsourcing Success with two dimensions.

Based on the categorisation proposed by both EFA and CFA, the model for OS is drawn as a construct containing OSO and OSB dimensions. Subsequently, CFA is performed again, with the aforementioned changes, and reported in Figure 4.12. The standardized regression coefficients of items improve slightly. The Cronbach's Alpha for the two new components report values of 0.891 (OSO) and 0.876 (OSB), confirming the internal consistency. Next, the GOF indices of the model are shown in Table 4.28.

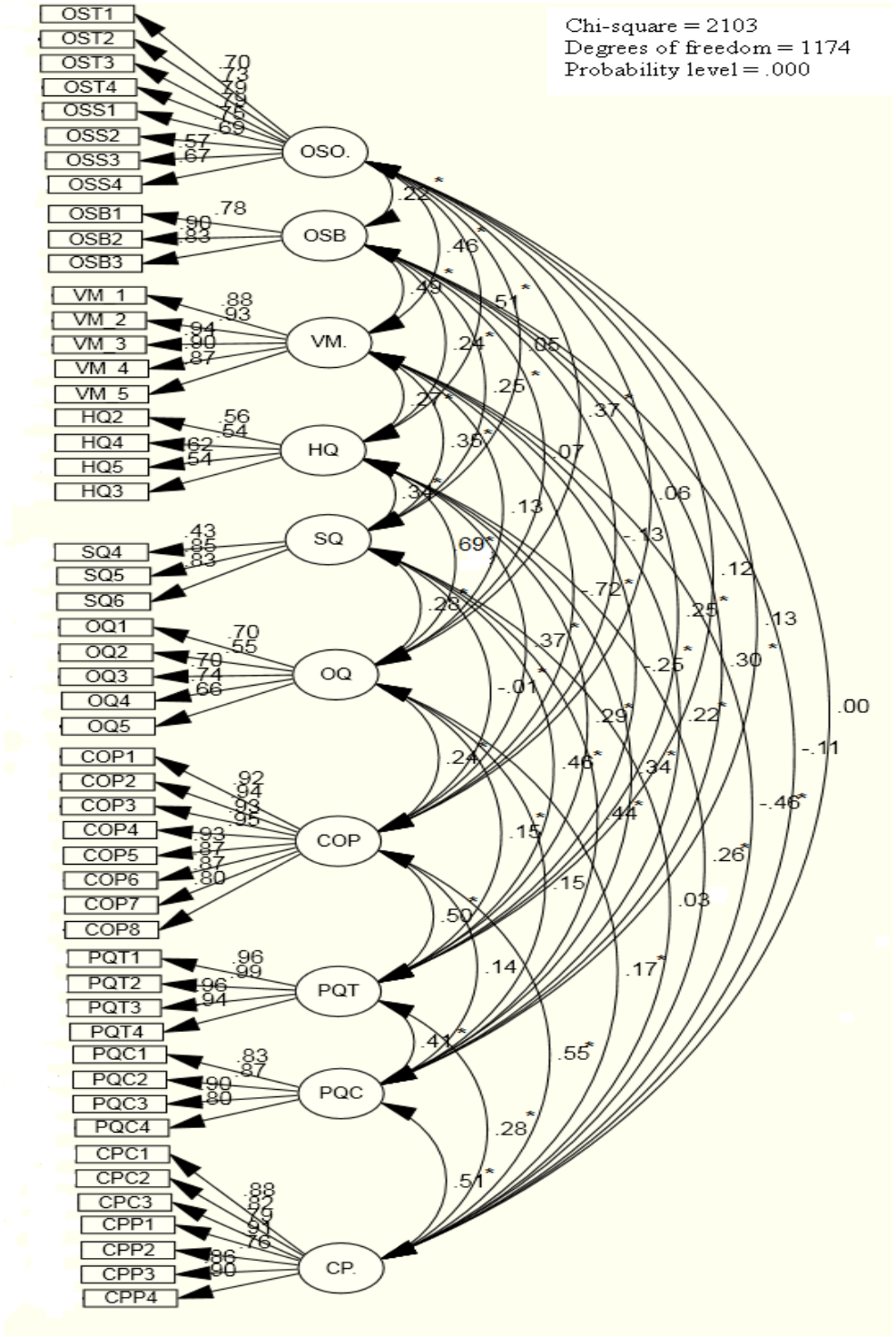
Table 4.28: GOF measures of Partners' Compatibility

Absolute				Incremental				
CIMIN/DF	GFI	AGFI	RMSEA	NFI	RFI	IFI	TLI	CFI
1.413	.947	0.919	.045	.946	.931	.984	.979	.984

All incremental indices confirm the model fit between the baseline null model and the default model. Badness of fit is reported (i.e. RMSEA) at only 4.5 per cent, along with other absolute measures, which proved the alignment between theory and observed data. Additionally, 'Hoelter's critical N' for 0.5(202) and 0.1 (229) satisfies the adequacy of the sample for accepting the model, based on Chi square significance.

The whole measurement model is developed based on the first order confirmatory factor analysis results for each construct. It contains only refined items (except there are some items in VSP below threshold level) in each construct, and only 'unobserved constructs' which are individually validated above.

Figure 4.13 shows the first order measurement model for all 'unobserved constructs' (both exogenous and endogenous variables). The standardized regression weights of the model lie within a range of 0.43 to 0.99, and all of them are significant at 5 per cent level of significance.



* Significant at 0.05 level

Figure 4.13: 1st order Measurement Model.

However, the lowest value is reported from SQ 4, and the highest is from PQT2. All positive correlations range from 0.00 to 0.69, but there are six negative correlation figures in the model, appearing in Table 4.29.

Table 4.29: Negative correlations paths and their significance

Path	Estimate	P
OSB <--> CP	-.111	.147
CP <--> VM.	-.464	***
PQT <--> VM	-.251	***
COP <--> VM	-.718	***
COP <--> SQ	-.013	.862
COP <--> OSB	-.127	.093

Accordingly, negative correlations are significant only for correlations between VM with CP, PQT, and COP. CP, PQT and COP are latent variables that are supposed to have a moderating effect. Therefore, the reasons for negative correlations are further investigated and explained in the structural model when explaining relationships.

As far as GOF indices of the model are concerned, they confirmed the appropriateness of the model. Those indices are shown in Table 4.30.

Table 4.30: GOF measures of First order Measurement Model

Absolute			Incremental			Parsimony
CIMIN/DF	RMR	RMSEA	IFI	TLI	CFI	PRATIO
1.792	.044	.062	.912	.904	.911	.921

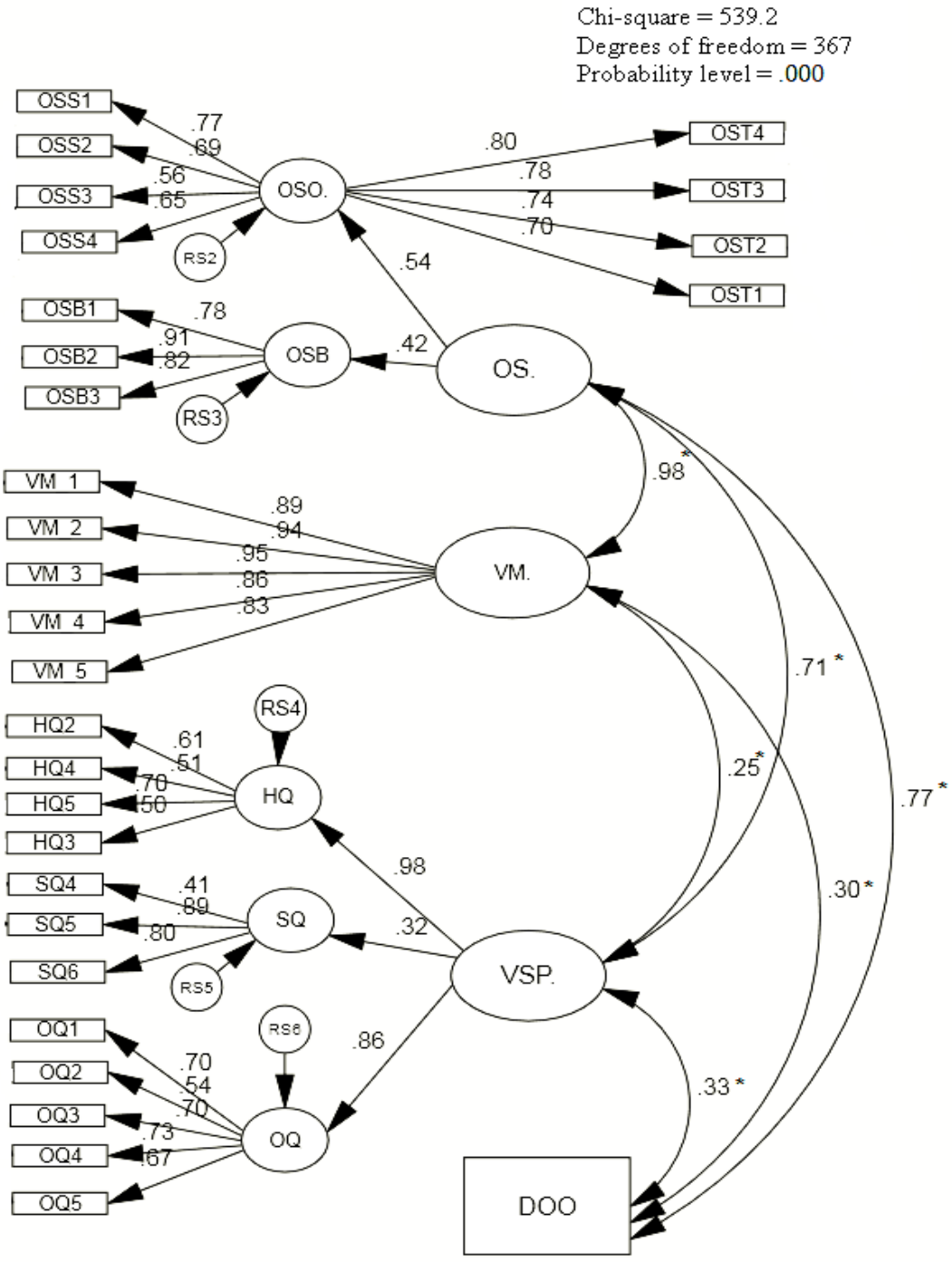
Based on figures in Table 4.30, the observed data have confirmed the theory deduced (absolute GOF), and tally the default model with the null model (incremental GOF). Parsimony Goodness-of-Fit Index (PRATIO) also shows the complexity (number of

estimated parameters) of the hypothesized model in the assessment of overall model fit. Therefore, the first order measurement model is satisfied the required GOF. is confirmed. For further confirmation of the validity of items and model fit, second order CFA is performed.

4.8.2 Second Order Measurement Models

The second order model is performed in two stages (please refer Appendix F for AMOS outputs for all second order CFA). First, only independent and dependent variables are taken into consideration. Then, the second order CFA is performed with all variables, including observed and moderating variables.

As previously noted, degree of outsourcing (DOO) is introduced as an observed variable to the second order models. Figure 4.14 depicts the second order CFA for independent and dependent variables. Accordingly, the standard regression weights of all items (except SQ4) and covariances are significant at 5 per cent significance level, and are above 0.5. This shows that the items in the model ensured the appropriate convergence. Next, VM and OS are highly correlated. When synthesising the result with the reality it is confirmed that vendor management capability of the firm (VM) has high impact on outsourcing success (OS). The model is significant and showing sufficient fit (refer Table 4.31).



* Significant at 0.05 level

Figure 4.14: 2nd order Measurement Model with Independent and dependent variables.

The CIMIN/DF is close to 1 and below 3; the RMSEA is 0.048, proving the absolute model fit. Then, all incremental and parsimony indices depicted in the table are above 0.9, assuring satisfactory model fit.

'Hoelter's critical N' of 0.5(158) and 0.1 (166) satisfy the adequacy of the sample, for accepting the model based on Chi-square significance. Likewise, the second order model without moderating variables assures the appropriate model fit and item convergence.

Table 4.31: GOF measures of 2nd order Measurement Model without moderating variables

Absolute			Incremental			Parsimony
CIMIN/DF	RMR	RMSEA	IFI	TLI	CFI	PRATIO
1.469	.078	.048	.948	.942	.947	.904

Two moderating constructs are added to the model. Figure 4.15 demonstrates the second order CFA for all variables.

Considering all regression weights of items, only SQ4 is reported to be below 0.5 level. Moreover, OS to OSB; VSP to SQ; PQ to PQC are reported to be below 0.5 level as well. As demonstrated in Figure 4.15, the correlation between VM and OS is much higher.

Some negative correlations are also detected in the model. Table 4.32 illustrates the covariance and significance of these negative correlation paths. Among them, only VM and PQ as well as CP and VM paths are significant.

Table 4.32: Covariance and their significance

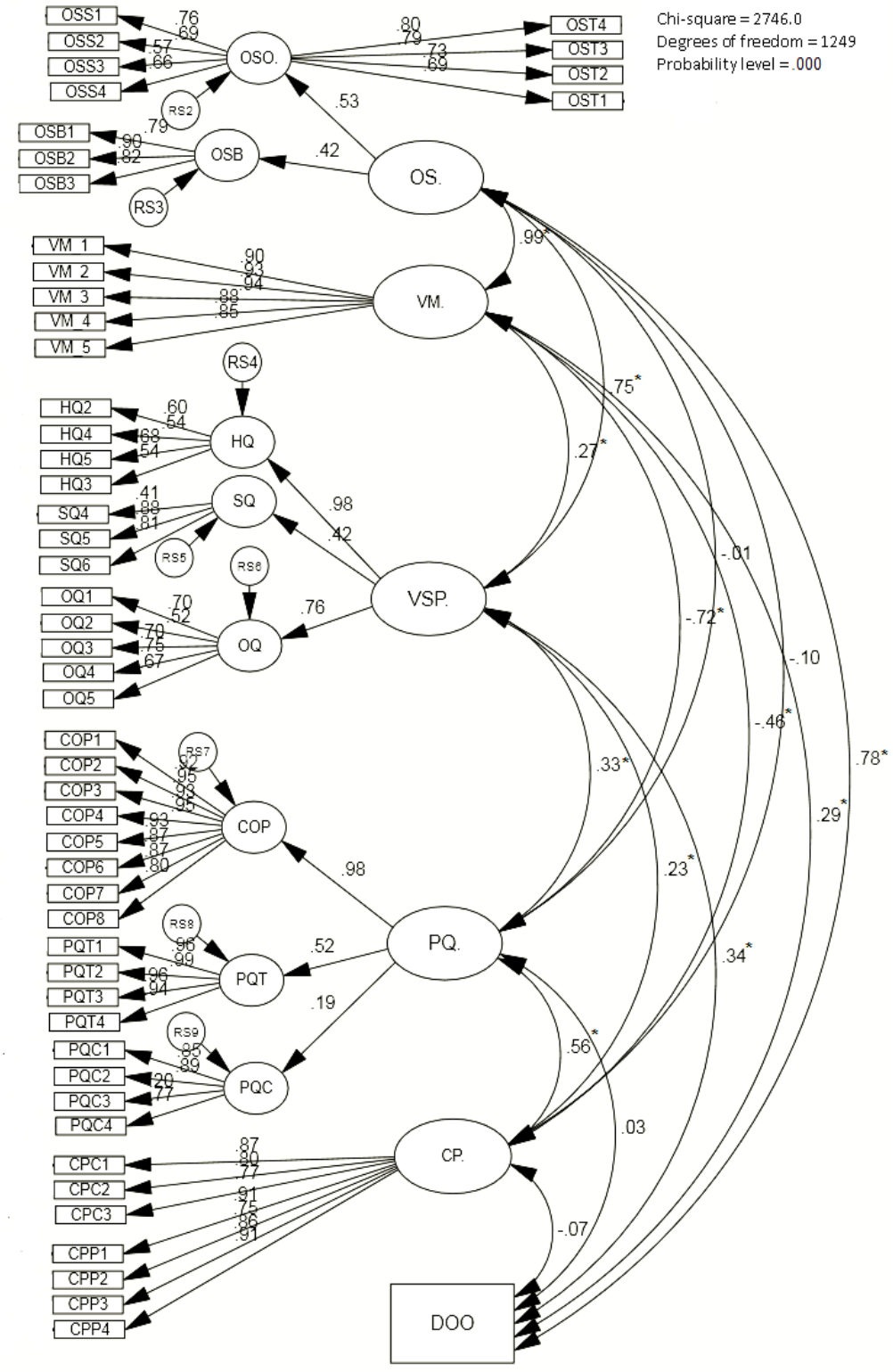
Path	Estimate	S.E.	C.R.	P
VM. <--> OS.	.365	.061	5.950	***
VM. <--> VSP.	.140	.047	2.996	.003
VM. <--> PQ.	**-.340**	**.045**	**-7.506**	*******
VM. <--> DOO	.302	.078	3.893	***
OS. <--> VSP.	.166	.040	4.152	***
OS. <--> PQ.	**-.003**	**.025**	**-.116**	**.908**
OS. <--> DOO	.344	.064	5.365	***
PQ. <--> VSP.	.094	.027	3.523	***
VSP. <--> DOO	.209	.057	3.672	***
PQ. <--> DOO	.018	.041	.442	.658
VM. <--> CP.	**-.401**	**.073**	**-5.454**	*******
CP. <--> OS.	**-.036**	**.046**	**-.782**	**.434**
CP. <--> VSP.	.119	.046	2.585	.010
CP. <--> PQ.	.267	.042	6.387	***
CP. <--> DOO	**-.069**	**.075**	**-.920**	**.357**

The covariance between CP and DOO, CP and OS as well as OS and PQ are not significant. Next, 'Hoelter's critical N' of 0.5(100) and 0.1 (103) sufficiently satisfy the adequacy of the sample for accepting the model based on Chi square significance. The GOF indices are shown in Table 4.33.

Table 4.33: GOF measures of 2nd order Measurement Model with moderating variables

Absolute			Incremental			Parsimony
CIMIN/DF	RMR	RMSEA	IFI	TLI	CFI	PRATIO
2.199	.072	.076	.900	.898	.901	.942

Absolute and incremental indices show a marginal model fit. The CIMIN/DF is close to 3 and the RMSEA is close to 0.08, which signify a poor goodness of fit. Meanwhile, only IFI and CFI achieve the satisfactory level of model fit. PRATIO however, shows a good parsimony level.



* Significant at 0.05 level

Figure 4.15: 2nd order Measurement Model with all variables.

4.8.3 Convergent Validity, Construct Reliability and Discriminant Validity.

The first order CFA is more important in verifying the convergent and discriminant validity. The next sections assess them with regards to first order CFA. As previously noted, the convergent validity of each variable/construct can be further assessed with the Average Variance Extracted (AVE) and Composite Reliability (CR). Table 4.34 shows AVE and CR for each variable in the measurement model.

Table 4.34: Standardized Regression Weights, Average Variance Extracted and Composite Reliability

Variable/ Items	Stad. Reg Weights (λ)	$(\lambda)^2$	Item error (δ)	**AVE**	**CR**
OS : Behavioural (OSB)				0.70	0.93
OSB3	0.833	0.694	0.167		
OSB2	0.897	0.805	0.103		
OSB1	0.784	0.615	0.216		
OS: Operational (OSO)				0.52	0.70
OSS4	0.667	0.445	0.333		
OSS3	0.568	0.323	0.432		
OSS2	0.694	0.482	0.306		
OSS1	0.751	0.564	0.249		
OST4	0.793	0.629	0.207		
OST3	0.790	0.624	0.210		
OST2	0.732	0.536	0.268		
OST1	0.705	0.497	0.295		
Vendor Mgt Capability (VM)				0.81	0.98
VM_5	0.870	0.757	0.130		
VM_4	0.905	0.819	0.095		
VM_3	0.936	0.876	0.064		
VM_2	0.925	0.856	0.075		
VM_1	0.884	0.781	0.116		
VSP: Hard Process Quality (HQ)				**0.32**	0.75
HQ3	0.537	0.288	0.463		
HQ5	0.620	0.384	0.380		
HQ4	0.545	0.297	0.455		
HQ2	0.564	0.318	0.436		

Table 4.34: Standardized Regression Weights, Average Variance Extracted and Composite Reliability Continued.

VSP: Soft Process Quality (SQ)				0.53	0.83
SQ6	0.830	0.689	0.170		
SQ5	0.851	0.724	0.149		
SQ4	0.432	0.187	0.568		
VSP: Output Quality (OQ)				**0.45**	0.87
OQ5	0.657	0.432	0.343		
OQ4	0.737	0.543	0.263		
OQ3	0.696	0.484	0.304		
OQ2	0.547	0.299	0.453		
OQ1	0.697	0.486	0.303		
PQ: Cooperativeness (COP)				0.81	0.98
COP5	0.933	0.870	0.067		
COP4	0.948	0.899	0.052		
COP3	0.932	0.869	0.068		
COP2	0.944	0.891	0.056		
COP1	0.923	0.852	0.077		
COP6	0.867	0.752	0.133		
COP7	0.871	0.759	0.129		
COP8	0.803	0.645	0.197		
PQ: Trust (PQT)				0.92	0.99
PQT4	0.936	0.876	0.064		
PQT3	0.956	0.914	0.044		
PQT2	0.992	0.984	0.008		
PQT1	0.963	0.927	0.037		
PQ : Commitment (PQC)				0.72	0.95
PQC4	0.795	0.632	0.205		
PQC3	0.902	0.814	0.098		
PQC2	0.874	0.764	0.126		
PQC1	0.832	0.692	0.168		
Partners' Compatibility (CP)				0.71	0.53
CPP1	0.905	0.819	0.095		
CPP2	0.760	0.578	0.240		
CPP3	0.856	0.733	0.144		
CPP4	0.902	0.814	0.098		
CPC3	0.789	0.623	0.211		
CPC2	0.816	0.666	0.184		
CPC1	0.875	0.766	0.125		

The AVE of less than 0.5 shows that, on average, more error remains in the item than variance explained by the latent factor structure imposed on the measure (Hair, 2006; Lu *et al*, 2007). Table 4.34 shows two variables (HQ=.32, OQ=.45) having lower convergence validity (AVE). Even though SQ 4 has the lowest item loading, the SQ variable has maintained an appropriate level validity, at the expense of the rest of the item loadings in the variable. Moreover, OSO and SQ have achieved marginal construct validity. This means that at least 50 per cent or more of the variances in the observed variables are explained by the set of indicators. However, with regards to HQ and OQ, they are considered acceptable, as not only the direct paths between these items and their respective latent variables indicating significant p-values, but they could also maintain a satisfactory level of composite reliability (CR).

Nunnally (1978) stated that, a scale with a CR value of 0.6 and above, being considered to have reasonable internal consistency. The results in Table 4.34 indicate good CR values for all variables, except partners' compatibility (CP = 0.53). However, some scholars (e.g. Johnson and Stevens, 2001; Sridharan *et al*., 2010) still consider a composite reliability of above 0.5 as acceptable. The CR of other variables range from 0.7 to 0.99, meaning that items have a higher level of consistency in their measurement of the same construct.

Then, the discriminant validity is assessed. As previously noted, the discriminant validity is the extent to which a construct is truly distinct from other constructs. High discriminant validity shows that a construct is unique, and captures some phenomena other measures do not (Byrne, 2006). EFA is basically a cue of discriminant validity, and as such, by comparing loadings and cross loadings between the individual indicators and the constructs, each indicator should load highly with its own construct

than others. Furthermore, it can be evaluated with the pair-wise comparison of average variance extracted (AVE) of the latent construct, and squared multiple correlation (SMC) between latent constructs (Long 1983; Hair *et al*., 2006). Consequently, this study applied a pair-wise comparison to test the discriminant validity.

Table 4.35 illustrates the squared multiple correlation (SMC) matrix used for the purpose of assessing discriminant validity. The AVE scores are written diagonally, are used to compare the squared correlation values. If the AVE scores are higher than the squared correlations values, the discriminant validity is said to be present.

Table 4.35: SMC and AVE matrix for Discriminant Validity

	VM	SQ	HQ	OQ	CP	COP	PQT	PQC	OSO	OSB
VM	**0.81**									
SQ	.121	**0.53**								
HQ	.074	.113	**0.32**							
OQ	.018	.078	**.476**	**0.45**						
CP	.215	.008	.070	.028	**0.71**					
COP	.515	.002	.133	.059	.300	**0.81**				
PQT	.063	.213	.084	.022	.077	.248	**0.92**			
PQC	.048	.196	.114	.023	.264	.020	.170	**0.72**		
OSO	.208	.003	.259	.138	.000	.004	.016	.018	**0.52**	
OSB	.243	.047	.059	.005	.012	.016	.062	.087	.047	**0.70**

According to Table 4.35, the majority of variables have high level of discriminant validity. Only HQ is weak in discriminating its own items from other constructs. This outcome is expected, as some items of HQ variable do not sufficiently maintain their convergence validity. As noted above, those items are kept in the scale, as it severely

affects content validity otherwise. Additionally, EFA analysis also reveals a discriminant issue in the construct VSP (please refer Table 4.17). According to Table 4.17, the highest scored factor loading item in the HQ dimension of VSP (i.e. HQ 5) has fallen into the OQ. This may be the reason why the SMC value (0.476) between HQ and SQ is higher than AVE (0.32). However, as previously noted, the construct VSP (PTQ, HQ, SQ and OQ) is adopted from the INDSERV scale, which was developed in the western context. This study provides evidence of contextual mismatch of borrowed scales from a different cultural context. For example, from the beginning of scale refinement, the VSP construct demonstrates issues in reliability and validity, creating a greater potentiality to explore the reliability and validity of INDSERV scale in different cultural contexts.

Based on these facts, the study finalises the measurement model, as depicted in Figure 4.13.

4.9 STRUCTURAL MODELS AND HYPOTHESES TESTING

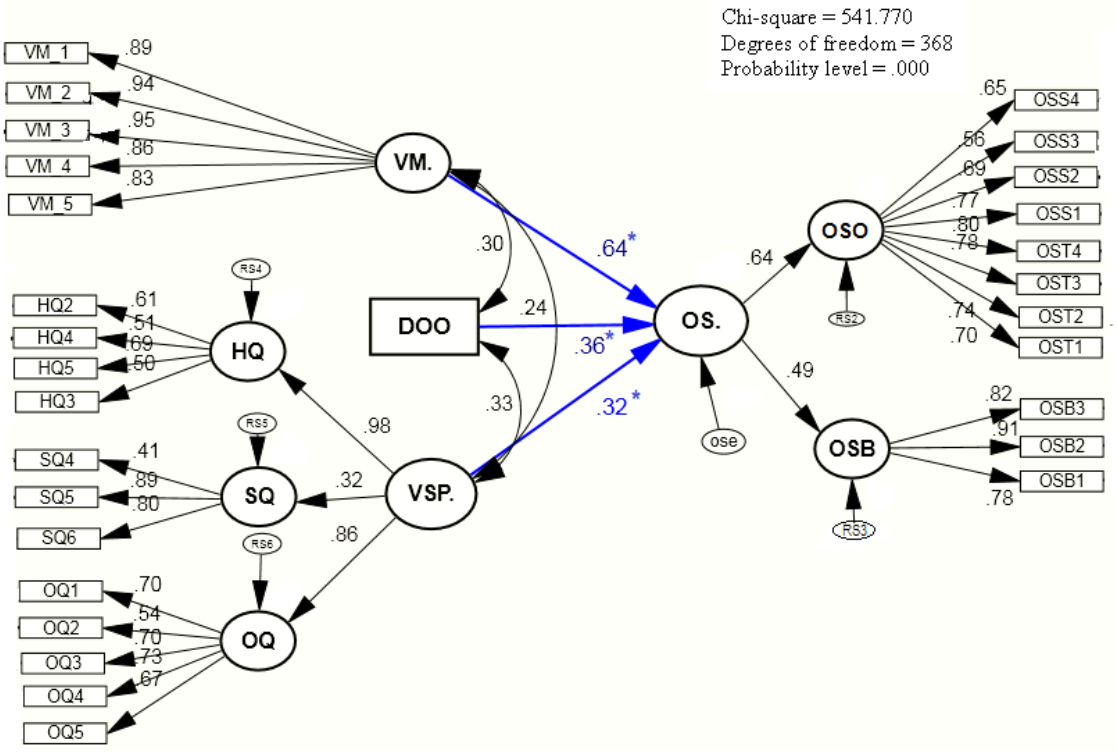
The purpose of the structural model is to draw conclusions from the sample, such as causal relationships and predictions. Tests for multivariate assumptions are conducted, and the data ensure their suitability for multivariate analysis. The structural model presents the relationship between exogenous and endogenous variables. It offers a direct test of the theory of interest (Cheng, 2001), as the structural model is used to capture the linear regression effects of the exogenous constructs on the endogenous constructs, and the regression effects of the endogenous constructs upon each another (Hair *et al*., 1998).

Basically, the theoretical model proposed to test twenty hypotheses. However the measurement model (EFA and CFA) strongly and continuously indicates that partners' compatibility (CP) should be treated as a latent variable. Thus items in the CPC and CPP are combined. Therefore, the empirical model is slightly deviated from the theoretical model. As a result, six hypotheses have become invalid (i.e. hypotheses based on CPC and CPP) for the empirical model. Altogether, the structural model tests only fourteen hypotheses. Several structural models are developed in order to test these hypotheses.

Firstly, the basic model is examined. Then, the model is integrated with the moderating effects for each variable.

4.9.1 Basic Structural Model

The structural model for basic relationships (only independent and dependent variables) is shown in Figure 4.16. This model tests three hypotheses. Referring to Figure 4.16, vendor management capability (VM), vendors' service performance (VSP) and degree of outsourcing (DOO) are exogenous constructs impact on outsourcing success (OS), which is the endogenous construct. The results indicate that the effects of VM, VSP and DOO towards the OS as positive and significant (P<0.05). Among them, VM has the strongest effect on outsourcing success (β= 0. 64). There is no considerable difference in the strength of DOO and VSP of their effects on OS.



* Significant at 0.05 level

Figure 4.16: Basic Structural Model

The GOF values are summarized in Table 4.36. Only GFI shows moderate model fit, but CIMIN//DF and other fit indices (i.e. RMSEA, RMR) indicate that the absolute

model fit is high. In addition to that, most of the incremental and parsimony indices confirm the appropriate level model fit.

Table 4.36: GOF indices for Basic Structural Model

Absolute				Incremental			Parsimony
CIMIN/DF	RMR	GFI	RMSEA	IFI	TLI	CFI	PRATIO
1.472	.080	.847	.048	.947	.941	.947	.906

Therefore, this model allows making conclusions on the hypothesized relationships. As noted above, the model basically tests three hypotheses (i.e. H1, H2 and H3). Table 4.37 summarizes the statistical finding related to the stated hypotheses.

Table 4.37: Hypotheses testing results on Direct Paths

Path	Hypotheses	B	P	S.E	C.R	Support
DOO →OS	**H1:** The degree of outsourcing influences the outsourcing success.	.36	***	.040	3.995	Yes
VM → OS	**H2:** There is a positive relationship between vendor management capability and outsourcing success.	.64	***	.055	6.171	Yes
VSP→ OS	**H3:** There is an association between vendor's service performance and outsourcing success.	.32	.003	.103	2.955	Yes

According to Table 4.37, three basic direct relationships are significant at 0.05 level. Thus, the observed data supported the basic hypothetical relationships. This is aligned with the previous literature, and they are further confirmed in the Sri Lankan context. Other related post-hoc analyses will be further discussed later in this chapter.

4.9.2 Structural Models for Moderating Effects

In addition to the direct relationships, the study attempts to test two moderating effects, which are the partnership quality (PQ) and partners' compatibility (CP). A moderator is a variable that changes the relationship between two related variables. It can increase/reduce the strength of the relationship, or change the direction (i.e. positive to negative or vice versa) of the relationship (Lindley and Walker, 1993). The moderator does not need to have a significant relationship with predictor/criterion (Hair *et al*., 2006). The moderating effects in SEM can be tested in many ways. This mainly relies on the nature of the variable. The moderator can be categorical or continuous.

1. *Categorical variables:* 'Multi-group Analysis' method is used for categorical variables, where groups are clear and logical.
2. *Continuous Variables:* 'Interaction' method can be applied for testing the moderating effect. This requires a series of calculations (items in the predictor X items in the moderator) to create a new variable for the purpose of interaction effect (Hair *et al*., 2006)

But there are some situations where continuous variables could be applied to multi-group analysis. For this purpose, groups are created to have two clear peaks in the frequency distribution, and it should be meaningful. Multi-group analysis requires a considerably large sample, due to the analysis being based on different groups.

The moderating variables of the current study are continuous, making the interaction method suitable for the analysis. The multiplication of items in the predictor with the items in the moderator created a pool of new items. For example, in order to create an interaction effect of VM (5 items) into CP (8 items), 40 (5 X 8) items need to be

generated. In such cases, item parcelling could be applied to reduce the number of items (Hair *et al*., 2006, p. 826). It is done by considering the exploratory factor analysis (EFA) for all VM_CP product (cross multiplied) indicators. The numbers of parcels were decided by looking at the rotated component matrices for different numbers of extracted factors. In most cases, the optimal numbers of parcels are equal to the number of dimensions of either variable in moderating effects (i.e. number of dimensions/items in VM or CP in the case of VM_CP), but, in some cases, the number of parcels proposed by EFA deviate from the conditions above. Please refer Appendix G which shows the exploratory factor analysis carried out in order to determine data parcels for interaction effect.

A sequence of steps is followed to introduce moderating variables into the basic model. In one turn, only one moderating variable is inserted into the basic structural model with regards to a corresponding main relationship. Here, the main relationships are DOO→OS, VM→ OS and VSP→OS. Separate structural models are performed to test the influence from each moderators onto the each relationship (e.g. DOOmCP→OS VMmCP→OS, VMmPQ→OS, VSPmCP→OS, and VSPmPQ→OS).

Then, both moderation effects on main relationships (e.g. both VMmCP →OS and VMmPQ→OS in one model) are tested in a single model. Beta (β) coefficients and changes in GOF are observed in each model (Refer Appendix H). The comparison of GOF indices indicates that the integrated models have higher model fit than single models. As a result, β coefficient also reports a higher value for single models. This may be due to the correlation between CP and PQ (r=.56). Better GOF and higher β coefficient also prove that partners' compatibility and partnership quality strengthens each other. Furthermore, the integrated models represent the reality (practical) rather

than the isolated models. Thus this study presents only integrated structural models for relevant tests. Accordingly, the following are the structural models used for testing the moderating effects.

A. Moderating effect of partner's compatibility (CP) on the relationship between degree of outsourcing (DOO) and outsourcing success (OS). This model would be testing ***H8.***

B. Moderating effect of partner's compatibility (CP) and partnership quality (PQ) on the relationship between vendor management capability (VM) and outsourcing success (OS). The model would be testing ***H4*** and ***H9.***

C. Moderating effect of each dimension of the partnership quality (i.e. COP, PQT and PQC) construct on the relationship between vendor management capability (VM) and outsourcing success (OS). The model would be testing ***H5a, H5b, and H5c.***

D. Moderating effect of partner's compatibility (CP) and partnership quality (PQ) on the relationship between vendors' service performance (VSP) and outsourcing success (OS). The model would be testing ***H6*** and ***H10.***

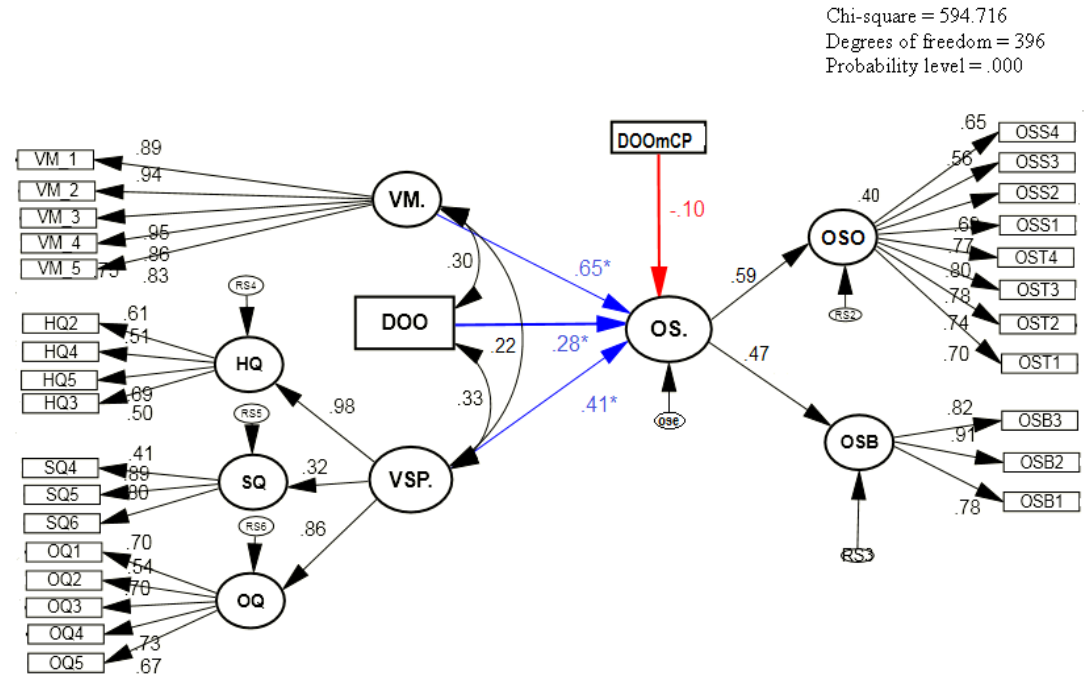
E. Moderating effect of each dimension of the partnership quality (i.e. COP, PQT and PQC) construct on the relationship between vendors' service performance (VSP) with outsourcing success (OS). This model would be testing ***H7a, H7b, and H7c.***

Consequently, there are five structural models used to test the moderating effect from the main construct(s) and individual dimensions. The following discussion is based on A-E models.

A. Moderating effect of partner's compatibility (CP) on the relationship between degree of outsourcing (DOO) and outsourcing success (OS).

This model tests hypothesis 8 (H8). DOO is defined as an observed variable, while CP is a metric variable. EFA for the interaction effect derives only a single factor, with eigenvalue greater than 1. Based on that, the structural model is constructed, shown in Figure 4.17.

The model fit statistics χ^2 is significant at 0.05 level, with the GOF summary depicted in Table 4.38. The GOF indices also demonstrate that the model has a satisfactory level model fit for the predictions.



* Significant at 0.05 level

Figure 4.17: Structural model for interaction effect of DOO and CP on OS

Table 4.38: GOF indices for the structural model in Figure 4.17

Absolute				Incremental			Parsimony
CIMIN/DF	RMR	GFI	RMSEA	IFI	TLI	CFI	PRATIO
1.502	.079	.840	.049	.939	.932	.938	.910

Therefore, the direct paths to OS are positive and significant, as confirmed in the basic structural model in Figure 4.17. However, the moderation effect (i.e. DOOmCP→ OS) is insignificant (P= 0.243), hence, H8 is rejected. The result is summarized in Table 4.39.

Table 4.39: Hypotheses testing results of moderating effect of Partners' Compatibility (CP) on to the relationship of DOO and OS

Path	Hypotheses	B	P	S.E	C.R	Support
DOO →OS	**H1:** The degree of outsourcing influences the outsourcing success.	.28	***	041	2.898	Yes
DOOmCP→ OS	**H8:** Partners' compatibility moderates the relationship between degree of outsourcing and outsourcing success.	-.10	.243	.057	-1.167	No

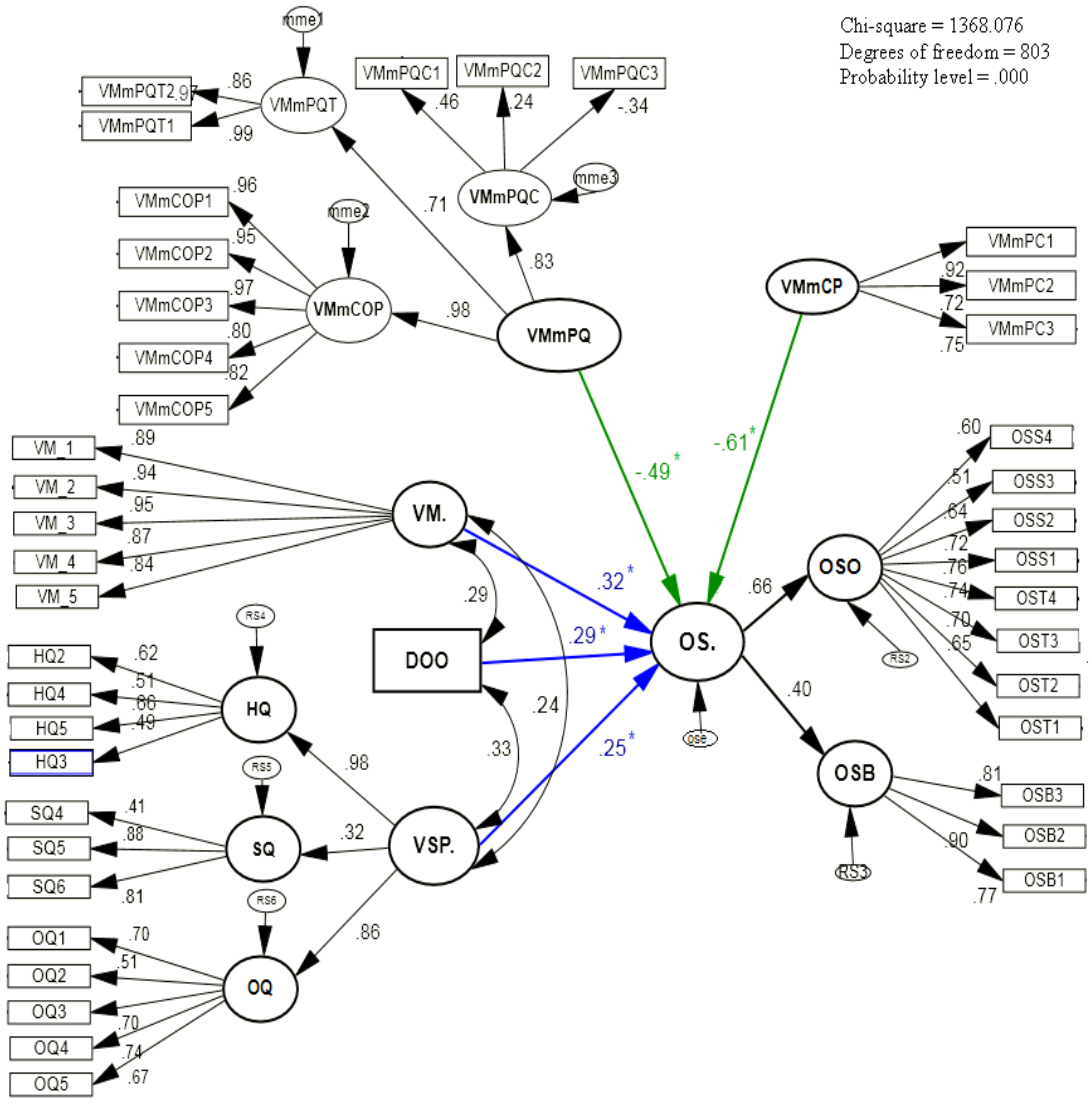
This concludes that partners' compatibility (CP) does not moderate the relationship between the degree of outsourcing (DOO) and outsourcing success (OS).

B. Moderating effect of partner's compatibility (CP) and partnership quality (PQ) on the relationship between vendor management capability (VM) and outsourcing success (OS).

The purpose of this structural model is to test the aggregated interaction effects from each moderating variable on the relationship between VM and OS. The second order structural model is performed for the interaction effect of PQ, in order to aggregate the impact of the whole construct. CP is a latent variable, making first order modelling quite sufficient.

The calculation of interaction effect between VM and PQ generates a number of items for each dimension in the PQ (i.e. COP, PQT and PQC). As mentioned earlier, the rotated component matrix in EFA for all products are parcelled into five items for VMmCOP, two items for VM_ PQT, and three items for VM_PQC (please refer Appendix G).

Next, there are 35 products for the VM_CP, and the exploratory factor analysis (EFA) proposes three parcels. Accordingly, SEM is performed to test both the moderation effects (i.e. PQ and CP) on the relationship of the vendor management capability (VM) and outsourcing success (OS). Both effects are illustrated in Figure 4.18, showing a satisfactory level model fit. The GOF indices are summarized in Table 4.40.



* Significant at 0.05 level

Figure 4.18: Structural model for the interaction effects of PQ and CP on to the relationship of VM and OS

Table 4.40: GOF indices for the structural model in Figure 4.18

Absolute				Incremental			Parsimony
CIMIN/DF	RMR	GFI	RMSEA	IFI	TLI	CFI	PRATIO
1.502	.079	.840	.049	.939	.932	.938	.910

Table 4.41: Hypotheses testing results of moderating effect of Partnership Quality (PQ) and Partners' Compatibility (CP) on to the relationship of VM and OS

Path	Hypotheses	B	P	S.E	C.R	Support
VM→OS	**H2:** There is a positive relationship between vendor management capability and outsourcing success.	.323	***	.045	3.477	Yes
VMmPQ→ OS	**H4:** The relationship between vendor management capability and outsourcing success is moderated by partnership quality.	-.487	***	.398	-3.954	Yes
VMmCP→ OS	**H9**: Partners' compatibility moderates the relationship between vendor management capability and outsourcing success.	-.606	***	.054	-5.895	Yes

The model χ^2 is significant at 0.05 level. Therefore, the model in Figure 4.18 shows an appropriate model fit to determine the hypothesized relationships. The related statistics for hypothesis testing is summarized in Table 4.41.

The relationship between VM and OS is positive; this has been tested with Hypothesis 2 (H2). Then, hypothesis 4 and 9 (H4 & H9) test aggregated moderation effect of each PQ and CP constructs on to the relationship between VM and OS.

Firstly, H4 is examined. The path analysis shows that the interaction effect of VM and PQ (i.e. VMmPQ) to OS is significant ($P < .05$). Therefore, H4 is accepted. However, the interaction effect is negative ($\beta = -.487$; C.R = -3. 954; S.E = .398), and has a stronger effect than VM→OS ($\beta = -.323$). This simply means that with the presence of the moderator (PQ), the basic relationship (VM→OS) becomes negative.

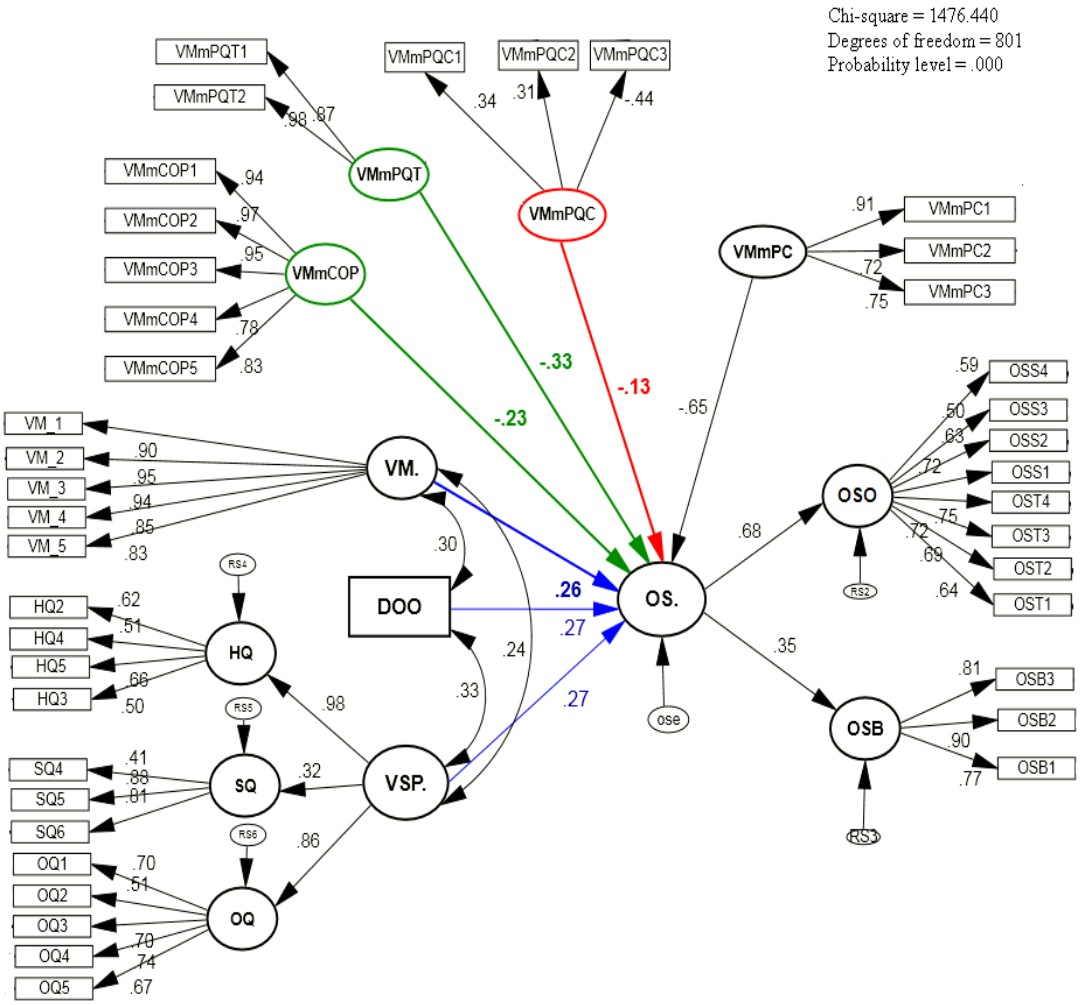
Secondly, H9 is tested. The path to interaction effect to OS (VMmCP→ OS) is significant ($P < .05$), and hence, H9 is accepted. But, the interaction effect of VM and CP (i.e. VMmCP) to OS also has negative impact ($\beta = -.606$; C.R = -5.895; S.E = .054).

Therefore, with the presence of CP, the relationship between VM and OS becomes negative. Although the interaction effect is negative, it is stronger than the direct impact of VM to CP (i.e. $\beta = -.323$).

In conclusion, the partnership quality (PQ) and partners' compatibility (CP) moderate the relationship between vendor management capability (VM) and outsourcing success (OS). However, when comparing both moderators, partners' compatibility ($\beta=-.606$) has a stronger effect than partnership quality ($\beta=-.484$) on the relationship between VM and OS. Partnership quality (PQ) is a construct comprising of three dimensions. Therefore, the moderation effect of each individual dimension on the relationship (VM→ OS) should be examined. This will be discussed in the next structural model.

C. Moderating effect of each dimension of the partnership quality (i.e COP, PQT and PQC) construct on the relationship between vendor management capability (VM) and outsourcing success (OS).

This structural model tests the effect of each dimension of PQ on the relationship of VM→ OS. Therefore, the first order CFA for PQ is performed with respect to the relationship. It is depicted in Figure 4.19.



* Significant at 0.05 level

Figure 4.19: Structural model for the moderation effects of COP, PQT and PQC on to the relationship of VM and OS

Accordingly, the model tests three hypotheses (H5a, H5b, H5c).The overall model χ^2 is significant at 0.05 level. The GOF indices of this model are reported in Table 4.42.

Table 4.42: GOF indices for the structural model in Figure 4.19

Absolute			Incremental			Parsimony
CIMIN/DF	RMR	RMSEA	IFI	TLI	CFI	PRATIO
1.843	.124	.064	.882	.872	.881	.930

According to Table 4.42, absolute and parsimony measures show good model fit compared to incremental measures. The CIMIN/DF < 3; RMSEA< 0.08 and PRATIO >0.9 confirms the model fit as satisfactory. Therefore, hypothetical relationships in the model are evaluated. The hypotheses and corresponding statistics are shown in Table 4.43.

Table 4.43: Hypotheses testing results of moderating effect of Cooperativeness (COP), Trust (PQT) and Commitment (PQC) on to the relationship of VM and OS

Path	Hypotheses	B	P	S.E	C.R	Support
VMmPQT→ OS	**H5a:** The relationship between vendor management capability and outsourcing success is moderated by 'trust' between partners in the partnership.	-.329	.036	.127	-2.102	Yes
VMmPQC→ OS	**H5b:** The relationship between vendor management capability and outsourcing success is moderated by 'commitment' of partners to the partnership.	-.130	*.551*	.810	-.596	No
VMmCOP→ OS	**H5c:** The relationship between vendor management capability and outsourcing success is moderated by 'cooperativeness' of partners to the partnership.	-.225	.007	.076.	-2.686	Yes

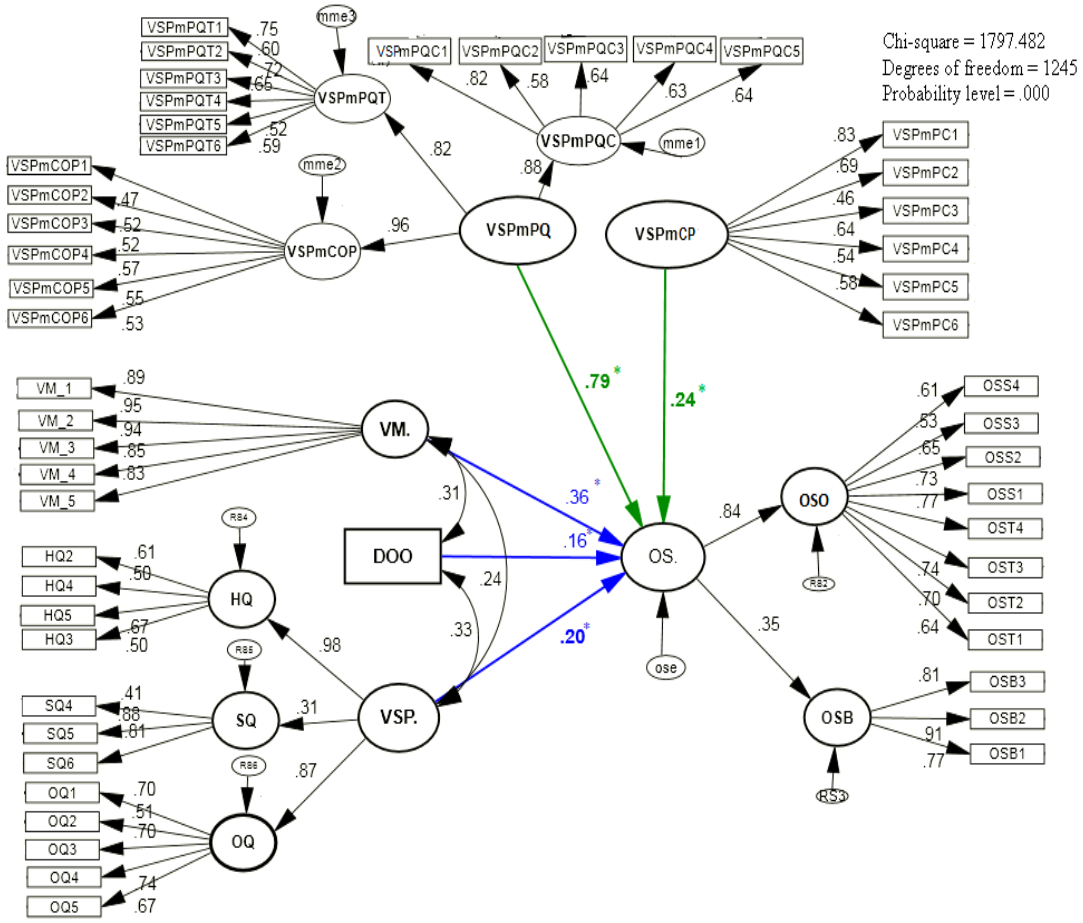
According to Table 4.43, only VMmPQT (i.e. trust) and VMmCOP (i.e. cooperativeness) interaction effects on OS are significant (P<0.05), while VMmPQC→ OS path is not significant.

Consequently, the hypotheses are assessed. Firstly, H5a proposes the hypothetical relationship among PQT, VM and OS. As mentioned earlier, VMmPQT is the interaction effect between VM and PQT that assesses the moderation effect. The path from moderating variable to the endogenous variable (VMmPQT→OS) is significant at 5 per cent level, and hence H5a is accepted. However, the impact is negative (β=-.329; S.E.= 0.127; CR=-2.102). This explains that with the presence of PQT (trust), the relationship between VM and OS becomes weaker.

The H5b proposes the moderating effect of 'partners' commitment' (PQC) to the relationship between VM and OS. The path analysis of the structural model above (Figure 4.19) proves that, the relationship of VMmPQC→ OS is not significant. Therefore, H5b is rejected.

H5c examines the moderation impact of partners' cooperativeness' (COP) to the relationship between VM and OS. VMmCOP is the variable that measures moderation impact. The path VMmCOP→ OS is significant at 5 per cent level. Therefore, H5c is supported by the observed data. The moderation effect to the endogenous variable is negative (β=-0.225; S.E.= 0.076; CR=-2.686), rendering the impact of partners' cooperativeness on the relationship between VM and OS as negative. This is similar to 'trust', but the strength of trust (β= -.329) is higher than cooperativeness (β= -.225) in moderating basic relationships.

D. Moderating effect of partner's compatibility (CP) and partnership quality (PQ) on the relationship between vendors' service performance (VSP) and outsourcing success (OS).



* Significant at 0.05 level

Figure 4.20: Structural model for the interaction effects of PQ and CP on to the relationship of VSP and OS

The purpose of this structural model is to test hypotheses 6 (H6) and hypothesis 10 (H10). The measurement model finalized 12 items for vendors' service performance (VSP). There are seven items in CP, and the calculation of interaction effect created (12 X 7) 84 products. Item parcelling is used with EFA to reduce the number of items. Six parcels are identified for the interaction effect for VSP and CP (VSPmCP). A similar

procedure is carried out for each dimension of PQ, and the subsequent analysis generated six parcels for VSPmPQT; five parcels for VSPmPQC, and six parcels for VSPmCOP in order to measure the aggregated interaction effect of VSPmPQ on OS. The moderating effects from the two basic constructs (i.e. PQ and CP) on the relationship between VSP and OS are shown in Figure 4.20.

The overall model χ^2 is significant at 5 per cent level. The GOF indices in Table 4.44 also support the model fit.

Table 4.44: GOF indices for the structural model in Figure 4.20

Absolute			Incremental			Parsimony
CIMIN/DF	RMR	RMSEA	IFI	TLI	CFI	PRATIO
1.444	.081	.046	.902	.894	.901	.939

According to Table 4.44, goodness of fit indices shows a good model fit compared to incremental measures. Specifically, CIMIN/DF < 3; RMSEA< 0.08; IFI, CFI and PRATIO >0.9, confirms that the model fit is satisfactory. Therefore, the hypothetical relationships in the model are evaluated.

As previously noted, VSPmCP and VSPmPQ are the (interaction effects) moderating effects on the endogenous variable (i.e. OS). The path analyses supported to the hypotheses testing with the corresponding statistics are summarized in Table 4.45. According to Table 4.45, both interaction effects are (i.e. VSPmPQ and VSPmCP) significant to OS (P<0.05), and each hypothesis is assessed accordingly.

Firstly, H6 explains the hypothetical relationship between VSPmPQ and OS. The path from moderating variable to the endogenous variable (VSPmPQ→OS) is significant,

hence H6 is accepted. The impact is positive and strong (β=0.790; S.E= 0.164; CR=7.911). This explains that with the presence of PQ, the relationship between VSP and OS becomes stronger.

Next, H10 is assessed. H10 explains the hypothetical relationship between VSPmCP and OS. The path from moderating variable to the endogenous variable (VSPmCP→OS) is also significant, so H10 is accepted. The moderating effect is positive (β=.235; S.E= 0.066; CR=3.397). Thus, with the presence of CP, the relationship between VSP and OS becomes stronger.

However, when comparing both moderators, partnership quality (PQ) has a stronger effect (β=.790) than partners' compatibility (β=.235) on the relationship between VSP and OS.

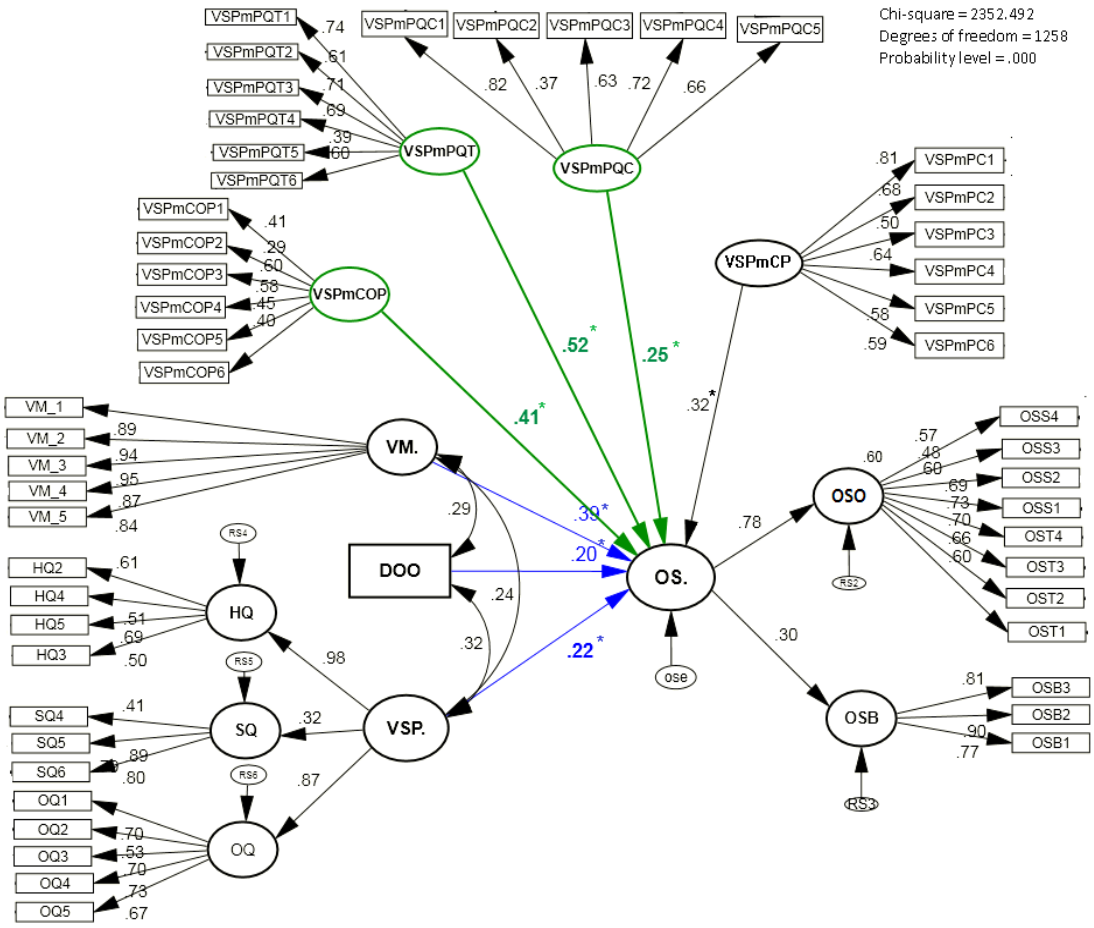
Table 4.45: Hypotheses testing results of moderating effect of Partnership Quality (PQ) and Partners' Compatibility (CP) on to the relationship of VSP and OS

Path	Hypotheses	B	P	S.E	C.R	Support
VSPmPQ→ OS	**H6:** The relationship between vendor's service performance and outsourcing success is moderated by partnership quality.	.790	***	.164	7.911	Yes
VSPmCP→ OS	**H10:** Partners' compatibility moderates the relationship between vendor's service performance and outsourcing success.	.235	***	.066	3.397	Yes

In summary, the partnership quality (PQ) and partners' compatibility (CP) moderate the relationship between vendors' service performance (VSP) and outsourcing success (OS). Partnership quality (PQ) construct however, comprises of three dimensions. Therefore, the moderation effect of each individual dimension on the relationship (VSP→ OS) should be examined, and this is discussed in the next structural model.

E. Moderating effect of each dimension of the partnership quality (i.e. COP, PQT and PQC) construct on the relationship between Vendors' service performance (VSP) and outsourcing success (OS).

This structural model tests the moderating effect of each dimension of PQ (i.e. COP, PQT and PQC) on the relationship of VSP and OS. Therefore, first order impact of PQ on the relationship is assessed. The structural model is illustrated in Figure 4.21, and accordingly, the model tests three hypotheses *(*H7a, H7b, H7c). The χ^2 of the model in Figure 4.21 is significant at 5 per cent level, and the GOF indices related to the model is summarized in Table 4.46.



* Significant at 0.05 level

Figure 4.21: Structural model for the moderation effects of COP, PQT and PQC on to the relationship of VSP and OS

Table 4.46: GOF indices for the structural model in Figure 4.21

Absolute			Incremental		Parsimony
CIMIN/DF	RMR	RMSEA	IFI	CFI	PRATIO
1.870	.100	.065	.805	.803	.949

According to Table 4.46, absolute and parsimony measures show satisfactory model fit compared to incremental measures, such as CIMIN/DF < 3; RMSEA< 0.08 and PRATIO >0.9. However, incremental indices are moderately satisfied. Accordingly, the

hypothetical relationships in the model are evaluated, and the hypotheses and corresponding statistics are shown in Table 4.47.

Table 4.47: Hypotheses testing results of moderating effect of Cooperativeness (COP), Trust (PQT) and Commitment (PQC) on to the relationship of VSP and OS

Path	Hypotheses	B	P	S.E	C.R	Support
VSPmPQT → OS	**H7a:** The relationship between vendor's service performance and outsourcing success is moderated by 'trust' between partners in the partnership.	.517	***	.126	5.033	Yes
VSPmPQC → OS	**H7b:** The relationship between vendor's service performance and outsourcing success is moderated by 'commitment' of partners to the partnership.	.247	.003	.100	2.972	Yes
VMmCOP → OS	**H7c:** The relationship between vendor's service performance and outsourcing success is moderated by 'cooperativeness' of partners to the partnership.	.414	***	.198	3.713	Yes

According to Table 4.47, all three interaction effects to the OS are significant (P<0.05). Thus, it is clear that all factors in PQ moderates the relationship between VM and OS.

Consequently, the hypotheses are assessed. Firstly, H7a states the hypothetical relationships among COP, VM and OS. As noted in the previous model, VSPmPQT is the interaction effect between VSP and PQT. The path from moderating variable to the endogenous variable (i.e. VSPmPQT→ OS) is significant (p<.05), hence, H7a is accepted. The impact is positive and strong (β=-.517; S.E= 0.126; CR=5.033). This confirms that with the presence of PQT (trust), the relationship between VM and OS becomes stronger.

Then, H7b is assessed. It explains the moderating effect of 'partners' commitment' (i.e. PQC) to the relationship between VSP and OS. The path analysis of the structural model (Figure 4.21) proves that, VSPmPQC→ OS is significant at 5 per cent level.

Therefore, H7b is supported by the observed data. The moderating effect to the endogenous variable is positive (β=0.247; S.E=0.100; CR=2.972), and with the presence of PQC (commitment), the relationship between VSP and OS becomes stronger.

Next, H7c tests the moderation impact of partners' cooperativeness' (i.e. COP) to the relationship between VSP and OS. It is known that VSPmCOP is the variable that measures the moderation impact. The path VSPmCOP→ OS is significant, and therefore, H7c is accepted. The moderation effect to the endogenous variable is also positive (β= .414; S.E= 0.198; CR=3.713). This is similar to 'trust' and 'commitment', hence the relationship between VSP and OS becomes stronger with the presence of partners' 'cooperativeness'.

However, among the components of the PQ construct, PQT (trust) has the strongest moderating effect, followed by COP (cooperativeness). The lowest moderating effect is from PQC (commitment).

In summary, five structural models test fourteen hypotheses. Twelve hypotheses are accepted, and upon the acceptance of hypothesis 1(H1), there is a need to perform a post hoc analysis. H1 explains the hypothetical relationship between 'degree of outsourcing (DOO)' and 'outsourcing success (OS)', and a significant, positive relationship is confirmed. But, this is only a part of objective one of the study. The rest is to determine the impact of different levels/degrees of breadth and depth on outsourcing success. Therefore, Breadth (B) and Depth (D) are classified into Low, Medium and High by taking their observed scores into account. The frequency of each category is reported in Table 4.48. Then, a new grouping variable was created by combining these levels in Breadth and Depth such as BL, BM, BH, DL,DM, and DH.

Table 4.48: **Breadth and Depth frequency**

		Value Label	N
Breadth (B)	1	Low (L)	57
	2	Med (M)	60
	3	High (H)	90
Depth (D)	1	Low (L)	62
	2	Med (M)	67
	3	High (H)	78

Next, analysis of variance (ANOVA) is performed in order to test the means differences of several groups. The ANOVA result is shown in Table 4.49.

Table 4.49: ANOVA Tests of Between-Subjects Effects

Dependent Variable: OS

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	50.957[a]	8	6.370	8.135	.000
Intercept	1.870	1	1.870	2.388	.124
Breadth_G	42.378	2	21.189	27.060	.000
Depth_G	.605	2	.303	.387	.680
Breadth_G * Depth_G	1.123	4	.281	.358	.838
Error	155.043	198	.783		
Total	206.000	207			
Corrected Total	206.000	206			

a. R Squared = .247 (Adjusted R Squared = .217)

The analysis shows that only breadth (B) groups are significant ($p<0.05$), and multiple comparisons for joint groups are conducted to compare every group's mean with every other group's mean. Accordingly, Post Hoc Tukey's test is conducted to identify the significance of the difference in OS among the groups (please refer to Appendix I for ANOVA and Tukey's test). According to the significant differences identified by

Tukey's test, the following groups are identified with their respective mean OS (Table 4.50).

Table 4.50: Mean scores of OS for different levels of Breadth and Depth

Mean-OS		Depth		
		Low	Med	High
Breadth	Low	3.93	3.75	3.87
	Med	4.55	4.27	4.37
	High	4.81	4.91	4.90

Table 4.50 clearly shows that outsourcing success is higher in high breadth. The highest score is reported in high breadth and medium depth category, while the lowest is reported in low breadth, medium depth category.

SUMMARY

This chapter presents all the relevant information pertaining to data analysis. The procedure started with data checks, cleaning, and treatments for missing values and data transformation. A total of 207 cases were finalized for final data analysis. SPSS 18.0 and AMOS 18.0 statistical packages were applied accordingly. Tests for multivariate assumptions were also performed to verify the appropriateness of data set for further analysis. The scale purification process was followed by unidimensionality, internal consistency, and validity tests.

However, it should be noted that only the vendors' service performance (VSP) is measured with the adopted scale, and it showed a contextual mismatch from the beginning of the scale purification. As a result, the numbers of items of the scale were reduced to 12 from 22. The exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) proposed partners' compatibility (CP) as a latent variable. EFA and

CFA also proposed two components, instead of three for outsourcing success. Apart from that, all other constructs are aligned with the theory. Finally, the measurement (empirical) model slightly deviated from the theoretical model, and consequently, six hypotheses were rendered invalid, reducing the empirical model to fourteen hypotheses.

The structural equation modelling (AMOS) was performed for hypotheses testing. Altogether, six models were constructed for each theoretical aspect. All models (Chi square) were significant at 5 per cent significance level, and the goodness of fit indices demonstrated a satisfactory model fit. This facilitated the assessment of the corresponding hypothetical relationship, explained by each structural model. Among the fourteen hypotheses, twelve were accepted. Besides, the chapter discussed ANOVA and post-hoc analysis results for different degrees of outsourcing (breadth and depth) on outsourcing success. The analysis revealed that, only different levels of breadth are associated with outsourcing success.

Based on the statistical insights provided by chapter 4, Chapter 5 presents the discussions and the conclusion of this study.

CHAPTER 5

DISCUSSION OF RESULTS AND CONCLUSION

5.1 INTRODUCTION

The first section of this chapter discusses the research objectives based on the hypotheses tested and post-hoc analysis conducted in Chapter 4. This is followed by the implications of the study. Next, the contribution of the study to the accumulated body of knowledge and practice is addressed. The limitations of the study and suggestions for potential future researches are presented in the final section.

5.2 DISCUSSION

Modern businesses are formed in the form of specialists rather than generalists, with the aim of providing the best service for their customers. The new way of doing business requires collaboration among specialists. Outsourcing is a popular form of collaboration as partners could still maintain their leverage within the scope of the business.

The services sector business transactions are also formulated as a network of specialists. For instance, the survey has recognised a hotel service as a collection of specialists of leisure activity planners, housekeeping, gardening and interior decoration specialists, intermediaries for reservations, etc. The unique characteristics of services outsourcing have been highlighted in Chapter 1 and 2. Among these factors, the vendor's role in which he/she/firm acts for the focal firm in the service delivery process is the most fundamental. Therefore, services outsourcing has to be carefully managed in order to ensure customer satisfaction. In contrast, managing services sector outsourcing is harder than manufacturing sector outsourcing. Concerning the overall issues associating with

service outsourcing and gaps in the existing epistemology, the first chapter identified three questions that need solving, followed by five research objectives. The following section discusses the empirical evidences corresponding to each research objective.

5.2.1 Objective 01

To investigate the impact of degree of outsourcing on outsourcing success in services.

Outsourcing is one of the options in conducting collaborative business, but firms have to manage their leverage on the outsourced function. This is determined by the 'degree of outsourcing' (DOO). As identified in Chapter 1, the existing epistemology bears various confusing viewpoints of the impact of degree of outsourcing on the organisational performance, and outsourcing success. Therefore, this study attempts to identify the association between degree of outsourcing and outsourcing success. Accordingly, hypothesis one (H1) is established.

Hypothesis1: H1: The degree of outsourcing influences the outsourcing success.

The hypothesis above is accepted at 5 per cent significance level. The positive relationship between degree of outsourcing and outsourcing success (β=0.36) is confirmed. The finding is aligned with previous literature on the subject (e.g. Gilley and Rasheed, 2000; Thouin *et al*., 2009).

Next, as noted in the objective, the study aims to examine whether 'breadth' and 'depth' are equally important in this context. As described in Chapter 4, breadth and depth are categorised into three levels; high, medium and low. Consequently, the variance of

analysis (ANOVA) revealed that, only the different 'levels of breadth' affects outsourcing success ($F= 27.060$, $df= 2$, $p< 0.05$), while 'levels of depth' does not. Thus, the equilibrium point, where partners depend equally upon each other for valued resources (Cook and Yamagishi, 1992) might depends on the level of breadth.

Then, with corresponding to the findings above, a post-hoc analysis is conducted. Tukey's test for multiple group comparison helps identify the mean differences among different groups. As stated in Chapter 4, the highest mean value is reported from 'high level' breadth and 'medium level' depth ($\mu= 4.91$). This means that the higher the number of activities outsourced, the higher the probability of success. Although level of depth is not significant, it is worth noting that, depth should be definitely at a low level with respect to the low or medium level breadth, for higher level of success. High level depth results in a moderate success. Whenever, the level of breadth is high, level of depth should be kept at medium to ensure optimal success of outsourcing. This indicates that there may have a non-linear relationship between the degree of outsourcing and firm's performance. However, further investigations may help verify whether the 'curvilinear relationship' (Kotabe *et al*., 2008; Kotabe and Mol, 2009) is a result of different levels of depth.

5.2.2 Objective 02

To verify the relationship between vendor management capability and outsourcing success in services.

Services outsourcing is identified as a triad made up of focal firm, vendors and customers (Li and Choi, 2009). The vendor management is said to be the primary task of the focal firm. It is measured in terms of selection, monitoring, evaluation, developing vendors (Han *et al*., 2008; Chan and Chin, 2007; Byramjee *et al*., 2010) and

compensating them appropriately (Sun *et al*., 2002). The positive relationship between vendor management capability and outsourcing performance is a well-established phenomenon (Lee, 2001; Chan and Chin, 2007; Han *et al*., 2008). Therefore, the study attempts to verify it further in the context, and ascertain hypothesis two (H2).

Hypothesis 2: There is a relationship between vendor management capability and outsourcing success.

The empirical evidences of the study further confirms the significant ($p< 0.05$) positive ($\beta=0.64$) relationship between vendor management capability and outsourcing success. Vendor management obtained the highest score, among the factors that have direct impact on outsourcing success. The significant relationship between the two constructs is apparently understandable (Lee, 2001; Chan and Chin, 2007; Han *et al*., 2008). Moreover, all activities that measure the vendor management capability are significant at 5 per cent level. Within the vendor management activities, the contribution of vendor monitoring is the highest ($R^2 = 0.87$), followed by vendor evaluation ($R^2 = 0.85$). Therefore, vendor monitoring and performance evaluation become key aspects of contractual governance. In particular, these activities help firms to identify issues related to vendors and thereby take corrective actions for improvements (Chan and Chin, 2007). Other vendor management activities are also important, as each of them is capable of explaining more than 50 per cent variance of the construct.

5.2.3 Objective 03

To examine the impact of the vendor's service performance on outsourcing success in services.

This study distinguished the direct involvement of the vendor in the service supply chain. As explained by the social exchange theory, the vendors have a greater responsibility in managing outsourcing function for the purpose of receiving mutual benefits. Thus, the vendors are also denoted as one of the major governance bodies in the service-outsourcing context. Accordingly, H3 is hypothesized as below. .

Hypothesis 03: There is an association between vendor's service performance and outsourcing success.

The empirical evidences verified that the vendor's service performance has a significant positive impact on outsourcing success ($P<0.05$; $\beta=0.32$). In the original study, INDSERV has shown a satisfactory reliability and validity (Gounaris, 2005a). It also reports superior psychometric properties to SERVQUAL (Lee, G.J, 2011, p. 3180).

Table 5.1: Deleted items in INDSERV scale

Dimension	Items	Description
Potential Quality	**PTQ 1**	Offers full service
	PTQ 2	Has required personnel
	PTQ 3	Has required facilities
	PTQ 4	Has required management philosophy
	PTQ 5	Has a low personnel turn-over
	PTQ 6	Uses network of partners/ associates
Hard process Quality	**HQ 1**	Keeps time schedules
Soft process Quality	**SQ 1**	Accept agreement enthusiastically
	SQ 2	Listen to our problems
	SQ 3	Opened to suggestions/ideas

However, from the pilot study to the final measurement model development, the scale had many reliability and validity issues. For instance, initial scale purification process with the pilot study data deleted two items from the potential quality, while final data led to deletion of the whole dimension (i.e. PQT), as the reliability reported was too low. Apart from the above items, another 4 items were discarded (HQ1, SQ1, SQ2, SQ3), since their validity is unacceptable. All deleted items are listed in Table 5.1.

According to Table 5.1, it is clear that the context of the study does not oversee a value of 'potential quality' of the vendor in assessing their performance. This reflects that the context of the study (i.e. Sri Lanka) does not have sufficient concern for future occurrences, and thereby demonstrates the characteristics of 'short-term orientation' nature of developing countries (Hofstade, 1984). The reason may be due to high economic uncertainty in developing countries. Therefore, 22-item INDSERV scale shows a contextual mismatch.

Despite these facts, Lee G.J (2011) is stated that the dimensions of INDSERV are interconnected. He empirically justified that the soft process quality (SQ) and hard process quality (HQ) are the mediators between potential quality and output quality, instead of their independent roles.

Among the dimensions remaining in the scale, hard process quality (HQ) shows the highest contribution on the vendors' service performance (β= 0.98, R^2= 96.5%) followed by output quality (β= 0.86, R^2= 74%). In relation to all items of the INDSERV scale, the prominent performance characteristics of a vendor are: attention on details (HQ4), has a pleasant personality (SQ4), argues when necessary (SQ5), has creative offerings (OQ4), reaches objectives (OQ1) and contributes to focal firm image (OQ3).

5.2.4 Objective 04:

To investigate the effect of partnership quality (PQ) as a moderating variable in the relationships between 1) vendor management capability (VM) and outsourcing success (OS), 2) vendor's service performance (VSP) and outsourcing success (OS).

Partnership quality explains the relational governance in the resource exchange process. This study argues that contractual governance could perform alone without partnership quality; hence it does not directly affect outsourcing success. The empirical evidences proven that the covariance between partnership quality (PQ) and outsourcing success (OS) is not significant ($p>0.05$). Thus, there is no direct connection between partnership quality (PQ) and outsourcing success (OS). Partnership quality however, has been identified as a key element of resource exchange success. However, Williamson (1979) Sun *et al*. (2002) and Lacity *et al*. (2009) identified contractual and relational are hybrid governance structures in exchange. Donada and Nogatchewsky, (2009) proposed to consider the interaction of economic and relational factors in exchange. Accordingly, this study identifies the moderating effect of partnership quality on the relationship between contractual governance elements and outsourcing success. Accordingly, two main hypotheses (H4 & H6) for aggregated effects, and six supplementary hypotheses (H5a, H5b, H5c and H7a, H7b, H7c) for the effect from each dimension were developed in Chapter 2. They were subsequently tested in Chapter 4. The next section is allocated for the discussion of the results of the hypothesis, based on two parts in objective 4. Firstly, the moderation effect of partnership quality (PQ) to the relationship between vendor management capability and outsourcing success (VM→OS), and secondly, the moderation effect of partnership quality (PQ) to the relationship between vendors' service performance and outsourcing success (VSP→OS) will be explained.

1. The moderating effect of partnership quality (PQ) on the relationship between vendor management capability (VM) and outsourcing success (OS)

Hypotheses H4 and H5 (a,b,c) facilitate the interpretation of the moderation effect of partnership quality (PQ) to the relationship between vendor management capability and outsourcing success (VM→OS).

Hypothesis 04: The relationship between vendor management capability and outsourcing success is moderated by partnership quality.

A second order structural model for the moderation effect of partnership quality on the relationship between vendor management capability and outsourcing success is assessed. The model explained 99 per cent of variance (R^2 of the model in Figure 4.14). The initial model, which was without the moderation effect, is reported with 95 per cent variance. Thus it can be concluded that, the explanation power of the model has increased with the moderation effect. It is also deemed that the moderation effect is significant and negative ($P<0.05$; $\beta= -0.49$). Accordingly, with the increase of partnership quality aspects, a firm can reduce the weight on vendor management activities for similar or better outcomes. As explained by Uzzi (1999), when actors are socially embedded they have strong understanding of each other which in turn influences managerial actions and performance. Partnership quality is relational, soft and cost-free, in comparison to vendor management activities. Therefore, firms could minimize time, effort and monitoring expenses of managing vendors by increasing relational aspects of partnership. This is demonstrated graphically in Figure 5.1.

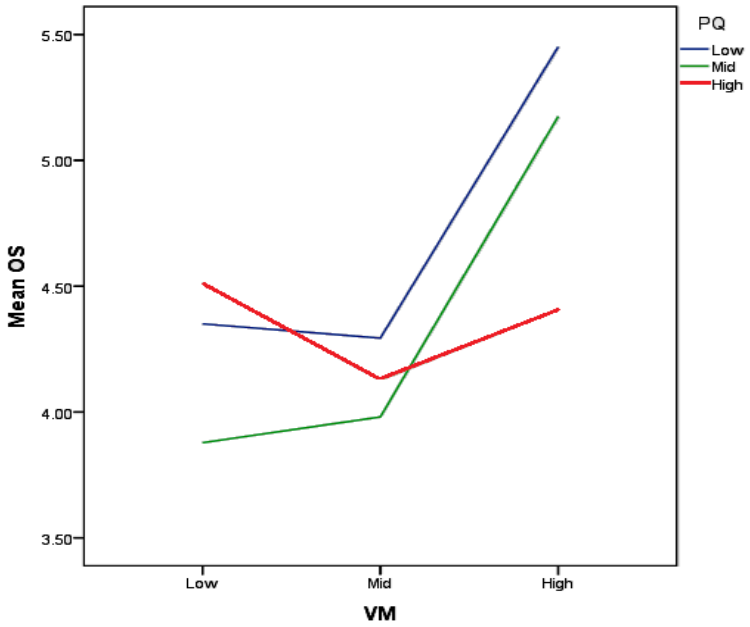


Figure 5.1: The relationship between vendor management capability (VM) and outsourcing success (OS) for different levels of partnership quality (PQ)

According to Figure 5.1, when the partnership quality (PQ) is low or medium, firms have to strive more on vendor management activities (VM) for better outsourcing outcomes. When partnership quality is high, less weightage could be placed on vendor management activities. The moderate and high levels of vendor management capabilities are needed to maintain only low-level of partnership quality. A higher level of partnership quality and a higher level of vendor management activities reduce outsourcing success, due to heavy weights, and attentions on managerial aspects as well as relational aspects.

However, among the dimensions of the partnership quality, cooperativeness is the strongest (λ=0.98), and it explains (R^2=0.957) 95.7 per cent variance of the interaction effect, followed by commitment (λ=0.98, R^2= 0.957). Next, this study attempts to verify the segregated effect of each partnership quality dimension on to the relationship. Hypothesis 5a, 5b and 5c are assisted to ascertain the relationships.

Hypothesis 5a: The relationship between vendor management capability and outsourcing success is moderated by trust between partners in the partnership.

The results indicate that 'trust' between partners' has a significant but negative effect on the relationship between vendor management and outsourcing success ($p<0.05$, $\beta=-0.329$). Consequently, the effect of trust on vendor management capability and outsourcing success is equivalent to the partnership quality (which is the main construct of trust). The interaction effect (i.e. VMmPQT) explains 50 per cent variance of the construct, and hence the moderation effect is average. The trust however, facilitates understanding requirements in the exchange process. Therefore, a higher level of trust between the focal firm and vendor could enhance outsourcing success with minimal contractual governance. This might be due to the fact that a higher level of trust between partners reduces the perceived risk of outsourcing (Benamati and Rajkumar, 2008). This finding also supports the bidirectional requirements of outsourcing success as explained by Cui *et al.* (2009). According to Cui *et al.* (2009) trust is only a partial requirement and simultaneous communication, strong partner competence, strong in-house competence, clear problem definition and incentive alignment should also be managed. This study continues to test the effect of 'commitment' on outsourcing success (Sun *et al*., 2002; Han *at el*., 2008; Lai *et al*., 2009).

Hypothesis 5b: The relationship between vendor management capability and outsourcing success is moderated by commitment of partners to the partnership.

The 'commitment' represents each partner's dedication in maintaining a strong relationship. The results revealed that there is no significant impact ($P>0.05$) of commitment in moderating the relationship between vendor management capabilities and outsourcing success. This indicates that the commitment is not mitigating the

impact of vendor management activities on outsourcing success. Commitment becomes significant to the partnership quality when it comes with cooperativeness and trust (all three latent variables are significant to partnership quality at 5 per cent level). Therefore, commitment to the partnership alone does not make sense as a moderator.

Although, there are no similar studies examining the moderating role of commitment on the relationship of between vendor management capability and outsourcing success (VM→OS), many studies (e.g. Lee, 2001; Petersen *et al*., 2005; Sun *et al*., 2008; Han *et al*., 2008; Lai *et al*., 2009; Lahiri *et al*., 2009) verified positive outcomes of 'commitment' in a collaborative business context. However, the finding of the present study deviates from the existing literature.

The result (i.e. H5b) shows that, the focal firm's contractual governance is not motivated by 'commitment' to the partnership. This result is considered a novelty to the existing literature and it carries a greater value to the practice as well. The managers in this context may perceive commitment as an important partnership quality element that could create a favourable and collaborative working environment. Even though Han *et al*., (2008) state that commitment warrants the maintenance of the partnership (p. 35), managers in the context of this study may perceive that vendor's commitment is in default or/and it could not accumulate a value for work (official) defined in the contract.

Next, hypothesis 5c test the effect of cooperativeness.

Hypothesis 5c: The relationship between vendor management capability and outsourcing success is moderated by cooperativeness of partners to the partnership.

Cooperativeness represents a tangible reciprocal stimulus each party receives in the partnership. The empirical evidence proves that cooperativeness significantly moderates the relationship between vendor management activities and outsourcing success, but the effect is negative ($p<0.05$, $\beta= -0.225$). This interpretation is similar to the effect of main construct (i.e. Partnership quality) to the relationship between vendor management capability and outsourcing success (VM→OS). Accordingly, the higher the level of cooperativeness, the weaker the relationship between vendor management and outsourcing success (VM→OS) is. When partners' cooperativeness is higher, the focal firm could reduce the weight of vendor management activities for an equivalent or better outcome. This will help firms reduce operational expenses, making cooperativeness a cost free investment for outsourcing success. Though there are no sufficient evidences on moderating role of cooperativeness, Han *et al*., (2008) states that, cooperativeness positively intensifies the outsourcing relationship (p.40) while it is critical to maximize the strategic, economic and technological benefits for outsourcing (Lee, 2001, p.332). Likewise, the study confirms the value of cooperative relationship for outsourcing success.

To conclude the first part of objective 4, it is found that partnership quality is significant and negatively moderates the influence of vendor management activities on outsourcing success. In particular, higher level of trust and cooperativeness between the outsourcing partners help firms reduce attention on managing vendors (Bernardes, 2010; Uzzi, 1999). This will accumulate value for outsourcing by cutting down operational expenses of managing vendors, thereby increasing the positive gains of outsourcing.

02. The moderating effect of partnership quality (PQ) on the relationship between vendor's service performance (VSP) and outsourcing success (OS)

Hypotheses H6 and H7 (a,b,c) test on the moderation effect of partnership quality (PQ) to the relationship between vendors' service performance and outsourcing success (VSP→ OS).

Hypothesis 6: The relationship between vendor's service performance and outsourcing success is moderated by partnership quality.

Vendor's service performance (VSP) is identified as having a major and direct impact in services outsourcing success. This study proposes that partnership quality has a moderating effect on the aforementioned relationship. From the second order structural model analysis, it is found that the moderation effect of partnership quality on the relationship between vendors' service performance and outsourcing success is significant, positive and strong ($P<0.05$; $\beta= 0.790$). The model explained 96.9 per cent of variance (R^2 of the model in Figure 4.16). The initial model has 95 per cent variance, and due to the interaction effects (both PQ and CP), it has increased to 99 per cent.

Chakrabarty, Whitten and Green (2008) stated that, vendors' service quality and partnership quality are correlated and hence measuring the same underlying phenomena. According to the empirical findings of this study, a higher level of partnership quality between firms produces a higher level of vendors' performance (i.e. a higher level of service quality). Thus, these two variables are not measuring the same underlying phenomena but two different aspects of governance in resource exchange (Cook and Rice, 2003; Zafirovski, 2005) Perhaps, the difference might be the variations of operationalization of constructs. For example, Chakrabarty *et al*. (2008) applied

SERVQUAL scale to measure the service quality of vendors while this study used INDSERV scale.

As previously noted, partnership quality is relational, soft and a cost-free and it could enhance vendors' performance. This is due to the fact that partnership quality aspects help firms understand each other's requirements, strengths and weaknesses. For example, the strength of the relationship between vendor's service performance on outsourcing success (VSP → OS) increased from β= 0. 64 to β=0.790 due to the positive influence received from the partnership quality. Therefore, it facilitates successive reciprocal stimulus, which creates a constructive and passive working environment towards mutual reinforcement (Homans, 1961; Zafirovski, 2005; Ferguson *et al*., 2005). Figure 5.2 is the graphical representation of the moderating effect of partnership quality on the relationship between vendors' service performance and outsourcing success.

As shown in Figure 5.2, the strongest impact of vendors' service performance (VSP) on outsourcing success (OS) is reported from the high level of partnership quality (PQ). Thus, a high or medium level partnership quality is required for a higher level of vendors' performance which maximizes the benefits of outsourcing.

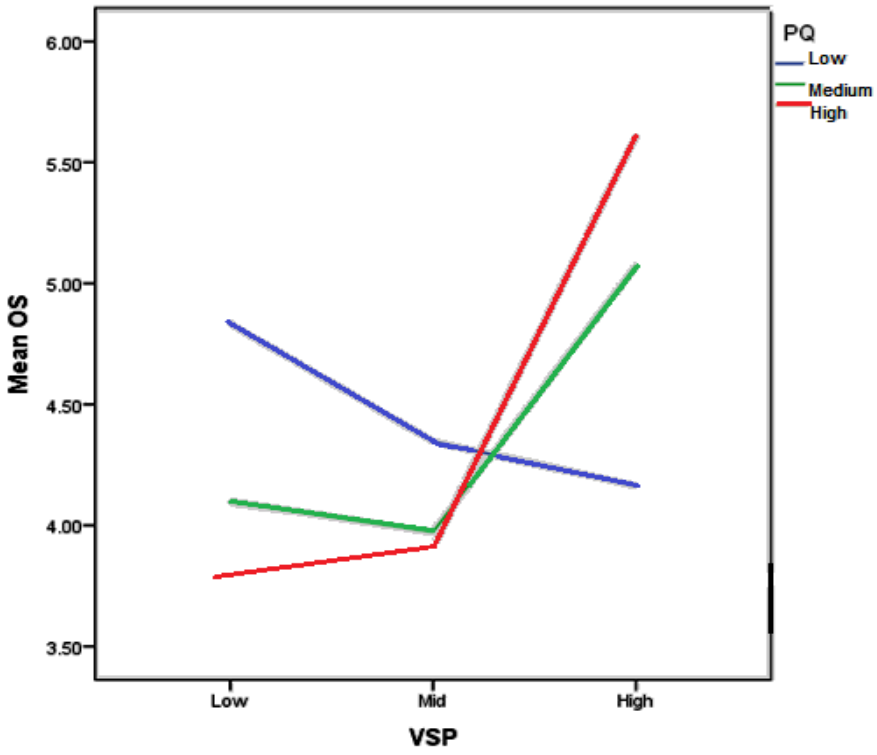


Figure 5.2: The relationship between vendors' service performance (VSP) on outsourcing success (OS) for different levels of partnership quality (PQ)

In relation to the factors/dimensions of partnership quality, all three of them (i.e. trust, commitment and cooperativeness) are significant ($p<0.05$). The highest contribution to the partnership quality is from cooperativeness ($\lambda=.96$, $R^2= 95.6\%$), followed by commitment ($\lambda=.88$, $R^2= 88.3\%$) and trust ($\lambda=.82$, $R^2= 82.5\%$). The study then attempts to verify the segregated impact of partnership quality dimensions on the relationship. Therefore, hypothesis 7a, 7b and 7c are tested. The following section discusses these hypotheses.

Hypothesis 7a: The relationship between vendor's service performance and outsourcing success is moderated by trust between partners in the partnership.

The above hypothesis (H7a) is accepted ($P<0.05$). This justifies the fact that, the relationship between vendor's service performance and outsourcing success is significantly and positively ($\beta=0.517$) moderated by the level of trust. Therefore, a higher level of trust between partners accumulates a value to the vendors' service performance for a higher level of outsourcing success.

The level of trust between the focal firm and the vendor is one of the main factors that affects collaborative planning effectiveness, and thereby, supply chain and firm performance (Lee, 2001; Petersen *et al*., 2005; Sun *et al*., 2008;Han *et al*., 2008; Lai *et al*., 2009; Lahiri *et al*., 2009). Therefore, this study verifies the knowledge previously established.

Hypothesis 7b: The relationship between vendor's service performance and outsourcing success is moderated by commitment of partners to the partnership.

The above hypothesis is accepted. The interaction effect is significant and positive ($P< 0.05$, $\beta= .247$). Thus, when the partners' commitment to the partnership is higher, the vendors contribute more to the partnership. For example, Medina-Mun˜oz and Garcı´a-Falco´n (2000) found that, commitment as one of the success factors of successful relationships between hotels and travel agencies. But, the moderating effect of commitment is not strong in comparison to trust. This study previously stated that, the commitment does not significantly influence vendor management activities (in hypothesis 5b). This implies that 'commitment to the partnership' is a motivational factor for the vendor but not for focal firms. Therefore, the focal firm must demonstrate

qualities of ‘commitment’. This will help firms to get maximum contribution of vendors.

Hypothesis 7c: The relationship between vendor’s service performance and outsourcing success is moderated by cooperativeness of partners to the partnership.

The empirical evidence indicates that the influence of vendor’s service performance on outsourcing success is moderated by ‘cooperativeness’ of partners to the partnership. The effect is significant and positive ($p<0.05$, $\beta= 0.414$). This implies that, the higher the cooperativeness between partners, the stronger the influence of vendor’s service performance on outsourcing success. Therefore, a higher level of cooperativeness enhances vendor’s contribution to the partnership. This could be perceived as a successful mutual reinforcement, whereby firms could get maximum capacity from vendors, while the vendors could benefit from the continuation of their contract with a collaborative partner (Lee, 2001; Han *et al*., 2008; Lacity *et al*., 2009; Lahiri *et al*., 2009).

To conclude the second part of objective 4, it can be surmised that partnership quality has a significant moderation effect on the relationship between vendors’ service performance and outsourcing success. Thus, partnership quality is an important relational investment that enhances the vendors’ performance in order to accomplish goals in services outsourcing.

The overall conclusion of objective 4 is that partnership quality is a relational investment, which indirectly enhances the performance of resource exchange in services outsourcing.

5.2.5 Objective 05:

To investigate the moderating effect of partners' compatibility on the relationships between 1) degree of outsourcing and outsourcing success, 2) vendor management capability and ooutsourcing success, and 3) vendors' service performance on outsourcing success.

From the perspective of resource dependency theory and social exchange theory, partners' compatibility is identified as a fundamental requirement of a collaborative business. It facilitates the level of dependency (Mohr and Spekman, 1994; Sun *et al*., 2002; Al-Natour and Cavusoglu, 2009) as well as it provides a platform for successful resource exchange (Homans, 1961; Whipple and Frankel, 2000). The service delivery is identified as a bi-directional and simultaneous process. As a result, there is less feasibility to assess compatibility characteristics of vendors in services prior to the contract execution. Therefore, the study imputed the effect of partners' compatibility as a moderator for managing the dependency and resource exchange in outsourcing success. Three hypotheses (i.e. H8, H9 and H10) are tested, corresponding to objective five.

Hypothesis 8: Partners' compatibility moderates the relationship between degree of outsourcing and outsourcing success.

Hypothesis 8 is rejected. Thus, it is accepted the fact that partners' compatibility does not moderate the influence of degree of outsourcing on outsourcing success ($P>0.05$). This may be due to the reason that in practice the level of compatibility determines degree of outsourcing. Thus, compatibility becomes an antecedent factor of degree of outsourcing rather than a moderator (Wadhwa and Ravindran, 2007; Liou and Chuang,

2010). Additionally, the study context may not be mature enough to perceive the strategic use of partners' compatibility to enhance the effectiveness of degree of outsourcing. It may viewed as a purposive strategic relationship (Mohr and Spekman,1994) in which the assessed compatibility in the early stage remains the same throughout the partnership. Additionally, selecting the most suitable vendor to determine degree of outsourcing involves conflicting criteria (Wadhwa and Ravindran, 2007) and hence assessment also might be invalid.

Hypothesis 9: Partners' compatibility (CP) moderates the relationship between vendor management capability (VM) and outsourcing success (OS).

This hypothesis is accepted. The moderation effects from partnership quality (PQ) and partners' compatibility (CP) are tested in a single model, and due to these interaction effects, the model variance (R^2) has increased from 95 per cent to 99 per cent. The beta coefficient value of -0.61 indicates that the moderation effect (i.e. VMmCP) is negative and fairly strong. This shows that a higher level of partners' compatibility could reduce the weight on vendor management activities for a higher level of outsourcing outcomes. Furthermore, when partners are incompatible, firms need to utilize vendor management activities to a greater extent. Figure 5.3 graphically shows the nature of moderation.

According to Figure 5.3, if the vendor is compatible with the firm to a greater extent, then the firm could get comparatively higher level of outsourcing success. This requires only a minimum level of vendor management activities. If the vendor is moderately or less compatible, firms need to conduct a sufficient amount of vendor management activities for better outsourcing outcomes. However, the strength of vendor management capability to outsourcing success (VM→OS) is 0.64 (β=0.64), and the strength of the relationship become -0.61(β=-0.61) with the moderation effect of

partners' compatibility. This offers a choice to focal firms. In particular, when the compatibility is low firms could pay more attention on vendor management activities, or as an option they could take necessary actions to enhance vendors' agility.

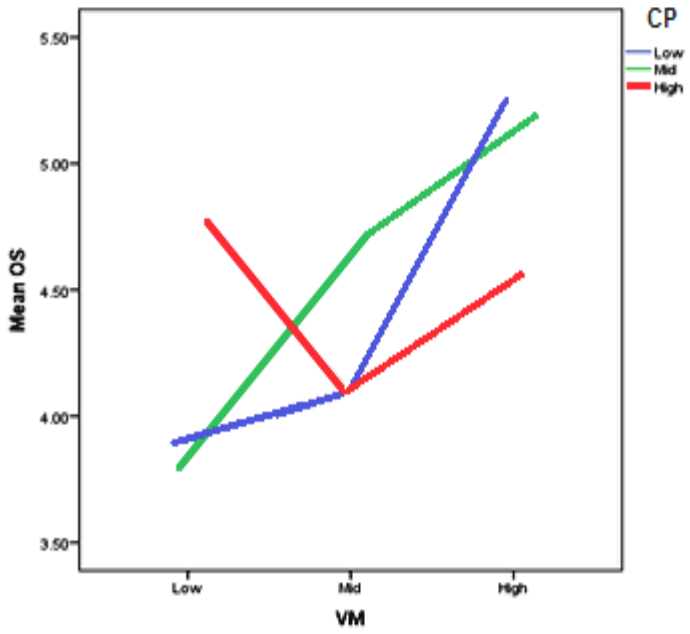


Figure 5.3: The relationship between vendor management capability (VM) and outsourcing success (OS) for different levels of partners' compatibility (CP)

However, resource dependence perspective acknowledges partners' compatibility as fundamental for higher level of mutual interdependence (Mohr and Spekman, 1994). The failure of one party in the dependency might affect the dependent's goals in the resource exchange process (Pfeffer and Salancik, 1978; Al-Natour and Cavusoglu, 2009). Selecting a compatible vendor is a challenge for service firms. Moreover, it is unfeasible to find a vendor who matches every desired criteria of a focal firm. Therefore, the firms could take the necessary actions in order to enhance vendors' compatibility, such as working as a team and communicating organisational culture and values. Additionally, maintaining a long-term partnership will help firms to understand each other's behaviours, strengths and weaknesses (Ogden, 2006).

Thereafter, the H10 is tested.

Hypothesis 10: Partners' compatibility moderates the relationship between vendor's service performance and outsourcing success.

The result indicates that partners' compatibility (CP) is a significant moderator ($P<0.05$, $\beta=0.235$) to the relationship between vendors' service performance (VSP) and outsourcing success (OS). The positive β coefficient implies that the higher the compatibility between partners, the higher the strength of the relationship between vendor's service performance and outsourcing success Therefore, a collaborative partnership with a compatible vendor brings value to the firm, as they could offer a quality services. Figure 5.4 demonstrates the nature of moderation effect.

Figure 5.4 clearly shows that the effect of vendor's service performance (VSP), especially from medium to high range on outsourcing success (OS), gets stronger when partners' compatibility (CP) increases. Accordingly, the vendors should try to be adjustable with the business partner in terms of understanding their business culture and required competencies (Liou and Chuang, 2010). Resource dependence theory describes this as a complementary dependency (Al-Natour and Cavusoglu, 2009; Hessels and Terjesen, 2010) which is crucial for successful partnership. This ensures the vendor's role of 'dual citizenship' in service delivery to end customer (Daityari *et al*., 2008).

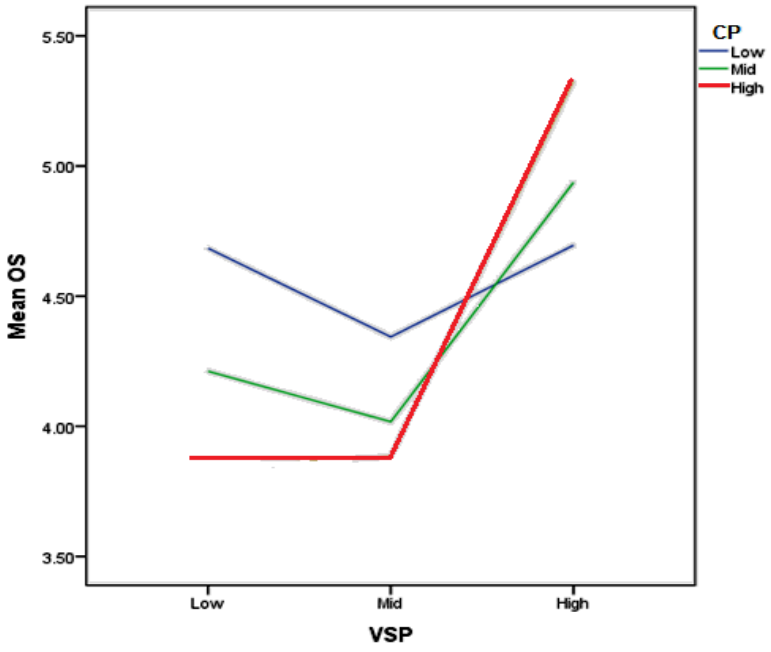


Figure 5.4: The relationship between vendors' service performance (VSP) and outsourcing success (OS) for different levels of compatibilities (CP).

From the resource dependency theoretical perspective, firms should adjust their operating boundaries for the purpose of improving performances (Kedia and Lahiri, 2007; Petersen *et al*., 2008). Not only the focal firm, the vendors should strive to adjust themselves with the focal firm for their survival. Among the compatibility requirements, understanding quality aspects (λ=0.92), flexibility requirements (λ=0.92), and operating philosophies (λ=.87) are the most important factors for successful outsourcing practice. Moreover, the study identifies the value of managing compatibility of partners in services outsourcing process, as it could accumulate values for all parties in the exchange process.

The above section has discussed all the five research objectives which derived from three research questions. The answers to the research question are next discussed as in terms of managerial implications of the study.

5.3 IMPLICATIONS OF THE STUDY

The primary aim of this study is to investigate the critical managerial factors affecting outsourcing success in the services sector. Service outsourcing is identified as a triadic relationship among service provider (i.e. focal firm), vendor and customer. However, the study focuses only on business-to-business (B2B) aspects. In reference to the epistemology and ontology of the research scope, the following three research questions are formulated.

1. To what extent does organisational dependency impact on the success of outsourcing in service firms?
2. What are the important factors in the exchange of resources that have an impact on outsourcing success?
3. What is the role of partners' compatibility in assuring the outsourcing success of the service sector?

Answering these three questions will provide a wide range of suggestions for primary stakeholders in the service outsourcing process. Thus, the following discussion on implications of the study follows these three questions.

5.3.1 Research Question 01:

To what extent does organisational dependency impact on the success of outsourcing in service firms?

Managing dependency determines the leverage power of the firm when firms depend on external resources (Pfeffer, 2003). Therefore, the degree of outsourcing is identified as the crucial decision in managing dependency for outsourcing success. It is associated

with two decisions; breadth and depth. As discussed in research objective 1, it is revealed that the degree of outsourcing is positively correlated with outsourcing success. This finding supports the knowledge previously established by Espino-Rodrı'guez and Padro´n-Robaina (2004) and Gilley and Rasheed (2000). Additionally, this study observes that each component of degree of outsourcing (i.e. breadth and depth) does not equally affect outsourcing performance. It has an optimal point (Kotabe and Mol, 2009). Subsequent post-hoc analysis found that only breadth is significantly associated with outsourcing success. It also reveals that high level of breadth and medium level of depth category reported the highest outsourcing success. Based on these facts, the following insights/recommendations on managing dependency for outsourcing success are provided.

The higher the degree of outsourcing, the more the chances the firms could reach their performance objectives in outsourcing. For instance, firms could focus more on activities performed with internal resources (Kedia and Lahiri, 2007; Chi, 1994; Venkatesen, 1992, Arnold, 2000; Jean *et al*,. 2008). Meanwhile, they have to monitor outsourced functions in order to make sure that the customer is satisfied at the end (Lee, 2001, Chen and Paulraj, 2004). Dependency primarily relies on the number of activities outsourced, rather than the power assigned to vendors for each activity. Therefore, a careful examination on the resource capability of the firm and ascertaining required resource capabilities of potential vendors' needs to be done prior to the formal execution of the contract (Ozcelik and Altinkemer, 2009; Sampson, 2000). However, from the resource dependence perspective, the breadth fundamentally depends on the focal firm's resource capability. Though, there is no significant impact of depth of outsourcing on outsourcing performance, it can be determined by the vendor's resource

capability. For example, the focal firm's desired level of depth can be altered with vendor's resource capability. However, Wadhwa and Ravindran (2007) depicted an overview of outsourcing process (Fig. 01, p. 3726), but there is no link to revise the activities to be outsourced based on the assessments of potential vendors' resource capability and compatibility. This link is necessary for services (Kannan and Tan, 2004; Sun *et al*., 2002), as it helps to outline the intensity of power assigned to the vendor (i.e. depth).

In conclusion, the degree of outsourcing is perceived as a strategic tool of 'altering organisational interdependency' through collaborations (Pfeffer and Salancik, 1978). The results, however, demonstrated that only breadth of outsourcing influences the outsourcing success. As Gilley and Rasheed (2000) state outsourcing strategies vary greatly in their breadth (p.768). Therefore, the firm should identify as many as possible functions that could be outsourced within their scope of outsourcing and resource capability (Ozcelik and Altinkemer, 2009). The vendor's resource capability perhaps becomes the key determinant of depth of outsourcing and it should be kept at a moderate level for better outcomes. This further confirms that focal firm needs to act as a bridge between vendor and customer in the service triad (Li and Choi, 2009). Likewise, the study identifies the implications and strategic importance of managing breadth and depth for the management of dependency in outsourcing.

5.3.2 Research Question 02:

What are the important factors in the exchange of resources that have an impact on outsourcing success?

The resource exchange process in outsourcing is supported by two governance structures. Contractual governance is associated with the accomplishment of legal compliances in outsourcing contract, and relational governance performs as a result of reciprocity of collaborative business (Ferguson *et al*., 2005; Zafirovski, 2005; Cook and Rice, 2003). The findings of this study prove that outsourcing success depends on the successful contractual governance. From the perspective of the social exchange theory, this study identifies each party's responsibility in service outsourcing. The bilateral (Cui *et al.,* 2009) and direct form of service delivery (Li and Choi, 2009) has highlighted a dual responsibility of outsourcing. Accordingly, the empirical evidences confirm that the focal firm should carry out sufficient vendor management activities, while vendors should strive to deliver the agreed service performance, as both are equally important. This further confirms that, exchange activities of each party in the exchange process are 'enforceable from the economic perspectives' (Lee, 2001, p. 325).

However, as far as the study context is concerned, the most important vendor management activities are: having a systematic process to monitor vendors, evaluate vendors' performance with specified criteria and having systematic processes to develop vendors' capabilities.

With respect to the vendors' service performance, hard process quality (HQ) is the most important aspect, followed by output quality (OQ). The prominent factors in hard process quality and output quality are: stay in budget, meet deadlines, look at details to perform a task, understand focal firm needs appropriately, be creative in offering

services, reach objectives in the contract and contribute to the focal firm's image. These aspects are also important to vendors, as they are bound to meet and complement the focal firm's needs (Wadhwa and Ravindran, 2007, p. 3725). This could guarantee the continuation of the current outsourcing contract, and thereby ensure the survival in the competitive vendor market.

Next, the role of relational governance in the exchange process is verified. This is denoted and measured as partnership quality. As previous researchers have highlighted (e.g. Lee, 2001; Han *et al*., 2008;Lahiri *et al*., 2009; Lai *et al*., 2009; Li and Choi, 2009; Bernardes, 2010), relational governance is recognised as a social capital. It facilitates the closing of 'structural hole', and enhances the performance of outsourcing. Accordingly, the study tested the moderating impact of partnership quality on the success of contractual governance. A higher level of partnership quality guaranteed a higher level of contractual governance performance on outsourcing success. Based on that, the study outlined the following recommendations to firms and vendors in the service sector.

In a more abstract point of view, both the focal firm and the vendor should pay attention on social capital investments (Bernardes, 2010), as it accumulates greater value to the resource exchange process. As Lam and Han (2005) explained the aim of outsourcing is to squeeze the operational expenses. This will assist firms in reducing their operational expenses on outsourcing, while enhancing the vendor's service performance in bilateral service delivery.

As far as social capital/partnership quality characteristics are concerned, trust between partners' is the most prominent factor (Dyer, 1997; Marshall *et al*., 2007; Cui *et al*., 2009). Higher-level of trust maintained by the partners could reduce the rigid vendor

management procedures, and thereby focal firm managers could reduce cost, time and efforts in managing vendors. Instead, they could focus on other managerial tasks (Han *et al*., 2008; Lee, 2001; Kroes and Ghosh, 2009). Furthermore, a higher level of trust strengthens the vendors' service performance towards outsourcing success. This is perhaps due to the favourable and comfortable working environment generated through trust.

'*As long as the parties keep their commitments, the relationship can last for a long time'* (Wasti *et al*., 2006, p.951). Kannan and Tan (2004) also highlighted the importance of strategic commitment from vendor for successful partnership. Thus, commitment is another important factor in relational governance. Based on the empirical evidences of this study a higher level of commitment facilitates in obtaining a greater level of vendor's performance. Hence, the focal firm should demonstrate higher level of commitment to the partnership. However, vendors should be careful enough to take into account other aspects of relational governance, as their commitment alone is incapable of adding value to the outsourcing success.

In fact, the cooperativeness is verified as one of the most important factors in relational governance as well. Both parties are motivated by the cooperativeness (reciprocity), which they have received from the other party. As a result, the vendors will be more dedicated to their responsibilities, while the focal firm could reduce governance by contract for better outcomes. Nevertheless, Wasti *et al*. (2006) found that, cooperation is important for strategic partnership but it not necessary for exchange (i.e. information exchange). The investments on social capital (i.e. partnership quality) hence produce value for resource exchange process.

To summarize the important factors in the resource exchange process, each party should adhere to their own responsibilities for mutual benefits and survival. Both parties must also strive to maintain a higher level of trust, commitment and cooperativeness, as these elements could accumulate value for outcomes of outsourcing, at no cost.

Wasti *et al*. (2006) state that, a '*social climate can be positive even without mutual trust and cooperation and as long as the parties keep their commitments'* (p. 951). Despite the differences of defining constructs, finding of the current research is the opposite. To the perspective of focal firm, trust and cooperativeness become fundamentals of positive social climate while commitment is not.

Likewise, this study identifies the strategic implicational values of contractual governance and relational governance in the resource exchange process of services outsourcing.

5.3.3 Research Question 03:

What is the role of partners' compatibility in assuring the outsourcing success of the service sector?

From the perspective of resource dependence and social exchange theories, it is said that partners' compatibility is fundamental for the success of interdependence and exchange. Therefore, this study investigates the role of compatibility of vendors with the focal firm in the context of outsourcing.

A compatible partner enhances the complementary dependency (Al-Natour and Cavusoglu, 2009; Hessels and Terjesen, 2010) and thereby '*the success of outsourcing*

activity is highly dependent on successful selection of vendors' (Wadhwa and Ravindran, 2007, p. 3735). The dependency in outsourcing is related with the degree of outsourcing and it should be supported by complementary dependency. However, the empirical evidences show that the level of partners' compatibility (i.e. level of complementary dependency) does not change the impact of the degree of outsourcing on the outsourcing success.

In relation to the contractual governance, a higher-level compatibility could result in a higher-level vendors' performance. Besides, when partners are compatible, the focal firm could reduce the focus on vendor management activities for better outcomes. However, based on the impact of partners' compatibility to the contractual governance, the study outlined the following recommendations to firms and vendors in the service sector.

Firstly, the focal firm should evaluate opportunities to enhance vendors' compatibility. The best option is cost-free techniques such as 'work as a team', 'communicating operating philosophies and values'. Otherwise, they could also utilize techniques that may incur a cost. Chakrabarty *et al*. (2008) viewed these strategies as a socialization process which could be used for improve partnership quality. As a result, a higher level partnership quality also assists to enhance the interaction of partners and understand each other's culture (Daityari *et al*., 2008; Kannan and Tan, 2004). Nevertheless, the programs which focus on to enhance agility between partners are not equally important for all types of vendors. The criticality of the function outsourced, the level of interaction between the vendor and the customer in service delivery and vendor-switching cost may also determine the necessity of vendor training and development.

Likewise, the focal firms have several opportunities to select the best management alternative.

Next, the vendors should be aware of the importance of their agility with the focal firm, as it is crucial for their survival (Wasti *et al*., 2006). Besides, vendors may get an opportunity to work with the focal firm independently, or at a minimum level interference (i.e. with less vendor management activities), if they could adjust. This will help them to perform well in their transferred role of vendor to service provider in process of service delivery (Li and Choi, 2009; Donada and Nogatchewsky, 2009; Shamdasani and Sheth, 1994).

As noted in section 5.2, partnership quality could accumulate value to each party in the service-outsourcing context. Apart from that, vendors' compatibility with the focal firm plays a major role too. The magnitude of impact receives from partnership quality and partners' compatibility on contractual governance elements, is different. More importantly, the impact of partnership quality is higher for vendors' service performance (VSP) on outsourcing success, than it is for vendor management capability (VM) on outsourcing success. Accordingly, partnership quality is more important to intensify the contribution received from the vendor than its ability to reduce operational expenses of vendor management activities. With regards to partners' compatibility, the opposite is observed. The influence of partners' compatibility is higher for vendor management capability (VM) on outsourcing success than it for vendors' service performance (VSP) on outsourcing success. Therefore, partners' compatibility is more important to reduce operational expenses of vendor management activities than the value accretion for vendors' service performance.

The previous section answers all three research questions of this study. Simultaneously, several managerial implications discovered during the course of this study are also outlined. The next section therefore explicates the theoretical contributions and summarizes the managerial contributions of the study.

5.4 CONTRIBUTIONS OF THE STUDY

5.4.1 Theoretical Contribution

The current study integrates the knowledge of the supply chain management and service management in deriving the theoretical framework. Meanwhile, the framework addresses the specific nature of the service supply chain with respect to outsourcing (i.e. real-time, bilateral and direct). Despite the focal firm's responsibility, this study assigned a co- responsibility to the vendor, creating a dual responsibility of outsourcing. Therefore, the framework of the study deviates from other conventional frameworks in the same research area. However, subsequent empirical investigations have confirmed the value of direct dual responsibility in services outsourcing.

The current study also uncovers numerous novel ideas to the theory and practice. As noted in Chapter 1, this study specifically accumulates knowledge to the area of services outsourcing in three ways.

First, this study attempts to answer the 'neglected aspects' of previous studies. Accordingly, the impact of partners' compatibility on organisational dependency and resource exchange is tested. The study found that, only the performance of resource exchange is moderated by partners' compatibility, while dependency is not. This indicates that the impact of 'degree of outsourcing' on 'outsourcing success' is not

varied upon the level of partners' compatibility. As a result, focal firms prefer to maintain the level of dependency stated in the contract throughout the contractual period. However, the findings support the conception that, the contractual governance could better perform when the partners' compatibility is high. Accordingly, the study proves that the effectiveness of contractual governance is mitigated by the level of compatibility between partners.

Secondly, this study focuses on aspect(s) that have not been empirically tested before. Previous studies compounded the notion of 'degree of outsourcing', and identified the type of activities suitable for outsourcing (Espino-Rodrı´guez and Padro´n-Robaina, 2005a; Kotabe and Murray, 2004; Quinn and Hilmer, 1994). Alternatively, this study tested the impact of different levels of breadth and levels of depth of outsourcing on outsourcing success. The purpose is to identify the important aspect(s) in the degree of outsourcing for its success, and consequently, only breadth is identified as important. Perhaps, the reason is that breadth may be contingent upon the resource capability of the focal firm. The latent meaning of this is aligned with the fundamental theoretical insight provided by the resource dependency theory. As such, when firms lack the required resources; they tend to establish relationships with other firms in order to strengthen their resource base (Pfeffer, 2003). Additionally, high breadth and medium depth jointly reported the optimum level outsourcing success. This signals that there is a saturation point for the degree of outsourcing. Due to the influence of depth, the relationship between degree of outsourcing and outsourcing performance could be non-linear.

Next, the moderating effect of partnership quality is tested with respect to the variables that needed empirical verification. The empirical evidence proves that partnership quality moderates the impact of contractual governance. All aspects of partnership

quality (i.e. trust, commitment and cooperativeness) are equally important in moderating the influence of vendors' service performance on outsourcing success. As far as the influence from each dimension is concerned, 'partners' commitment' is not a significant factor that influences the effectiveness of vendor management activities. This finding is considered a novelty, and it adds substantial value to the practice. The empirical evidences also confirm that both relational and contractual governance are important to ensure the success of resource exchange and relational governance adds value to contractual governance.

Thirdly, this study addressed 'incommensurate' issues in the corresponding research domain. Consequently, the study applied the resource dependency theory to oversee the latent purpose of outsourcing. This opened up the acquisition of any source of outcomes, explained by many theories, such as transaction cost economies, resource based view, and knowledge base. The resource exchange is perceived as a social phenomenon, due to the very nature of service supply chain in outsourcing. Thus, the social exchange theory is also applied to oversee the exchange process. Both these theories could produce a unique conceptual framework in determining outsourcing success. As a whole, these theories help to oversee context without presumptions of purpose or outcomes of outsourcing. Eventually, the application of these two theories confirms the detachment of the researcher from the research, which is a fundamental ontological assumption of positivistic research domain.

Section 5.3 discussed managerial implications of the study corresponding to each research question. Thus, the following section only provides a summary of managerial contributions of the study.

5.4.2 Managerial Contribution.

As far as the internal business operations are concerned, the most critical challenge is reducing operational expenses in order to increase profitability (Lam and Han, 2005). Outsourcing helps firms to cope with the aforementioned challenge. This study explains some strategies that help firms increase their business productivity and profitability within the outsourcing context. In addition to that, the developed framework can be used as a guide to plan for outsourcing process in the services sector, such as determining the breadth of outsourcing for the appropriate level of dependency, understand the dual responsibility in contractual governance, and the value of relational governance as a strategy to enhance overall outsourcing performance. The operational level contributions have been discussed in detail in Section 5.3.

The strategic value of the model developed by the study is its ability to be used as an instrument to evaluate the success of outsourcing effort in services sectors. In particular, the level of breadth and level of depth, adequacy of vendor management tasks, and the level of vendors' contribution on outsourcing success can be assessed. Moreover, firms can understand the level of compatibility of each vendor, and the level of partnership quality they should maintain. This will help firms to improve the outcomes of outsourcing. Implementing programs to enhance vendors' agility (Daityari *et al*., 2008) and increase investment on social capital are some examples that bring about such improvements.

Furthermore, the vendors' market is also competitive; hence they have to strive for survival. The INDSERV scale provides general guidelines for vendors about the expectations of the focal firm in business-to-business context (Gounaris (2005a). But as far as the study context is concerned, not all elements are equally important and valid.

Accordingly, vendors in the study context can focus more on the refined elements of INDSERV scale. Next, the vendors in the domestic market have to demonstrate an appropriate level of cooperativeness and trust, in addition to commitment. This will help them work with the firm rather than work to the firm. These aspects are also creating favourable and comfortable working environment. The vendors are required to adjust their business culture with the focal firm's culture. They should be able to align with competencies required by the focal firm as well. This is effective and practical for partners who are attached for long-term contracts, sole vendors, and for situations in which switching cost of vendor is high.

Accordingly, the model developed by this study suggests methods for improving flexibility of outsourcing effort for mutual benefit and survival. This is the first study on the services sector outsourcing in Sri Lanka which focuses on banks and hotels. Therefore, the research findings can be directly endorsed in the Sri Lankan banking and hotel sector.

5.5 LIMITATION AND DIRECTION FOR FUTURE RESEARCH

Researches in social science are always curtailed by various limitations, such as the nature and the complexity of social phenomena, time, and costs. Firstly, this study was unable to examine the impact of outsourcing in a business-to-customer (B2C) context. Thus, future studies could combine the customer aspects to the model. Another limitation of the present study is the exclusion of the impact of resource capabilities of both firms (i.e. focal firm and vendor) in determining interdependency. It is suspected that the focal firm's resource capability may affect breadth, while vendor's resource

capability might impact depth. Thus, it can be suggested that future research should verify the impact of both party's resource capability on breadth and depth.

Next, the present study has identified the need to localize the INDSERV scale for developing countries, and future research could perform empirical validation of INDSERV in different study contexts. Meanwhile, exploratory studies will help identify unique factors for a different context. This prompts the recommendation of the use of localized scales when the research context is considerably different from the context where the scale originated from.

Furthermore, this research can be further improved by including external factors affecting the outsourcing success in the services sector, such as market uncertainty (Gilley and Rasheed, 2000; Espino-Rodrı´guez and Padro´n-Robaina, 2004), market thickness (Dyer, 1997; Li and Choi, 2009; De Vita *et al*., 2010) and anticipated rivalry (Lahiri *et al*., 2009).

In terms of methodology, the current study applied pure positivistic research methodology (only self-administered questionnaire). In the future, this can be tested in neo-positivistic research domain of mix method (qualitative study followed by a quantitative method or vice versa). This might help uncover the reasons for certain issues mentioned above. Additionally, there is a possibility to investigate other types of collaborative business amalgamations (i.e. mergers, franchise, alliances) with minor adjustments in construct definitions.

5.6 CONCLUSION

One of the main conclusions of this research is that the resource dependency theory is a suitable starting point to examine outsourcing. The findings also confirm that the social exchange theory could better interpret the unique characteristics of services outsourcing.

This study reveals the importance of the degree of outsourcing, vendor management capability and vendors' service performance in explaining outsourcing success in the services context. The findings support the notion that contractual governance performs better with relational governance. Furthermore, as compatible partners could contribute more to the contractual governance, both vendor and the focal firm should strive to be as agile as possible to each other.

This study contributes to the body of knowledge, as it provides validated explanatory dimensions, which constitute the measurement constructs for outsourcing success in services sector using structural equation modelling. Accordingly, the model identified critical managerial factors in services outsourcing, and those factors altogether explain more than 95 per cent variance of the outsourcing success. Moreover, several practical implications which outlined in this study are invaluable for planning and assessing outsourcing function, and its success. Finally, the current study could well serve as a foundation research for services sector supply chain as it provides future avenues for extensive research prospects.

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APPENDICES

APPENDIX A: QUESTIONNAIRE FOR PILOT STUDY

Dear Respondents,

I am a PhD candidate from University of Malaya, Malaysia under the supervision of Associate Professor Dr. Ghazali Musa. We are conducting a survey on outsourcing practices in service organizations. The purpose of this study is to identify factors that influence outsourcing success in the organizations. This survey is preferably answered by the person who is in charge of outsourcing in your organization.

This questionnaire enquires you to select information about outsourcing practices, responsibilities and outcomes within your firm. We would be grateful if you could spend 15-20 minutes of your time to complete this questionnaire. There is no right or wrong answer to the questions and please answer all of them.

Note that all your answers to the questions will be treated as **strictly confidential**. They will be analyzed in aggregate form, and no individual firm will be disclosed to anyone other than the researchers. Should you have any questions, do not hesitate to contact us at the following addresses.

Thank you very much for you co-operation.

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Questionnaire

Section A: Instructions

- This section identifies the current level of outsourcing in your organization.
- Please refer to the scale provided below to answer Part 1 and please tick (√) the answer in the appropriate box.

Not outsourced at all	Outsourced to a limited extent	Outsourced to a moderate extent	Outsourced to a greater extent	Totally outsourced
1	2	3	4	5

Part 1: BANKING

Your company's current level **of outsourcing** in the following function(s)

Not outsourced at all ⟷ **Outsourced to a very great extent**

Banking Organizations : Activity /Function	**1**	**2**	**3**	**4**	**5**
1. ATM					
2. Card processing					
3. Internal auditing					
4. Debt collection					
5. Account processing					
6. Human Resource management (HR)					
7. Information technology (IT)					
8. Sales/ Marketing					
Others (Please specify)					

Part 1: Your Company's current level **of outsourcing** in the following function(s)

Not outsourced at all ⟷ **Outsourced to a very great extent**

Hotel Organizations : Activity /Function	**1**	**2**	**3**	**4**	**5**
1. Reception					
2. Reservation					
3. Purchasing and receiving					
4. Common area cleaning					
5. Room cleaning					
6. Laundry					
7. Swimming pool maintenance					
8. Gardening services					
9. Bars					
10. Restaurants					
11. Kitchen operations					
12. General maintenance					
13. Leisure activities					
14. Administration					
15. Employee Training					
16. Personnel selection					
17. Information systems					
18. Sales activities					
19. Promotion and advertising					
20. Safety and Security					
Others (Please specify)					

Section B : Instructions

Part 2, 3 and 4 require you to response to the statements.

Please tick **(X)** your answer in the appropriate box according to your level agreement to the statements.

Part 2: This part evaluates the **vendor management capability** of your firm.

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
VM1	We select only qualified suppliers/vendors with satisfactory assessment of selection criteria							
VM2	We have systematic process to monitor suppliers/vendors							
VM3	We evaluate suppliers'/vendors' performance with specified criteria							
VM4	We have systematic process in the development of suppliers'/vendors' capabilities. (e.g. Training programs, financial assistance, technological assistance, etc.)							
VM5	We have the ability to compensate/ pay supplier/vendor fees according to the contract							

Part 3: The following statements describe the **service quality and performance of the supplier/vendor(s)**. Please tick **(X)** your answer in the appropriate answer to each statement.

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
PTQ 1	Our suppliers /vendors have the ability to perform all tasks specified in the contract							
PTQ 2	Our suppliers/vendors have the required human resource							
PTQ 3	Our suppliers /vendors have the required management philosophy							
PTQ 4	Our suppliers/vendors have the required facilities							
PTQ 5	Our suppliers'/vendors' labour turn-over rate is low							
PTQ 6	Our suppliers/vendors work as a network with partners							
HQ 1	Our suppliers / vendors maintain time schedules							
HQ 2	Our suppliers /vendors perform within the agreed budget							
HQ 3	Our suppliers/vendors meet deadlines							
HQ 4	Our suppliers/vendors seek more information before proceed any task							
HQ 5	Our suppliers/vendors understand our needs							
SQ 1	Our suppliers/vendors accept terms and conditions in the contract enthusiastically							
SQ 2	Our suppliers/vendors listen to our problems							
SQ 3	Our suppliers/vendors are open to suggestions/ideas							
SQ 4	Our suppliers/vendors have pleasant personality							
SQ 5	Our suppliers/vendors have constructive arguments							
SQ 6	Our suppliers / vendors always care about our interests							
OQ 1	Our suppliers'/vendors' performances enable us to reach our objectives in outsourcing							
OQ 2	Our suppliers'/vendors' contributions to our business are remarkable							
OQ 3	Our suppliers / vendors add value to our image							
OQ 4	Our suppliers/vendors are creative in their job							
OQ 5	Our suppliers /vendors are consistent with our strategy							

Part 4: This part measures the **quality of relationship** maintain by your organization and your suppliers / vendors in outsourcing.

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree
COP 1	We share information that affects each other's business					
COP 2	We share business knowledge on core business processes					
COP 3	We share benefits and risk of the business					
COP 4	We make decisions for business objectives and directions together.					
COP 5	We solve most of the problems together					
COP 6	We are willing to comply with each other's requests					
COP 7	We are keen in solving each other's problems					
CPO 8	We are cooperative in conducting business					
PQT 1	We always take decisions which are favourable for both of us					
PQT 2	We assist each other in performing business					
PQT 3	We are sincere at all times					
PQT 4	We have friendly relationship					
PQC 1	We have strong relationship					
PQC 2	We do our best to maintain a good relationship					
PQC 3	We always try to keep each other's promises					
PQC 4	We are willing to continue the relationship					

Part 5:

This part identifies the **match/fit between business partners** in outsourcing. i.e. your firm and supplier. Please tick **(X)** your answer in the appropriate box.

		Not at all	To limited extent	To Moderate extent	To somewhat large extent	To great extent
CPC 1	Your firm and your vendor firm (s) have **similar operating philosophies**					
CPC 2	Your firm and your vendor firm(s) have a **similar management style.**					
CPC 3	Your firm and your vendor firm(s) have **complementary goals**					
CPP 1	Your firm and your vendor firm(s) consider '**cost'** as an important dimension in doing business					
CPP 2	Your firm and your vendor firm(s) consider **'quality'** as an important dimension in doing business					
CPP 3	Your firm and your vendor firm consider (s) '**delivery time'** as an important dimension in doing business					
CPP 4	Your firm and your vendor firm(s) consider '**flexible reaction to demand'** as an important dimension in doing business					

Part 6: This part evaluates the **success of outsourcing** in your organization. Please tick **(X)** your answer in the appropriate box.

Outsourcing significantly contributes to …		**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neutral**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
OST 1	Profitability							
OST 2	the reduction in total cost							
OST 3	Increase productivity / Occupancy rate							
OST 4	quality improvements							
OSS 1	greater focus on core business							
OSS 2	the acquisition of expertise knowledge							
OSS 3	competitive advantage							
OSS 4	reduce the business risk							
OSS 5	innovations							
	My organization is…							
OSB 1	satisfied with the overall relationship with suppliers							
OSB 2	willing to continue the contract with existing suppliers							
OSB 3	willing to outsource activities which are currently in-sourced							

Section C: General information about your organization

1. Name of your organization: ……..
2. Type of your organization (please -**X-** the answer)

Bank		Hotel	
Government	◯	1 Star	◯
Semi –Government	◯	2 Star	◯
Private	◯	3 Star	◯
Foreign	◯	4 Star	◯
Other (please specify)		5 Star	◯
		Above 5 Star (5+)	◯

3. Number of employees in the organization (approximate figure)……..
4. Number of branches in Island wide (in 2010)……
5. How long has your organization been outsourcing (number of years) ……
6. Please provide your contact details if you are interested in research findings

Your name :

Designation :

E-mail :

Tel: No. :

THANK YOU VERY MUCH

FOR YOUR VALUABLE TIME AND RESPONSES

APPENDIX B: QUESTIONNAIRE FOR FINAL DATA COLLECTION.

Dear Respondents,

I am a PhD candidate from University of Malaya, Malaysia under the supervision of Associate Professor Dr. Ghazali Musa. We are conducting a survey on outsourcing practices in service organizations. The purpose of this study is to identify factors that influence outsourcing success in the organizations. This survey is preferably answered by the person who is in charge of outsourcing in your organization.

This questionnaire enquires you to select information about outsourcing practices, responsibilities and outcomes within your firm. We would be grateful if you could spend 15-20 minutes of your time to complete this questionnaire. There is no right or wrong answer to the questions and please answer all of them.

Note that all your answers to the questions will be treated as **strictly confidential**. They will be analyzed in aggregate form, and no individual firm will be disclosed to anyone other than the researchers. Should you have any questions, do not hesitate to contact us at the following addresses.

Thank you very much for you co-operation.

Nilakshi W. K Galahitiyawe
PhD Candidate
Faculty of Business and Accountancy
University of Malaya
Malaysia
nilakshi@sjp.ac.lk / nilakshi.g@gmail.com
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Associate Professor Dr. Ghazali Musa
Deputy Dean (Research and Development)
Faculty of Business and Accountancy
University of Malaya
Malaysia.
ghaz8zz@gmail.com

Questionnaire

Section A: Instructions

- This section identifies the current level of outsourcing in your organization.
- Please refer to the scale provided below to answer Part 1 and please tick (√) the answer in the appropriate box.

Not Outsourced at all	Outsourced to a limited extent	Outsourced to a moderate Extent	Outsourced to a greater extent	Totally Outsourced
1	2	3	4	5

Part 1: BANKING

Your company's current level **of outsourcing** in the following function(s)

Not outsourced at all ⟷ **Outsourced to a very great extent**

Banking Organizations : Activity /Function	1	2	3	4	5
1. ATM					
2. Card processing					
3. Internal auditing					
4. Debt collection					
5. Legal affaires					
6. Account processing					
7. Personnel selection					
8. Training (HR)					
9. Information technology (IT)					
10. Customer service					
11. Advertising &promotion					
12. Corporate printing					
13. Maintenance (cleaning, interior décor)					

Part 1: Your Company's current level **of outsourcing** in the following function(s)

Not outsourced at all ⟷ **Outsourced to a very great extent**

Hotel Organizations : Activity /Function	1	2	3	4	5
1. Reception					
2. Reservation					
3. Laundry					
4. Housekeeping					
5. Food &beverages supplies					
6. Restaurants					
7. Bars					
8. Kitchen operations					
9. Technical services (repair resources)					
10. Swimming pool maintenance					
11. Gardening services					
12. Administration					
13. Training					
14. Personnel selection					
15. Information systems &technology					
16. Leisure activities (e.g. Tour packages, entertainment activities, etc.)					
17. Security and surveillance					
18. Sales/ Marketing					

Section B : Instructions

Part 2, 3 and 4 require you to response to the statements.

Please tick **(X)** your answer in the appropriate box according to your level agreement to the statements.

Part 2: This part evaluates the **vendor management capability** of your firm.

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
VM1	We select only qualified suppliers/vendors with satisfactory assessment of selection criteria							
VM2	We have systematic process to monitor suppliers/vendors							
VM3	We evaluate suppliers'/vendors' performance with specified criteria							
VM4	We have systematic process in the development of suppliers'/vendors' capabilities. (e.g. Training programs, financial assistance, technological assistance, etc.)							
VM5	We have the ability to compensate/ pay supplier/vendor fees according to the contract							

Part 3: The following statements describe the **service quality and performance of the supplier/vendor(s)**. Please tick **(X)** your answer in the appropriate answer to each statement.

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
PTQ 1	Our suppliers /vendors have the ability to perform all tasks specified in the contract							
PTQ 2	Our suppliers/vendors have the required human resource							
PTQ 5	Our suppliers'/vendors' labour turn-over rate is low							
PTQ 6	Our suppliers/vendors work as a network with partners							
HQ 1	Our suppliers / vendors maintain time schedules							
HQ 2	Our suppliers /vendors perform within the agreed budget							
HQ 3	Our suppliers/vendor meet deadlines							
HQ 4	Our suppliers/vendors seek more information before proceed any task							
HQ 5	Our suppliers/vendors understand our needs							
SQ 1	Our suppliers/vendors accept terms and conditions in the contract enthusiastically							
SQ 2	Our suppliers/vendors listen to our problems							
SQ 3	Our suppliers/vendors are open to suggestions/ideas							
SQ 4	Our suppliers/vendors have pleasant personality							
SQ 5	Our suppliers/vendors have constructive arguments							
SQ 6	Our suppliers / vendors always care about our interests							
OQ 1	Our suppliers'/vendors' performances enable us to reach our objectives in outsourcing							
OQ 2	Our suppliers'/vendors' contributions to our business are remarkable							
OQ 3	Our suppliers / vendors add value to our image							
OQ 4	Our suppliers/vendors are creative in their job							
OQ 5	Our suppliers /vendors are consistent with our strategy							

Part 4: This part measures the **quality of relationship** maintain by your organization and your suppliers / vendors in outsourcing.

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree
COP 1	We share information that affects each other's business						
COP 2	We share business knowledge on core business processes						
COP 3	We share benefits and risk of the business						
COP 4	We make decisions for business objectives and directions together.						
COP 5	We solve most of the problems together						
COP 6	We are willing to comply with each other's requests						
COP 7	We are keen in solving each other's problems						
CPO 8	We are cooperative in conducting business						
PQT 1	We always take decisions which are favourable for both of us						
PQT 2	We assist each other in performing business						
PQT 3	We are sincere at all times						
PQT 4	We have friendly relationship						
PQC 1	We have strong relationship						
PQC 2	We do our best to maintain a good relationship						
PQC 3	We always try to keep each other's promises						
PQC 4	We are willing to continue the relationship						

Part 5:

This part identifies the match/fit between business partners in outsourcing. i.e. your firm and supplier. Please tick (X) your answer in the appropriate box.

		Not at all	To limited extent	To Moderate extent	To some what large extent	To a great extent
CPC 1	Your firm and your vendor firm (s) have similar operating philosophies					
CPC 2	Your firm and your vendor firm(s) have a similar management style.					
CPC 3	Your firm and your vendor firm(s) have complementary goals					
CPP 1	Your firm and your vendor firm(s) consider 'cost' as an important dimension in doing business					
CPP 2	Your firm and your vendor firm(s) consider 'quality' as an important dimension in doing business					
CPP 3	Your firm and your vendor firm consider (s) 'delivery time' as an important dimension in doing business					
CPP 4	Your firm and your vendor firm(s) consider 'flexible reaction to demand' as an important dimension in doing business					

Part 6: This part evaluates the **success of outsourcing** in your organization.

Please tick **(X)** your answer in the appropriate box.

Outsourcing significantly contributes to …		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
OST 1	profitability							
OST 2	the reduction in total cost							
OST 3	Increase productivity / Occupancy rate							
OST 4	quality improvements							
OSS 1	greater focus on core business							
OSS 2	the acquisition of expertise knowledge							
OSS 3	competitive advantage							
OSS 4	reduce the business risk							
OSS 5	innovations							
	My organization is…							
OSB 1	satisfied with the overall relationship with suppliers							
OSB 2	willing to continue the contract with existing suppliers							
OSB 3	willing to outsource activities which are currently in-sourced							

Section C: General information about your organization

7. Name of your organization: ……..

8. Type of your organization (please -**X-** the answer)

Bank		**Hotel**	
Government	◯	1 Star	◯
Semi –Government	◯	2 Star	◯
Private	◯	3 Star	◯
Foreign	◯	4 Star	◯
Other (please specify)		5 Star	◯
		Above 5 Star (5+)	◯

9. Number of employees in the organization (approximate figure)……..

10. Number of branches in Island wide (in 2010)……

11. How long has your organization been outsourcing (number of years) ……..

12. Please provide your contact details if you are interested in research findings

Your name :

Designation :

E-mail :

Tel: No. :

THANK YOU VERY MUCH

FOR YOUR VALUABLE TIME AND RESPONSES

APPENDIX C: BOXPLOT AND MISSING VALUE VERIFICATION

1 . Vendor Management Capability

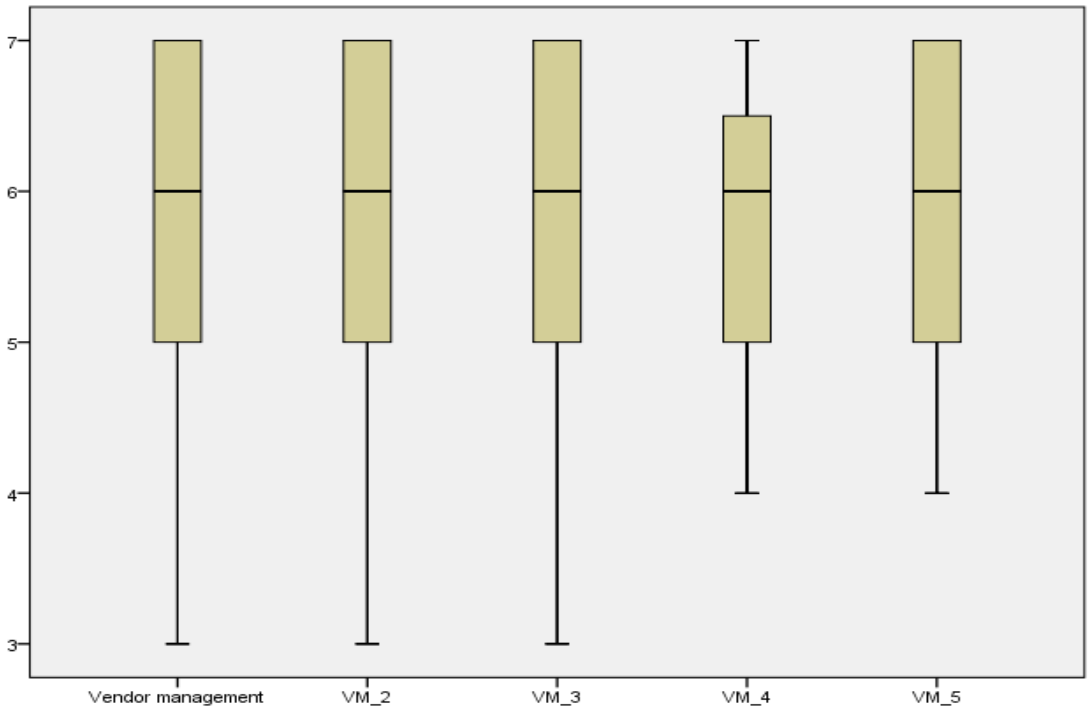
```
EXAMINE VARIABLES=VM_1 VM_2 VM_3 VM_4 VM_5
  /COMPARE VARIABLE
  /PLOT=BOXPLOT
  /STATISTICS=NONE
  /NOTOTAL
  /ID=VM
  /MISSING=LISTWISE.
```

Explore

```
[DataSet1] D:\PHD\FINAL.sav
```

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Vendor management	207	100.0%	0	.0%	207	100.0%
VM_2	207	100.0%	0	.0%	207	100.0%
VM_3	207	100.0%	0	.0%	207	100.0%
VM_4	207	100.0%	0	.0%	207	100.0%
VM_5	207	100.0%	0	.0%	207	100.0%



2. Vendors' Service Performance

```
EXAMINE VARIABLES=PTQ HQ SQ OQ
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  /PLOT=BOXPLOT
  /STATISTICS=NONE
  /NOTOTAL
  /ID=VSP
  /MISSING=LISTWISE.
```
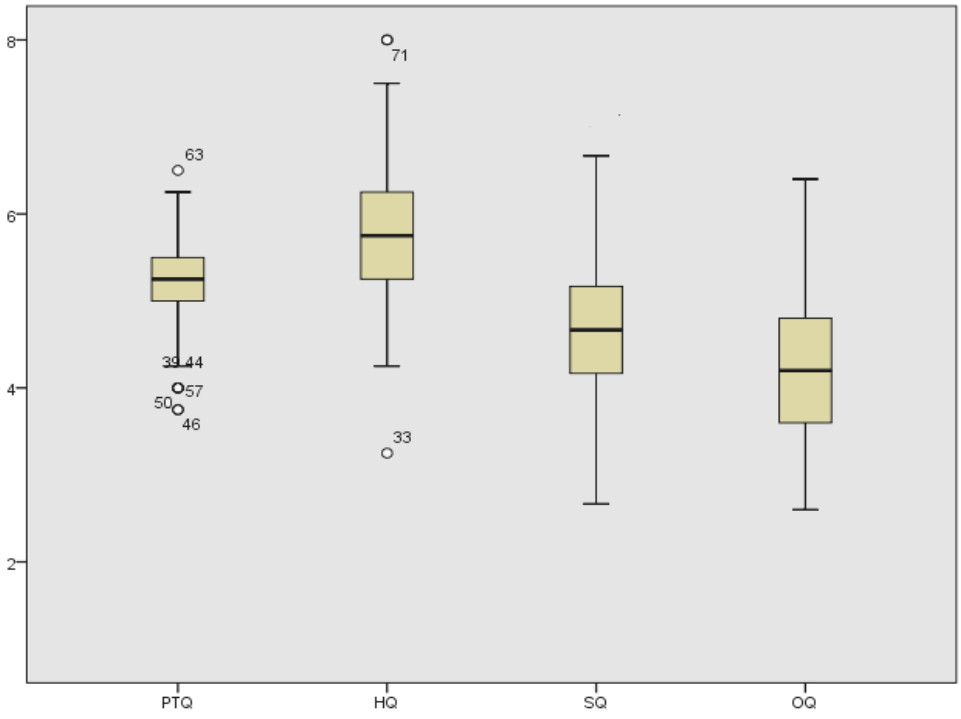

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
PTQ	207	100.0%	0	.0%	207	100.0%
HQ	207	100.0%	0	.0%	207	100.0%
SQ	207	100.0%	0	.0%	207	100.0%
OQ	207	100.0%	0	.0%	207	100.0%



3. Partnership Quality

```
EXAMINE VARIABLES=COP1 COP2 COP3 COP4 COP5 COP6 COP7 COP8 PQT1 PQT2
PQT3 PQT4 PQC1 PQC2 PQC3 PQC4
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  /PLOT=BOXPLOT
  /STATISTICS=NONE
  /NOTOTAL
  /ID=PQ
  /MISSING=LISTWISE.
```
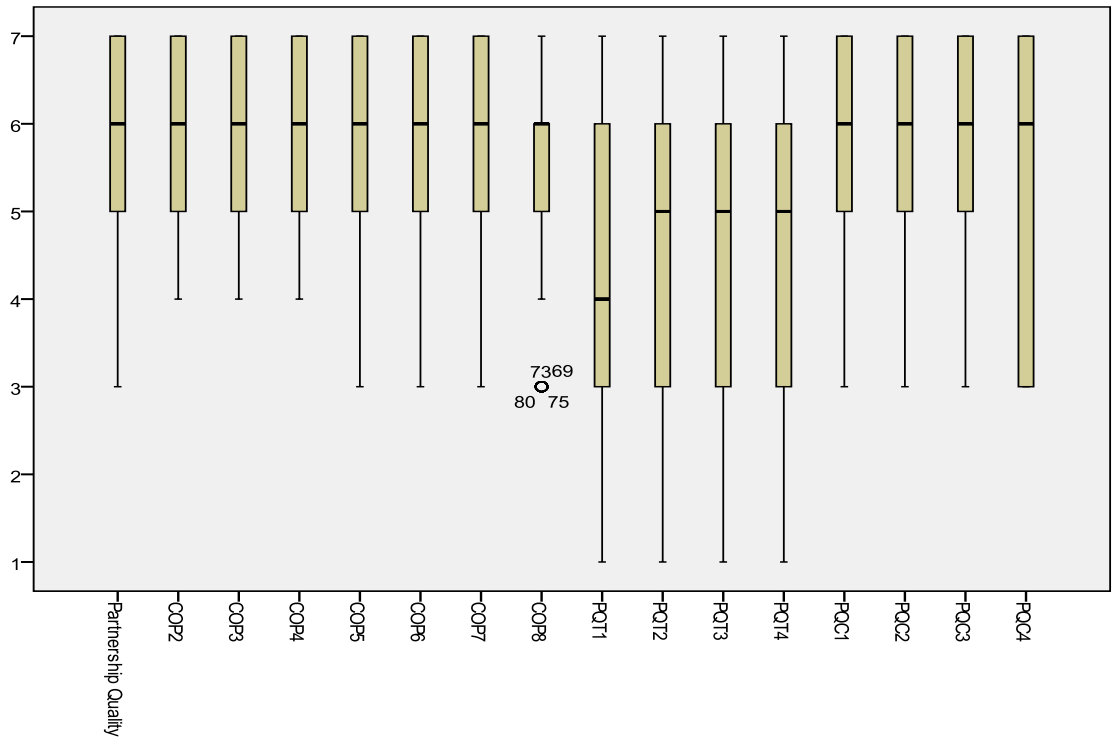

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Partnership Quality	207	100.0%	0	.0%	207	100.0%
COP2	207	100.0%	0	.0%	207	100.0%
COP3	207	100.0%	0	.0%	207	100.0%
COP4	207	100.0%	0	.0%	207	100.0%
COP5	207	100.0%	0	.0%	207	100.0%
COP6	207	100.0%	0	.0%	207	100.0%
COP7	207	100.0%	0	.0%	207	100.0%
COP8	207	100.0%	0	.0%	207	100.0%
PQT1	207	100.0%	0	.0%	207	100.0%
PQT2	207	100.0%	0	.0%	207	100.0%
PQT3	207	100.0%	0	.0%	207	100.0%
PQT4	207	100.0%	0	.0%	207	100.0%
PQC1	207	100.0%	0	.0%	207	100.0%
PQC2	207	100.0%	0	.0%	207	100.0%
PQC3	207	100.0%	0	.0%	207	100.0%
PQC4	207	100.0%	0	.0%	207	100.0%

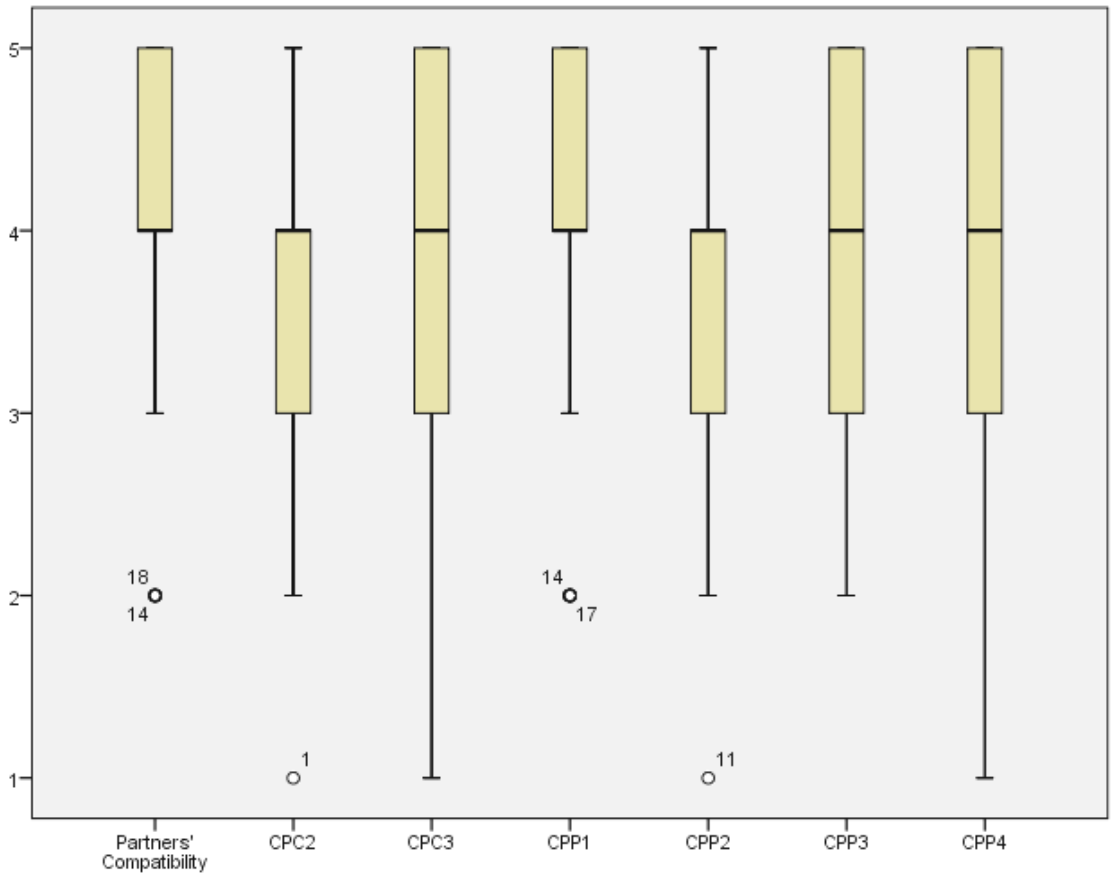


4. Partners' Compatibility

```
EXAMINE VARIABLES=CPC1 CPC2 CPC3 CPP1 CPP2 CPP3 CPP4
  /COMPARE VARIABLE
  /PLOT=BOXPLOT
  /STATISTICS=NONE
  /NOTOTAL
  /ID=CP
  /MISSING=LISTWISE.
```

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Partners' Compatibility	207	100.0%	0	.0%	207	100.0%
CPC2	207	100.0%	0	.0%	207	100.0%
CPC3	207	100.0%	0	.0%	207	100.0%
CPP1	207	100.0%	0	.0%	207	100.0%
CPP2	207	100.0%	0	.0%	207	100.0%
CPP3	207	100.0%	0	.0%	207	100.0%
CPP4	207	100.0%	0	.0%	207	100.0%

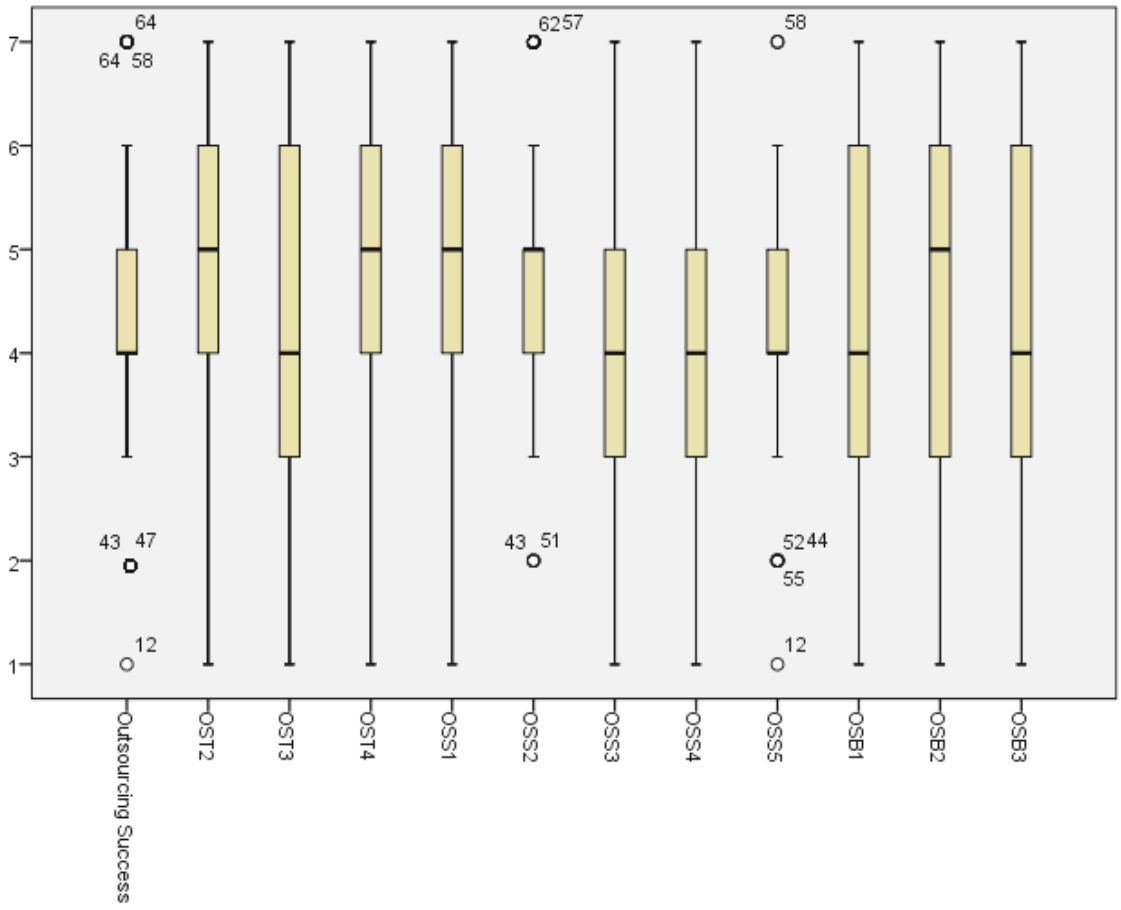


5. Outsourcing Success

```
EXAMINE VARIABLES=OST1 OST2 OST3 OST4 OSS1 OSS2 OSS3 OSS4 OSS5 OSB1
OSB2 OSB3
  /COMPARE VARIABLE
  /PLOT=BOXPLOT
  /STATISTICS=NONE
  /NOTOTAL
  /ID=OS
  /MISSING=LISTWISE.
```

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Outsourcing Success	207	100.0%	0	.0%	207	100.0%
OST2	207	100.0%	0	.0%	207	100.0%
OST3	207	100.0%	0	.0%	207	100.0%
OST4	207	100.0%	0	.0%	207	100.0%
OSS1	207	100.0%	0	.0%	207	100.0%
OSS2	207	100.0%	0	.0%	207	100.0%
OSS3	207	100.0%	0	.0%	207	100.0%
OSS4	207	100.0%	0	.0%	207	100.0%
OSS5	207	100.0%	0	.0%	207	100.0%
OSB1	207	100.0%	0	.0%	207	100.0%
OSB2	207	100.0%	0	.0%	207	100.0%
OSB3	207	100.0%	0	.0%	207	100.0%



APPENDIX D: HERMAN SINGLE FACTOR ANALYSIS

```
FACTOR
  /VARIABLES VM_1 VM_2 VM_3 VM_4 VM_5 PTQ1 PTQ2 PTQ5 PTQ6 SQ1 SQ2 SQ3
SQ4 SQ5 SQ6 HQ1 HQ2 HQ3 HQ4 HQ5 OQ1 OQ2 OQ3 OQ4 OQ5 COP1 COP2 COP3
COP4 COP5 COP6 COP7 COP8 PQT1 PQT2 PQT3 PQT4 PQC1 PQC2 PQC3 PQC4 CPC1
CPC2 CPC3 CPP1 CPP2 CPP3 CPP4 OST1 OST2 OST3
OST4 OSS1 OSS2 OSS3 OSS4 OSS5 OSB1 OSB2 OSB3
  /MISSING LISTWISE
  /ANALYSIS VM_1 VM_2 VM_3 VM_4 VM_5 PTQ1 PTQ2 PTQ5 PTQ6 SQ1 SQ2 SQ3
SQ4 SQ5 SQ6 HQ1 HQ2 HQ3 HQ4 HQ5 OQ1 OQ2 OQ3 OQ4 OQ5 COP1 COP2 COP3
COP4 COP5 COP6 COP7 COP8 PQT1 PQT2 PQT3 PQT4 PQC1 PQC2 PQC3 PQC4 CPC1
CPC2 CPC3 CPP1 CPP2 CPP3 CPP4 OST1 OST2 OST3 OST4
OSS1 OSS2 OSS3 OSS4 OSS5 OSB1 OSB2 OSB3
  /PRINT INITIAL EXTRACTION
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /ROTATION NOROTATE
  /METHOD=CORRELATION.
```

Factor Analysis

```
[DataSet1] D:\PHD\FINAL.sav
```

Communalities

	Initial	Extraction
Vendor management	1.000	.847
VM_2	1.000	.832
VM_3	1.000	.834
VM_4	1.000	.790
VM_5	1.000	.759
Vendor's Performance	1.000	.508
PTQ2	1.000	.660
PTQ5	1.000	.594
PTQ6	1.000	.591
SQ1	1.000	.637
SQ2	1.000	.723
SQ3	1.000	.726
SQ4	1.000	.599
SQ5	1.000	.774
SQ6	1.000	.757
HQ1	1.000	.649
HQ2	1.000	.591
HQ3	1.000	.554
HQ4	1.000	.545
HQ5	1.000	.592
OQ1	1.000	.574
OQ2	1.000	.612
OQ3	1.000	.668
OQ4	1.000	.632
OQ5	1.000	.680
Partnership Quality	1.000	.732
COP2	1.000	.772
COP3	1.000	.757
COP4	1.000	.828
COP5	1.000	.802

COP6	1.000	.701
COP7	1.000	.665
COP8	1.000	.648
PQT1	1.000	.913
PQT2	1.000	.944
PQT3	1.000	.927
PQT4	1.000	.904
PQC1	1.000	.745
PQC2	1.000	.748
PQC3	1.000	.833
PQC4	1.000	.719
Partners' Compatibility	1.000	.748
CPC2	1.000	.844
CPC3	1.000	.631
CPP1	1.000	.818
CPP2	1.000	.850
CPP3	1.000	.805
CPP4	1.000	.847
Outsourcing Success	1.000	.626
OST2	1.000	.666
OST3	1.000	.714
OST4	1.000	.698
OSS1	1.000	.738
OSS2	1.000	.584
OSS3	1.000	.634
OSS4	1.000	.572
OSS5	1.000	.485
OSB1	1.000	.798
OSB2	1.000	.836
OSB3	1.000	.795

Extraction Method: Principal Component Analysis.

Total Variance Explained (Extraction Method: Principal Component Analysis).

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.339	20.566	20.566	12.339	20.566	20.566
2	6.096	10.160	30.726	6.096	10.160	30.726
3	5.002	8.336	39.062	5.002	8.336	39.062
4	3.779	6.298	45.360	3.779	6.298	45.360
5	3.394	5.656	51.017	3.394	5.656	51.017
6	2.120	3.533	54.550	2.120	3.533	54.550
7	1.766	2.943	57.493	1.766	2.943	57.493
8	1.593	2.655	60.148	1.593	2.655	60.148
9	1.333	2.222	62.370	1.333	2.222	62.370
10	1.230	2.050	64.420	1.230	2.050	64.420
11	1.170	1.950	66.370	1.170	1.950	66.370
12	1.133	1.889	68.259	1.133	1.889	68.259
13	1.061	1.768	70.027	1.061	1.768	70.027
14	1.037	1.729	71.756	1.037	1.729	71.756
15	.974	1.624	73.380			
16	.921	1.535	74.914			
17	.852	1.420	76.334			
18	.829	1.381	77.715			
19	.764	1.273	78.988			
20	.760	1.267	80.255			
21	.708	1.180	81.435			
22	.658	1.096	82.531			
23	.652	1.087	83.618			
24	.624	1.040	84.658			
25	.610	1.016	85.675			
26	.553	.922	86.597			

27	.522	.870	87.467			
28	.494	.823	88.290			
29	.467	.778	89.068			
30	.447	.746	89.814			
31	.440	.734	90.548			
32	.407	.678	91.226			
33	.402	.670	91.896			
34	.380	.634	92.530			
35	.356	.594	93.124			
36	.330	.551	93.674			
37	.317	.528	94.202			
38	.304	.507	94.709			
39	.274	.456	95.165			
40	.264	.440	95.605			
41	.260	.433	96.038			
42	.230	.383	96.421			
43	.214	.356	96.777			
44	.203	.339	97.116			
45	.182	.304	97.420			
46	.171	.285	97.705			
47	.165	.275	97.980			
48	.163	.272	98.252			
49	.149	.248	98.500			
50	.129	.215	98.715			
51	.126	.211	98.926			
52	.117	.195	99.121			
53	.102	.170	99.292			
54	.094	.156	99.448			
55	.079	.132	99.579			
56	.073	.122	99.701			
57	.070	.116	99.817			
58	.050	.083	99.901			
59	.037	.062	99.962			
60	.023	.038	100.000			

APPENDIX E: 1ST ORDER MEASUREMENT MODEL STATISTICS

1. VENDOR MANAGEMENT CAPABILITY

Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
VM_5	<---	VM	1.000				
VM_4	<---	VM	1.001	.043	23.395	***	par_1
VM_3	<---	VM	.723	.039	18.518	***	par_2
VM_2	<---	VM	.752	.040	18.616	***	par_3
VM_1	<---	VM	1.059	.062	16.979	***	par_4

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
VM_5	<---	VM	.836
VM_4	<---	VM	.851
VM_3	<---	VM	.942
VM_2	<---	VM	.944
VM_1	<---	VM	.898

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
VM	.842	.115	7.341	***	par_7
e2	.321	.036	9.030	***	par_8
e3	.056	.009	6.278	***	par_9
e4	.058	.009	6.083	***	par_10
e5	.228	.028	8.183	***	par_11
e1	.364	.040	9.078	***	par_12

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	12	1.762	3	.023	.587
Saturated model	15	.000	0		
Independence model	5	1207.568	10	.000	120.757

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.004	.997	.983	.199
Saturated model	.000	1.000		
Independence model	.596	.271	-.094	.181

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.999	.995	1.001	1.003	1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.300	.300	.300
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	.000	.000	5.664
Saturated model	.000	.000	.000
Independence model	1197.568	1087.135	1315.377

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.009	.000	.000	.027
Saturated model	.000	.000	.000	.000
Independence model	5.862	5.813	5.277	6.385

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.000	.000	.096	.780
Independence model	.762	.726	.799	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	25.762	26.482	65.754	77.754
Saturated model	30.000	30.900	79.991	94.991
Independence model	1217.568	1217.868	1234.231	1239.231

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.125	.131	.159	.129
Saturated model	.146	.146	.146	.150
Independence model	5.911	5.374	6.482	5.912

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	914	1327
Independence model	4	4

2. VENDORS' SERVICE PERFORMANCE (VSP)

Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
HQ5	<---	HQ	1.000				
HQ4	<---	HQ	.815	.151	5.398	***	
HQ3	<---	HQ	.785	.150	5.227	***	
HQ2	<---	HQ	.960	.157	6.106	***	
SQ4	<---	SQ	1.000				
SQ5	<---	SQ	2.155	.410	5.259	***	
SQ6	<---	SQ	1.971	.360	5.469	***	
OQ4	<---	OQ	1.000				
OQ3	<---	OQ	.946	.103	9.203	***	
OQ2	<---	OQ	.714	.102	6.980	***	
OQ1	<---	OQ	.941	.103	9.158	***	
OQ5	<---	OQ	.895	.103	8.731	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
HQ5	<---	HQ	.535
HQ4	<---	HQ	.498
HQ3	<---	HQ	.477
HQ2	<---	HQ	.601
SQ4	<---	SQ	.410
SQ5	<---	SQ	.883
SQ6	<---	SQ	.807
OQ4	<---	OQ	.741
OQ3	<---	OQ	.701
OQ2	<---	OQ	.529
OQ1	<---	OQ	.697
OQ5	<---	OQ	.663

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
HQ	<-->	OQ	.429	.076	5.613	***	
HQ	<-->	SQ	.093	.032	2.917	.004	
SQ	<-->	OQ	.083	.030	2.753	.006	

Correlations: (Group number 1 - Default model)

			Estimate
HQ	<-->	OQ	.690
HQ	<-->	SQ	.359
SQ	<-->	OQ	.274

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
HQ	.401	.107	3.750	***	
SQ	.167	.059	2.823	.005	
OQ	.546	.095	5.754	***	
e13	1.000				
e5	.808	.088	9.213	***	
e6	.841	.090	9.326	***	
e7	.655	.078	8.424	***	
e9	.828	.085	9.761	***	
e14	.220	.094	2.327	.020	
e15	.347	.084	4.114	***	
e16	.449	.058	7.799	***	
e17	.506	.061	8.288	***	
e18	.717	.076	9.411	***	
e19	.511	.061	8.327	***	
e20	.557	.064	8.641	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	26	89.982	52	.001	1.730
Saturated model	78	.000	0		
Independence model	12	768.274	66	.000	11.641

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.069	.940	.910	.627
Saturated model	.000	1.000		
Independence model	.295	.479	.384	.405

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.883	.851	.947	.931	.946
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.788	.696	.745
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	37.982	15.520	68.307
Saturated model	.000	.000	.000
Independence model	702.274	616.752	795.236

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.437	.184	.075	.332
Saturated model	.000	.000	.000	.000
Independence model	3.729	3.409	2.994	3.860

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.060	.038	.080	.213
Independence model	.227	.213	.242	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	141.982	145.485	228.633	254.633
Saturated model	156.000	166.508	415.952	493.952
Independence model	792.274	793.891	832.267	844.267

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.689	.580	.836	.706
Saturated model	.757	.757	.757	.808
Independence model	3.846	3.431	4.297	3.854

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	160	180
Independence model	24	26

3. PARTNERSHIP QUALITY

Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
COP5	<---	COP	1.000				
COP4	<---	COP	.938	.034	27.985	***	par_1
COP3	<---	COP	.947	.036	26.004	***	par_2
COP2	<---	COP	.992	.036	27.938	***	par_3
COP1	<---	COP	1.012	.041	24.695	***	par_4
COP6	<---	COP	.949	.048	19.797	***	par_5
COP7	<---	COP	.933	.046	20.106	***	par_6
PQT4	<---	PQT	1.000				
PQT3	<---	PQT	1.025	.023	45.564	***	par_7
PQT2	<---	PQT	1.038	.020	52.980	***	par_8
PQT1	<---	PQT	1.000				
PQC4	<---	PQC	1.000				
PQC3	<---	PQC	.958	.052	18.267	***	par_9
PQC2	<---	PQC	.996	.051	19.717	***	par_10
PQC1	<---	PQC	1.000				
COP8	<---	COP	.848	.052	16.297	***	par_11

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
COP5	<---	COP	.933
COP4	<---	COP	.951
COP3	<---	COP	.934
COP2	<---	COP	.951
COP1	<---	COP	.921
COP6	<---	COP	.857
COP7	<---	COP	.862
PQT4	<---	PQT	.935
PQT3	<---	PQT	.956
PQT2	<---	PQT	.992
PQT1	<---	PQT	.963
PQC4	<---	PQC	.814
PQC3	<---	PQC	.871
PQC2	<---	PQC	.904

			Estimate
PQC1	<---	PQC	.850
COP8	<---	COP	.789

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
COP	<-->	PQT	.137	.022	6.166	***	par_12
PQT	<-->	PQC	.117	.022	5.272	***	par_13
COP	<-->	PQC	.042	.020	2.087	.037	par_14
e34	<-->	e35	.015	.003	4.643	***	par_15
e31	<-->	e33	.029	.007	4.102	***	par_16
e31	<-->	e32	.036	.007	5.378	***	par_17

Correlations: (Group number 1 - Default model)

			Estimate
COP	<-->	PQT	.494
PQT	<-->	PQC	.420
COP	<-->	PQC	.155
e34	<-->	e35	.437
e31	<-->	e33	.283
e31	<-->	e32	.421

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
COP	.270	.030	8.883	***	par_18
PQT	.286	.030	9.655	***	par_19
PQC	.272	.033	8.326	***	par_20
e26	.040	.005	8.539	***	par_21
e27	.025	.003	7.882	***	par_22
e28	.036	.004	8.522	***	par_23
e29	.028	.004	7.901	***	par_24
e31	.088	.009	9.676	***	par_25
e32	.082	.009	9.462	***	par_26
e33	.118	.012	9.757	***	par_27
e34	.041	.005	8.958	***	par_28
e35	.029	.003	8.254	***	par_29
e36	.005	.002	2.422	.015	par_30
e37	.022	.003	7.816	***	par_31
e38	.138	.016	8.562	***	par_32
e39	.079	.011	7.405	***	par_33
e40	.061	.010	6.294	***	par_34
e41	.105	.013	8.002	***	par_35
e30	.050	.006	8.822	***	par_36

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	36	221.073	100	.000	2.211
Saturated model	136	.000	0		
Independence model	16	4591.635	120	.000	38.264

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.017	.886	.845	.651
Saturated model	.000	1.000		
Independence model	.164	.178	.069	.157

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.952	.942	.973	.968	.973
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.833	.793	.811
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	121.073	81.861	168.022
Saturated model	.000	.000	.000
Independence model	4471.635	4253.712	4696.804

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.073	.588	.397	.816
Saturated model	.000	.000	.000	.000
Independence model	22.289	21.707	20.649	22.800

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.077	.063	.090	.001
Independence model	.425	.415	.436	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	293.073	299.549	413.051	449.051
Saturated model	272.000	296.466	725.250	861.250
Independence model	4623.635	4626.513	4676.959	4692.959

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.423	1.232	1.651	1.454
Saturated model	1.320	1.320	1.320	1.439
Independence model	22.445	21.387	23.538	22.459

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	116	127
Independence model	7	8

4. PARTNERS' COMPATIBILITY (WITH TWO DIMENSIONS)

Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CPC3	<---	CPC	1.000				
CPC2	<---	CPC	1.135	.088	12.913	***	par_1
CPC1	<---	CPC	1.137	.087	13.078	***	par_2
CPP1	<---	CPP	1.000				
CPP2	<---	CPP	.898	.057	15.867	***	par_3
CPP3	<---	CPP	.923	.052	17.655	***	par_4
CPP4	<---	CPP	.995	.048	20.523	***	par_5

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
CPC3	<---	CPC	.751
CPC2	<---	CPC	.834
CPC1	<---	CPC	.843
CPP1	<---	CPP	.898
CPP2	<---	CPP	.808
CPP3	<---	CPP	.851
CPP4	<---	CPP	.907

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CPC	<-->	CPP	.565	.068	8.306	***	par_6

Correlations: (Group number 1 - Default model)

			Estimate
CPC	<-->	CPP	1.025

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
CPC	.300	.048	6.285	***	par_7
CPP	1.012	.123	8.257	***	par_8
e49	.231	.024	9.633	***	par_9
e50	.170	.019	8.948	***	par_10
e51	.158	.018	8.811	***	par_11
e55	.242	.030	8.156	***	par_12
e54	.435	.047	9.283	***	par_13
e53	.329	.037	8.928	***	par_14
e52	.216	.027	7.925	***	par_15

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	15	254.904	13	.000	19.608
Saturated model	28	.000	0		
Independence model	7	1529.158	21	.000	72.817

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.049	.780	.527	.362
Saturated model	.000	1.000		
Independence model	.587	.242	-.011	.181

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.833	.731	.840	.741	.840
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.619	.516	.520
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	241.904	193.719	297.523
Saturated model	.000	.000	.000
Independence model	1508.158	1383.601	1640.084

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.237	1.174	.940	1.444
Saturated model	.000	.000	.000	.000
Independence model	7.423	7.321	6.717	7.962

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.301	.269	.333	.000
Independence model	.590	.566	.616	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	284.904	286.116	334.895	349.895
Saturated model	56.000	58.263	149.316	177.316
Independence model	1543.158	1543.724	1566.487	1573.487

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.383	1.149	1.653	1.389
Saturated model	.272	.272	.272	.283
Independence model	7.491	6.886	8.131	7.494

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	19	23
Independence model	5	6

5. PARTNERS' COMPATIBILITY (AS A LATENT VARIABLE)

Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
CPP1	<---	CPP	1.000				
CPP2	<---	CPP	.810	.059	13.823	***	par_1
CPP3	<---	CPP	.923	.049	19.012	***	par_2
CPP4	<---	CPP	.985	.045	21.914	***	par_3
CPC3	<---	CPP	.545	.037	14.688	***	par_4
CPC2	<---	CPP	.578	.037	15.724	***	par_5
CPC1	<---	CPP	.624	.033	18.942	***	par_6

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
CPP1	<---	CPP	.915
CPP2	<---	CPP	.742
CPP3	<---	CPP	.867
CPP4	<---	CPP	.915
CPC3	<---	CPP	.767
CPC2	<---	CPP	.795
CPC1	<---	CPP	.865

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
CPP	1.051	.123	8.514	***	par_7
e49	.218	.023	9.396	***	par_8
e50	.205	.022	9.244	***	par_9
e51	.137	.016	8.559	***	par_10
e55	.203	.028	7.367	***	par_11
e54	.561	.059	9.487	***	par_12
e53	.296	.035	8.539	***	par_13
e52	.197	.027	7.360	***	par_14

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	15	19.111	13	.012	1.470
Saturated model	28	.000	0		
Independence model	7	1529.158	21	.000	72.817

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.014	.973	.942	.452
Saturated model	.000	1.000		
Independence model	.587	.242	-.011	.181

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.988	.980	.996	.993	.996
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.619	.611	.617
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	6.111	.000	21.935
Saturated model	.000	.000	.000
Independence model	1508.158	1383.601	1640.084

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.093	.030	.000	.106
Saturated model	.000	.000	.000	.000
Independence model	7.423	7.321	6.717	7.962

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.000	.091	.486
Independence model	.590	.566	.616	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	49.111	50.323	99.101	114.101
Saturated model	56.000	58.263	149.316	177.316
Independence model	1543.158	1543.724	1566.487	1573.487

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.238	.209	.315	.244
Saturated model	.272	.272	.272	.283
Independence model	7.491	6.886	8.131	7.494

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	242	299
Independence model	5	6

6. OUTSOURCING SUCCESS (WITH THREE LATENT VARIABLES)

Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
OSB3	<---	OSB	1.100	.089	12.369	***	par_1
OSB2	<---	OSB	1.174	.091	12.845	***	par_2
OSB1	<---	OSB	1.000				
OSS4	<---	OSS	1.000				
OSS3	<---	OSS	.893	.125	7.126	***	par_3
OSS1	<---	OSS	1.031	.110	9.389	***	par_4
OSS2	<---	OSS	.977	.115	8.517	***	par_5
OST4	<---	OST	1.000				
OST3	<---	OST	1.131	.092	12.239	***	par_6
OST1	<---	OST	.793	.076	10.453	***	par_7
OST2	<---	OST	.859	.076	11.265	***	par_8
OSS5	<---	OSS	.582	.093	6.236	***	par_12

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
OSB3	<---	OSB	.826
OSB2	<---	OSB	.905
OSB1	<---	OSB	.781
OSS4	<---	OSS	.645
OSS3	<---	OSS	.556
OSS1	<---	OSS	.775
OSS2	<---	OSS	.686
OST4	<---	OST	.796
OST3	<---	OST	.789
OST1	<---	OST	.694
OST2	<---	OST	.738
OSS5	<---	OSS	.479

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
OSB	<-->	OSS	.240	.099	2.409	.016	par_9
OSS	<-->	OST	.897	.128	6.991	***	par_10
OSB	<-->	OST	.349	.127	2.762	.006	par_11

Correlations: (Group number 1 - Default model)

			Estimate
OSB	<-->	OSS	.208
OSS	<-->	OST	1.006
OSB	<-->	OST	.231

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
OSB	1.950	.306	6.365	***	par_13
OSS	.677	.136	4.972	***	par_14
OST	1.174	.177	6.643	***	par_15
e42	1.103	.162	6.825	***	par_16
e43	.593	.148	4.014	***	par_17
e44	1.244	.158	7.889	***	par_18
e46	1.204	.125	9.657	***	par_19
e47	.728	.080	9.115	***	par_20
e48	.479	.058	8.241	***	par_21
e45	.951	.102	9.339	***	par_22
e58	.914	.110	8.317	***	par_23
e60	.794	.087	9.142	***	par_24
e57	.680	.083	8.219	***	par_25
e61	.770	.078	9.828	***	par_26
e59	.725	.082	8.841	***	par_27

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	27	74.759	51	.017	1.466
Saturated model	78	.000	0		
Independence model	12	1196.128	66	.000	18.123

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.106	.940	.909	.615
Saturated model	.000	1.000		
Independence model	.724	.368	.254	.312

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.937	.919	.979	.973	.979
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.773	.724	.756
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	23.759	4.578	50.924
Saturated model	.000	.000	.000
Independence model	1130.128	1021.595	1246.065

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.363	.115	.022	.247
Saturated model	.000	.000	.000	.000
Independence model	5.806	5.486	4.959	6.049

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.021	.070	.547
Independence model	.288	.274	.303	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	128.759	132.396	218.742	245.742
Saturated model	156.000	166.508	415.952	493.952
Independence model	1220.128	1221.745	1260.121	1272.121

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.625	.532	.757	.643
Saturated model	.757	.757	.757	.808
Independence model	5.923	5.396	6.486	5.931

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	190	214
Independence model	15	17

7. OUTSOURCING SUCCESS (WITH TWO LATENT VARIABLES)

Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
OSB3	<---	OSB	1.057	.085	12.370	***	par_1
OSB2	<---	OSB	1.158	.090	12.843	***	par_2
OSB1	<---	OSB	1.000				
OST4	<---	OST	1.000				
OST3	<---	OST	.993	.081	12.283	***	par_3
OST1	<---	OST	.871	.083	10.444	***	par_4
OST2	<---	OST	.932	.082	11.342	***	par_5
OSS1	<---	OST	.977	.081	12.030	***	par_7
OSS2	<---	OST	.858	.084	10.253	***	par_8
OSS3	<---	OST	.679	.087	7.827	***	par_9
OSS4	<---	OST	.806	.085	9.531	***	par_10

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
OSB3	<---	OSB	.826
OSB2	<---	OSB	.905
OSB1	<---	OSB	.781
OST4	<---	OST	.798
OST3	<---	OST	.792
OST1	<---	OST	.695
OST2	<---	OST	.743
OSS1	<---	OST	.779
OSS2	<---	OST	.684
OSS3	<---	OST	.542
OSS4	<---	OST	.643

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
OSB	<-->	OST	.140	.050	2.777	.005	par_6

Correlations: (Group number 1 - Default model)

	Estimate
OSB <--> OST	.225

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
OSB	.607	.095	6.364	***	par_11
OST	.633	.095	6.668	***	par_12
e42	.316	.046	6.817	***	par_13
e43	.180	.045	4.022	***	par_14
e44	.388	.049	7.892	***	par_15
e46	.703	.073	9.689	***	par_16
e47	.529	.058	9.170	***	par_17
e48	.391	.046	8.418	***	par_18
e45	.583	.062	9.364	***	par_19
e58	.370	.045	8.259	***	par_20
e60	.515	.057	9.110	***	par_21
e57	.362	.044	8.187	***	par_22
e59	.445	.051	8.771	***	par_23

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	23	60.764	43	.038	1.413
Saturated model	66	.000	0		
Independence model	11	1133.949	55	.000	20.617

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.051	.947	.919	.617
Saturated model	.000	1.000		
Independence model	.373	.373	.247	.311

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.946	.931	.984	.979	.984
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.782	.740	.769
Saturated model	.000	.000	.000

Model	PRATIO	PNFI	PCFI
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	17.764	1.063	42.477
Saturated model	.000	.000	.000
Independence model	1078.949	973.183	1192.117

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.295	.086	.005	.206
Saturated model	.000	.000	.000	.000
Independence model	5.505	5.238	4.724	5.787

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.045	.011	.069	.608
Independence model	.309	.293	.324	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	106.764	109.609	183.417	206.417
Saturated model	132.000	140.165	351.959	417.959
Independence model	1155.949	1157.310	1192.609	1203.609

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.518	.437	.638	.532
Saturated model	.641	.641	.641	.680
Independence model	5.611	5.098	6.161	5.618

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	202	229
Independence model	14	15

8. FULL MEASUREMENT MODEL

Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
OSB3	<---	OSB	1.064	.084	12.723	***	
OSB2	<---	OSB	1.145	.084	13.589	***	
OSB1	<---	OSB	1.000				
OSS4	<---	OSO.	.888	.093	9.602	***	
OSS3	<---	OSO.	.756	.094	8.067	***	
OSS2	<---	OSO.	.924	.092	10.026	***	
OSS1	<---	OSO.	1.000				
VM_5	<---	VM.	1.000				
VM_4	<---	VM.	1.025	.040	25.416	***	
VM_3	<---	VM.	.690	.033	20.841	***	
VM_2	<---	VM.	.708	.035	20.290	***	
VM_1	<---	VM.	1.002	.055	18.304	***	
HQ4	<---	HQ	1.000				
HQ2	<---	HQ	1.011	.152	6.646	***	
SQ6	<---	SQ	1.000				
SQ5	<---	SQ	1.024	.080	12.801	***	
SQ4	<---	SQ	.520	.086	6.026	***	
OQ5	<---	OQ	1.000				
OQ4	<---	OQ	1.122	.129	8.665	***	
OQ3	<---	OQ	1.059	.128	8.295	***	
OQ2	<---	OQ	.833	.123	6.784	***	
OQ1	<---	OQ	1.061	.128	8.305	***	
COP5	<---	COP	1.000				
COP4	<---	COP	.935	.034	27.584	***	
COP3	<---	COP	.945	.037	25.809	***	
COP2	<---	COP	.986	.036	27.183	***	
COP1	<---	COP	1.015	.041	24.935	***	
PQT4	<---	PQT	.968	.027	35.435	***	
PQT3	<---	PQT	.990	.024	42.091	***	
PQT2	<---	PQT	1.000				
PQT1	<---	PQT	.961	.021	44.906	***	
PQC4	<---	PQC	.952	.063	14.997	***	
PQC3	<---	PQC	1.000				
PQC2	<---	PQC	.971	.055	17.779	***	
PQC1	<---	PQC	1.013	.063	16.008	***	
COP6	<---	COP	.964	.047	20.493	***	
COP7	<---	COP	.943	.046	20.705	***	
COP8	<---	COP	.863	.051	16.942	***	
CPP1	<---	CP.	1.086	.060	18.115	***	
CPP2	<---	CP.	.910	.068	13.309	***	
CPP3	<---	CP.	1.000				
CPP4	<---	CP.	1.066	.059	17.967	***	
HQ3	<---	HQ	.992	.154	6.422	***	
HQ5	<---	HQ	1.154	.163	7.088	***	
OST4	<---	OSO.	1.055	.091	11.619	***	
OST3	<---	OSO.	1.052	.091	11.578	***	
OST2	<---	OSO.	.975	.092	10.638	***	

			Estimate	S.E.	C.R.	P	Label
OST1	<---	OSO.	.938	.092	10.192	***	
CPC3	<---	CP.	.616	.044	14.134	***	
CPC2	<---	CP.	.652	.044	14.963	***	
CPC1	<---	CP.	.693	.041	16.954	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
OSB3	<---	OSB	.833
OSB2	<---	OSB	.897
OSB1	<---	OSB	.784
OSS4	<---	OSO.	.667
OSS3	<---	OSO.	.568
OSS2	<---	OSO.	.694
OSS1	<---	OSO.	.751
VM_5	<---	VM.	.870
VM_4	<---	VM.	.905
VM_3	<---	VM.	.936
VM_2	<---	VM.	.925
VM_1	<---	VM.	.884
HQ4	<---	HQ	.545
HQ2	<---	HQ	.564
SQ6	<---	SQ	.830
SQ5	<---	SQ	.851
SQ4	<---	SQ	.432
OQ5	<---	OQ	.657
OQ4	<---	OQ	.737
OQ3	<---	OQ	.696
OQ2	<---	OQ	.547
OQ1	<---	OQ	.697
COP5	<---	COP	.933
COP4	<---	COP	.948
COP3	<---	COP	.932
COP2	<---	COP	.944
COP1	<---	COP	.923
PQT4	<---	PQT	.936
PQT3	<---	PQT	.956
PQT2	<---	PQT	.992
PQT1	<---	PQT	.963
PQC4	<---	PQC	.795
PQC3	<---	PQC	.902
PQC2	<---	PQC	.874
PQC1	<---	PQC	.832
COP6	<---	COP	.867
COP7	<---	COP	.871
COP8	<---	COP	.803
CPP1	<---	CP.	.905
CPP2	<---	CP.	.760
CPP3	<---	CP.	.856

CPP4	<---	CP.	.902
HQ3	<---	HQ	.537
HQ5	<---	HQ	.620
OST4	<---	OSO.	.793
OST3	<---	OSO.	.790
OST2	<---	OSO.	.732
OST1	<---	OSO.	.705
CPC3	<---	CP.	.789
CPC2	<---	CP.	.816
CPC1	<---	CP.	.875

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
OSB	<-->	OSO.	.128	.048	2.684	.007	
OSB	<-->	VM.	.368	.067	5.533	***	
OSB	<-->	HQ	.108	.043	2.526	.012	
OSB	<-->	SQ	.164	.055	2.991	.003	
OSB	<-->	OQ	.038	.042	.901	.368	
OSB	<-->	COP	-.052	.031	-1.679	.093	
OSB	<-->	PQT	.108	.034	3.211	.001	
OSB	<-->	PQC	.120	.033	3.610	***	
OSB	<-->	CP.	-.081	.056	-1.451	.147	
OSO.	<-->	VM.	.327	.063	5.212	***	
OSO.	<-->	HQ	.215	.048	4.499	***	
OSO.	<-->	SQ	.034	.050	.683	.495	
OSO.	<-->	OQ	.182	.046	3.973	***	
OSO.	<-->	COP	.023	.029	.802	.422	
OSO.	<-->	PQT	.052	.031	1.668	.095	
OSO.	<-->	PQC	.052	.030	1.719	.086	
OSO.	<-->	CP.	.001	.053	.011	.991	
VM.	<-->	HQ	.147	.051	2.885	.004	
VM.	<-->	SQ	.275	.066	4.146	***	
VM.	<-->	OQ	.084	.050	1.670	.095	
VM.	<-->	COP	-.357	.046	-7.688	***	
VM.	<-->	PQT	-.133	.039	-3.376	***	
VM.	<-->	PQC	.109	.038	2.868	.004	
VM.	<-->	CP.	-.414	.075	-5.533	***	
HQ	<-->	SQ	.157	.048	3.258	.001	
HQ	<-->	OQ	.131	.059	5.581	***	
HQ	<-->	COP	.107	.029	3.741	***	
HQ	<-->	PQT	.091	.029	3.115	.002	
HQ	<-->	PQC	.098	.029	3.406	***	
HQ	<-->	CP.	.140	.050	2.808	.005	
SQ	<-->	OQ	.152	.049	3.084	.002	
SQ	<-->	COP	-.006	.033	-.174	.862	
SQ	<-->	PQT	.213	.039	5.407	***	
SQ	<-->	PQC	.190	.038	5.009	***	
SQ	<-->	CP.	.022	.061	.360	.719	
OQ	<-->	COP	.083	.028	2.949	.003	

			Estimate	S.E.	C.R.	P	Label
OQ	<-->	PQT	.054	.029	1.877	.060	
OQ	<-->	PQC	.051	.028	1.829	.067	
OQ	<-->	CP.	.102	.050	2.030	.042	
COP	<-->	PQT	.144	.023	6.232	***	
COP	<-->	PQC	.038	.020	1.903	.057	
COP	<-->	CP.	.266	.042	6.387	***	
PQT	<-->	PQC	.119	.023	5.189	***	
PQT	<-->	CP.	.144	.039	3.695	***	
PQC	<-->	CP.	.248	.042	5.926	***	
e47	<-->	e51	.261	.031	8.377	***	
e12	<-->	e13	.108	.021	5.144	***	
e41	<-->	e42	.020	.010	2.008	.045	
e43	<-->	e44	.032	.006	4.866	***	
e35	<-->	e36	.015	.003	4.609	***	

Correlations: (Group number 1 - Default model)

			Estimate
OSB	<-->	OSO.	.218
OSB	<-->	VM.	.493
OSB	<-->	HQ	.244
OSB	<-->	SQ	.253
OSB	<-->	OQ	.074
OSB	<-->	COP	-.127
OSB	<-->	PQT	.249
OSB	<-->	PQC	.296
OSB	<-->	CP.	-.111
OSO.	<-->	VM.	.457
OSO.	<-->	HQ	.509
OSO.	<-->	SQ	.055
OSO.	<-->	OQ	.371
OSO.	<-->	COP	.060
OSO.	<-->	PQT	.125
OSO.	<-->	PQC	.134
OSO.	<-->	CP.	.001
VM.	<-->	HQ	.272
VM.	<-->	SQ	.348
VM.	<-->	OQ	.135
VM.	<-->	COP	-.718
VM.	<-->	PQT	-.251
VM.	<-->	PQC	.220
VM.	<-->	CP.	-.464
HQ	<-->	SQ	.336
HQ	<-->	OQ	.690
HQ	<-->	COP	.365
HQ	<-->	PQT	.290
HQ	<-->	PQC	.337
HQ	<-->	CP.	.265
SQ	<-->	OQ	.279

			Estimate
SQ	<-->	COP	-.013
SQ	<-->	PQT	.462
SQ	<-->	PQC	.443
SQ	<-->	CP.	.028
OQ	<-->	COP	.244
OQ	<-->	PQT	.149
OQ	<-->	PQC	.151
OQ	<-->	CP.	.166
COP	<-->	PQT	.498
COP	<-->	PQC	.142
COP	<-->	CP.	.548
PQT	<-->	PQC	.413
PQT	<-->	CP.	.278
PQC	<-->	CP.	.514
e47	<-->	e51	.834
e12	<-->	e13	.432
e41	<-->	e42	.205
e43	<-->	e44	.396
e35	<-->	e36	.430

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
OSB	.611	.094	6.467	***	
OSO.	.561	.091	6.165	***	
VM.	.912	.116	7.881	***	
HQ	.319	.078	4.069	***	
SQ	.686	.100	6.848	***	
OQ	.430	.087	4.932	***	
COP	.270	.030	8.880	***	
PQT	.309	.031	9.968	***	
PQC	.268	.033	8.204	***	
CP.	.872	.114	7.617	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	152	2103.335	1174	.000	1.792
Saturated model	1326	.000	0		
Independence model	51	11761.633	1275	.000	9.225

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.044	.735	.701	.651

Model	RMR	GFI	AGFI	PGFI
Saturated model	.000	1.000		
Independence model	.216	.164	.131	.158

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.821	.806	.912	.904	.911
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.921	.756	.839
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	929.335	805.108	1061.375
Saturated model	.000	.000	.000
Independence model	10486.633	10142.933	10836.854

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	10.210	4.511	3.908	5.152
Saturated model	.000	.000	.000	.000
Independence model	57.095	50.906	49.238	52.606

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.062	.058	.066	.000
Independence model	.200	.197	.203	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	2407.335	2509.984	2913.908	3065.908
Saturated model	2652.000	3547.481	7071.185	8397.185
Independence model	11863.633	11898.075	12033.602	12084.602

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	11.686	11.083	12.327	12.184
Saturated model	12.874	12.874	12.874	17.221
Independence model	57.590	55.922	59.291	57.758

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	123	127
Independence model	24	25

APPENDIX F: 2ND ORDER MEASUREMENT MODEL STATISTICS

1. Second order CFA Model without moderating variables

Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
OSO.	<---	OS.	1.000				
OSB	<---	OS.	.794	.154	5.155	***	
HQ	<---	VSP.	1.000				
SQ	<---	VSP.	.493	.149	3.307	***	
OQ	<---	VSP.	1.100	.198	5.559	***	
OSB3	<---	OSB	1.048	.084	12.432	***	
OSB1	<---	OSB	1.000				
OSS4	<---	OSO.	.852	.090	9.417	***	
OSS3	<---	OSO.	.734	.092	8.004	***	
OSS2	<---	OSO.	.899	.090	10.006	***	
OSS1	<---	OSO.	1.000				
VM_5	<---	VM.	1.000				
VM_4	<---	VM.	1.020	.042	24.050	***	
VM_2	<---	VM.	.751	.040	18.575	***	
VM_1	<---	VM.	1.051	.063	16.720	***	
HQ2	<---	HQ	1.160	.199	5.840	***	
SQ6	<---	SQ	1.000				
SQ5	<---	SQ	1.107	.147	7.520	***	
OQ5	<---	OQ	1.000				
OQ4	<---	OQ	1.096	.126	8.727	***	
OQ3	<---	OQ	1.046	.124	8.421	***	
OQ2	<---	OQ	.800	.120	6.696	***	
OQ1	<---	OQ	1.040	.124	8.382	***	
HQ3	<---	HQ	.991	.190	5.223	***	
OSB2	<---	OSB	1.155	.088	13.179	***	
SQ4	<---	SQ	.510	.093	5.472	***	
HQ5	<---	HQ	1.376	.221	6.228	***	
HQ4	<---	HQ	1.000				
VM_3	<---	VM.	.730	.039	18.837	***	
OST4	<---	OSO.	1.046	.088	11.894	***	
OST3	<---	OSO.	1.020	.088	11.556	***	
OST2	<---	OSO.	.965	.089	10.848	***	
OST1	<---	OSO.	.916	.090	10.214	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
OSO.	<---	OS.	.537
OSB	<---	OS.	.416
HQ	<---	VSP.	.982
SQ	<---	VSP.	.322
OQ	<---	VSP.	.859
OSB3	<---	OSB	.822
OSB1	<---	OSB	.784
OSS4	<---	OSO.	.652
OSS3	<---	OSO.	.562
OSS2	<---	OSO.	.689
OSS1	<---	OSO.	.766
VM_5	<---	VM.	.835
VM_4	<---	VM.	.865
VM_2	<---	VM.	.942
VM_1	<---	VM.	.890
HQ2	<---	HQ	.608
SQ6	<---	SQ	.802
SQ5	<---	SQ	.888
OQ5	<---	OQ	.669
OQ4	<---	OQ	.733
OQ3	<---	OQ	.700
OQ2	<---	OQ	.536
OQ1	<---	OQ	.696
HQ3	<---	HQ	.504
OSB2	<---	OSB	.906
SQ4	<---	SQ	.409
HQ5	<---	HQ	.695
HQ4	<---	HQ	.511
VM_3	<---	VM.	.950
OST4	<---	OSO.	.801
OST3	<---	OSO.	.782
OST2	<---	OSO.	.739
OST1	<---	OSO.	.701

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
VM.	<-->	OS.	.370	.063	5.887	***	
VM.	<-->	VSP.	.117	.043	2.749	.006	
VM.	<-->	DOO	.301	.077	3.934	***	
OS.	<-->	VSP.	.152	.039	3.928	***	
OS.	<-->	DOO	.352	.066	5.330	***	
VSP.	<-->	DOO	.189	.054	3.511	***	
e12	<-->	e13	.185	.030	6.123	***	

Correlations: (Group number 1 - Default model)

			Estimate
VM.	<-->	OS.	.984
VM.	<-->	VSP.	.245
VM.	<-->	DOO	.296
OS.	<-->	VSP.	.711
OS.	<-->	DOO	.773
VSP.	<-->	DOO	.326
e12	<-->	e13	.564

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
VM.	.840	.115	7.336	***	
OS.	.168	.064	2.627	.009	
VSP.	.272	.080	3.400	***	
DOO	1.236	.122	10.149	***	
RS4	.010				
RS3	.506	.084	6.016	***	
RS5	.574	.108	5.331	***	
RS6	.117	.041	2.835	.005	
RS2	.416	.080	5.191	***	
e1	.356	.043	8.241	***	
e2	.387	.046	8.482	***	
e3	.451	.051	8.870	***	
e4	.506	.055	9.125	***	
e5	.323	.045	7.141	***	
e6	.178	.042	4.226	***	
e8	.572	.061	9.367	***	
e9	.680	.070	9.662	***	
e10	.523	.057	9.196	***	
e11	.411	.048	8.643	***	
e12	.365	.040	9.140	***	
e13	.295	.033	8.878	***	
e14	.049	.008	6.096	***	
e15	.060	.009	6.619	***	
e16	.245	.029	8.537	***	
e17	.570	.075	7.581	***	
e18	.799	.087	9.217	***	
e20	.355	.085	4.197	***	
e21	.210	.096	2.177	.029	
e22	.829	.085	9.764	***	
e25	.549	.064	8.581	***	
e26	.460	.058	7.889	***	
e27	.507	.061	8.285	***	
e28	.710	.076	9.379	***	
e29	.513	.062	8.327	***	
e7	.383	.048	7.958	***	
e53	.812	.088	9.242	***	
e19	.646	.075	8.566	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	68	539.213	367	.000	1.469
Saturated model	435	.000	0		
Independence model	29	3663.697	406	.000	9.024

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.078	.847	.819	.715
Saturated model	.000	1.000		
Independence model	.276	.293	.242	.273

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.853	.837	.948	.942	.947
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.904	.771	.856
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	172.213	114.130	238.286
Saturated model	.000	.000	.000
Independence model	3257.697	3067.782	3454.967

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.618	.836	.554	1.157
Saturated model	.000	.000	.000	.000
Independence model	17.785	15.814	14.892	16.772

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.039	.056	.662
Independence model	.197	.192	.203	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	675.213	698.395	901.838	969.838
Saturated model	870.000	1018.295	2319.733	2754.733
Independence model	3721.697	3731.584	3818.346	3847.346

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	3.278	2.996	3.598	3.390
Saturated model	4.223	4.223	4.223	4.943
Independence model	18.066	17.145	19.024	18.114

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	158	166
Independence model	26	27

2. Second order CFA model for All variables

Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
OSO.	<---	OS.	1.000				
OSB	<---	OS.	.828	.141	5.856	***	
COP	<---	PQ.	1.000				
PQT	<---	PQ.	.566	.074	7.649	***	
PQC	<---	PQ.	.037	.015	2.441	.015	
HQ	<---	VSP.	1.000				
SQ	<---	VSP.	.614	.145	4.242	***	
OQ	<---	VSP.	.912	.157	5.804	***	
OSB3	<---	OSB	1.048	.084	12.537	***	
OSB1	<---	OSB	1.000				
OSS4	<---	OSO.	.878	.092	9.559	***	
OSS3	<---	OSO.	.755	.093	8.120	***	
OSS2	<---	OSO.	.913	.091	9.985	***	
OSS1	<---	OSO.	1.000				
VM_5	<---	VM.	1.000				
VM_4	<---	VM.	1.019	.042	24.534	***	
VM_2	<---	VM.	.733	.038	19.208	***	
VM_1	<---	VM.	1.043	.059	17.678	***	
HQ2	<---	HQ	1.083	.174	6.217	***	

			Estimate	S.E.	C.R.	P	Label
SQ6	<---	SQ	1.000				
SQ5	<---	SQ	1.086	.131	8.301	***	
OQ5	<---	OQ	1.000				
OQ4	<---	OQ	1.122	.128	8.766	***	
OQ3	<---	OQ	1.043	.126	8.297	***	
OQ2	<---	OQ	.784	.120	6.515	***	
OQ1	<---	OQ	1.045	.126	8.314	***	
COP5	<---	COP	1.000				
COP4	<---	COP	.936	.034	27.344	***	
COP3	<---	COP	.947	.037	25.745	***	
COP2	<---	COP	.989	.036	27.213	***	
COP1	<---	COP	1.016	.041	24.840	***	
PQT4	<---	PQT	.968	.027	35.202	***	
PQT3	<---	PQT	.992	.023	42.281	***	
PQT2	<---	PQT	1.000				
PQT1	<---	PQT	.961	.021	44.944	***	
PQC4	<---	PQC	4.466	.360	12.418	***	
PQC3	<---	PQC	1.000				
PQC2	<---	PQC	4.721	.308	15.321	***	
PQC1	<---	PQC	5.009	.349	14.353	***	
COP6	<---	COP	.964	.047	20.402	***	
COP7	<---	COP	.944	.046	20.587	***	
COP8	<---	COP	.864	.051	16.927	***	
CPP1	<---	CP.	1.087	.058	18.680	***	
CPP2	<---	CP.	.886	.068	13.004	***	
CPP3	<---	CP.	1.000				
CPP4	<---	CP.	1.066	.058	18.510	***	
HQ3	<---	HQ	1.007	.173	5.822	***	
OSB2	<---	OSB	1.150	.086	13.423	***	
SQ4	<---	SQ	.511	.092	5.546	***	
HQ5	<---	HQ	1.262	.190	6.643	***	
HQ4	<---	HQ	1.000				
VM_3	<---	VM.	.713	.036	19.577	***	
OST4	<---	OSO.	1.053	.090	11.714	***	
OST3	<---	OSO.	1.046	.090	11.619	***	
OST2	<---	OSO.	.964	.091	10.610	***	
OST1	<---	OSO.	.916	.091	10.020	***	
CPC3	<---	CP.	.600	.043	13.822	***	
CPC2	<---	CP.	.637	.043	14.680	***	
CPC1	<---	CP.	.685	.040	17.024	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
OSO.	<---	OS.	.526
OSB	<---	OS.	.420
COP	<---	PQ.	.979
PQT	<---	PQ.	.518
PQC	<---	PQ.	.186

			Estimate
HQ	<---	VSP.	.984
SQ	<---	VSP.	.422
OQ	<---	VSP.	.762
OSB3	<---	OSB	.824
OSB1	<---	OSB	.786
OSS4	<---	OSO.	.665
OSS3	<---	OSO.	.572
OSS2	<---	OSO.	.691
OSS1	<---	OSO.	.757
VM_5	<---	VM.	.849
VM_4	<---	VM.	.878
VM_2	<---	VM.	.935
VM_1	<---	VM.	.897
HQ2	<---	HQ	.604
SQ6	<---	SQ	.809
SQ5	<---	SQ	.879
OQ5	<---	OQ	.667
OQ4	<---	OQ	.748
OQ3	<---	OQ	.695
OQ2	<---	OQ	.523
OQ1	<---	OQ	.697
COP5	<---	COP	.932
COP4	<---	COP	.947
COP3	<---	COP	.932
COP2	<---	COP	.946
COP1	<---	COP	.923
PQT4	<---	PQT	.936
PQT3	<---	PQT	.956
PQT2	<---	PQT	.992
PQT1	<---	PQT	.963
PQC4	<---	PQC	.765
PQC3	<---	PQC	.203
PQC2	<---	PQC	.890
PQC1	<---	PQC	.853
COP6	<---	COP	.867
COP7	<---	COP	.870
COP8	<---	COP	.803
CPP1	<---	CP.	.913
CPP2	<---	CP.	.745
CPP3	<---	CP.	.862
CPP4	<---	CP.	.909
HQ3	<---	HQ	.545
OSB2	<---	OSB	.903
SQ4	<---	SQ	.414
HQ5	<---	HQ	.678
HQ4	<---	HQ	.541
VM_3	<---	VM.	.943
OST4	<---	OSO.	.798
OST3	<---	OSO.	.792

			Estimate
OST2	<---	OSO.	.730
OST1	<---	OSO.	.694
CPC3	<---	CP.	.774
CPC2	<---	CP.	.803
CPC1	<---	CP.	.872

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
VM.	<-->	OS.	.365	.061	5.950	***	
VM.	<-->	VSP.	.140	.047	2.996	.003	
VM.	<-->	PQ.	-.340	.045	-7.506	***	
VM.	<-->	DOO	.302	.078	3.893	***	
OS.	<-->	VSP.	.166	.040	4.152	***	
OS.	<-->	PQ.	-.003	.025	-.116	.908	
OS.	<-->	DOO	.344	.064	5.365	***	
PQ.	<-->	VSP.	.094	.027	3.523	***	
VSP.	<-->	DOO	.209	.057	3.672	***	
PQ.	<-->	DOO	.018	.041	.442	.658	
VM.	<-->	CP.	-.401	.073	-5.454	***	
CP.	<-->	OS.	-.036	.046	-.782	.434	
CP.	<-->	VSP.	.119	.046	2.585	.010	
CP.	<-->	PQ.	.267	.042	6.387	***	
CP.	<-->	DOO	-.069	.075	-.920	.357	
e47	<-->	e51	.279	.033	8.462	***	
e12	<-->	e13	.158	.027	5.849	***	
e43	<-->	e44	.032	.007	4.882	***	
e35	<-->	e36	.015	.003	4.581	***	
e36	<-->	e41	.009	.004	2.380	.017	

Correlations: (Group number 1 - Default model)

			Estimate
VM.	<-->	OS.	.986
VM.	<-->	VSP.	.271
VM.	<-->	PQ.	-.717
VM.	<-->	DOO	.292
OS.	<-->	VSP.	.752
OS.	<-->	PQ.	-.014
OS.	<-->	DOO	.778
PQ.	<-->	VSP.	.333
VSP.	<-->	DOO	.339
PQ.	<-->	DOO	.032
VM.	<-->	CP.	-.457
CP.	<-->	OS.	-.096
CP.	<-->	VSP.	.228
CP.	<-->	PQ.	.558
CP.	<-->	DOO	-.066
e47	<-->	e51	.843

			Estimate
e12	<-->	e13	.524
e43	<-->	e44	.399
e35	<-->	e36	.431
e36	<-->	e41	.207

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
VM.	.868	.115	7.546	***	
CP.	.885	.115	7.700	***	
OS.	.158	.060	2.651	.008	
PQ.	.258	.034	7.661	***	
VSP.	.309	.083	3.726	***	
DOO	1.236	.122	10.149	***	
RS4	.010				
RS9	.010				
RS3	.506	.083	6.060	***	
RS5	.536	.096	5.556	***	
RS6	.186	.047	3.991	***	
RS7	.011	.015	.740	.459	
RS2	.412	.078	5.289	***	
RS8	.226	.023	9.684	***	
e1	.362	.043	8.388	***	
e2	.371	.044	8.456	***	
e3	.465	.052	9.002	***	
e4	.516	.056	9.219	***	
e5	.320	.044	7.273	***	
e6	.183	.040	4.589	***	
e8	.556	.059	9.356	***	
e9	.670	.069	9.663	***	
e10	.519	.056	9.230	***	
e11	.425	.048	8.797	***	
e12	.337	.037	9.222	***	
e13	.269	.030	8.968	***	
e14	.055	.007	7.306	***	
e15	.067	.009	7.717	***	
e16	.229	.026	8.723	***	
e17	.597	.073	8.174	***	
e18	.768	.083	9.211	***	
e20	.343	.077	4.448	***	
e21	.226	.085	2.673	.008	
e22	.825	.085	9.758	***	
e25	.553	.065	8.544	***	
e26	.438	.058	7.583	***	
e27	.514	.062	8.269	***	
e28	.723	.077	9.402	***	
e29	.512	.062	8.249	***	
e30	.041	.005	8.691	***	
e31	.027	.003	8.231	***	

	Estimate	S.E.	C.R.	P	Label
e32	.036	.004	8.678	***	
e33	.031	.004	8.274	***	
e34	.048	.005	8.872	***	
e35	.041	.005	8.908	***	
e36	.028	.003	8.232	***	
e37	.005	.002	2.527	.012	
e38	.022	.003	7.798	***	
e39	.146	.018	8.218	***	
e40	.241	.024	10.101	***	
e41	.061	.013	4.653	***	
e42	.097	.016	6.035	***	
e7	.381	.047	8.048	***	
e43	.083	.009	9.464	***	
e44	.077	.008	9.447	***	
e45	.111	.011	9.751	***	
e46	.213	.023	9.367	***	
e47	.198	.021	9.199	***	
e48	.131	.015	8.480	***	
e49	.211	.028	7.620	***	
e50	.306	.035	8.623	***	
e51	.555	.059	9.477	***	
e52	.209	.028	7.483	***	
e53	.765	.083	9.179	***	
e19	.652	.074	8.827	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	129	2745.984	1249	.000	2.199
Saturated model	1378	.000	0		
Independence model	52	11904.508	1326	.000	8.978

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.072	.889	.837	.815
Saturated model	.000	1.000		
Independence model	.216	.165	.132	.159

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.860	.850	.900	.898	.901
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.942	.725	.809
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	1496.984	1349.258	1652.390
Saturated model	.000	.000	.000
Independence model	10578.508	10232.985	10930.557

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	13.330	7.267	6.550	8.021
Saturated model	.000	.000	.000	.000
Independence model	57.789	51.352	49.675	53.061

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.076	.072	.080	.000
Independence model	.197	.194	.200	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	3003.984	3093.357	3433.905	3562.905
Saturated model	2756.000	3710.693	7348.486	8726.486
Independence model	12008.508	12044.534	12181.809	12233.809

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	14.582	13.865	15.337	15.016
Saturated model	13.379	13.379	13.379	18.013
Independence model	58.294	56.616	60.003	58.469

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	100	103
Independence model	25	26

APPENDIX G: EFA FOR DATA PARCELLING

1. Interaction effect between Vendor Management Capability and Cooperativeness (VMmCOP)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	25.142	62.855	62.855	25.142	62.855	62.855	7.339	18.348	18.348
2	3.066	7.664	70.520	3.066	7.664	70.520	6.956	17.390	35.738
3	1.950	4.875	75.394	1.950	4.875	75.394	6.767	16.919	52.656
4	1.730	4.324	79.719	1.730	4.324	79.719	6.761	16.903	69.559
5	1.238	3.096	82.815	1.238	3.096	82.815	5.302	13.256	82.815
6	1.117	2.794	85.608						
7	.972	2.431	88.039						
8	.904	2.261	90.300						
9	.740	1.851	92.151						
10	.528	1.321	93.472						
11	.486	1.216	94.688						
12	.336	.840	95.528						
13	.281	.702	96.230						
14	.226	.565	96.795						
15	.169	.423	97.219						
16	.133	.333	97.552						
17	.109	.273	97.825						
18	.097	.242	98.067						
19	.092	.229	98.296						
20	.084	.211	98.507						
21	.080	.201	98.708						
22	.062	.156	98.864						
23	.057	.142	99.006						
24	.047	.118	99.124						
25	.042	.105	99.229						
26	.039	.098	99.328						
27	.037	.093	99.420						
28	.033	.084	99.504						
29	.031	.077	99.581						
30	.029	.072	99.653						
31	.027	.067	99.720						
32	.021	.053	99.773						
33	.017	.041	99.815						
34	.016	.039	99.854						
35	.014	.035	99.889						
36	.013	.032	99.920						
37	.012	.029	99.949						
38	.010	.024	99.973						
39	.007	.017	99.990						
40	.004	.010	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
VM_1mCOP1	.271	.728	.233	.355	.124
VM_1mCOP2	.438	.474	.365	.454	.104
VM_1mCOP3	.622	.268	.264	.534	-.009
VM_1mCOP4	.469	.396	.465	.461	.140
VM_1mCOP5	.370	.472	.504	.349	.226
VM_1mCOP6	.074	.423	.452	.453	.370
VM_1mCOP7	.268	.133	.741	.321	.244
VM_1mCOP8	.169	.183	.092	.893	.115
VM_2mCOP1	.256	.745	.410	.195	.188
VM_2mCOP2	.395	.523	.548	.286	.194
VM_2mCOP3	.614	.339	.423	.426	.021
VM_2mCOP4	.403	.446	.617	.277	.183
VM_2mCOP5	.299	.492	.640	.157	.268
VM_2mCOP6	.039	.439	.611	.321	.433
VM_2mCOP7	.223	.236	.810	.190	.321
VM_2mCOP8	.197	.218	.278	.840	.148
VM_3mCOP1	.293	.776	.268	.229	.181
VM_3mCOP2	.436	.604	.392	.325	.158
VM_3mCOP3	.614	.359	.305	.436	.000
VM_3mCOP4	.466	.492	.472	.359	.165
VM_3mCOP5	.325	.558	.493	.224	.250
VM_3mCOP6	.058	.473	.461	.375	.456
VM_3mCOP7	.282	.239	.683	.237	.361
VM_3mCOP8	.201	.234	.184	.873	.123
VM_4mCOP1	.403	.641	.029	.087	.546
VM_4mCOP2	.583	.454	.290	.221	.338
VM_4mCOP3	.766	.220	.155	.345	.235
VM_4mCOP4	.574	.392	.409	.249	.343
VM_4mCOP5	.438	.447	.399	.110	.424
VM_4mCOP6	.095	.296	.206	.240	.822
VM_4mCOP7	.344	.068	.413	.089	.730
VM_4mCOP8	.198	.150	.187	.882	.142
VM_5mCOP1	.515	.549	.014	.035	.534
VM_5mCOP2	.687	.359	.271	.163	.341
VM_5mCOP3	.833	.135	.096	.292	.289
VM_5mCOP4	.672	.272	.343	.181	.345
VM_5mCOP5	.507	.383	.361	.061	.429
VM_5mCOP6	.140	.220	.205	.226	.810
VM_5mCOP7	.411	-.023	.389	.072	.725
VM_5mCOP8	.285	.042	.168	.819	.203

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 9 iterations.

2. Interaction effect between Vendor Management capability and Trust (VMmPQT)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.726	78.631	78.631	15.726	78.631	78.631	9.307	46.537	46.537
2	1.521	7.605	86.236	1.521	7.605	86.236	7.940	39.699	86.236
3	.863	4.315	90.551						
4	.487	2.435	92.986						
5	.459	2.296	95.282						
6	.327	1.634	96.916						
7	.307	1.535	98.450						
8	.123	.613	99.063						
9	.054	.268	99.331						
10	.030	.150	99.481						
11	.022	.112	99.593						
12	.020	.102	99.695						
13	.015	.077	99.773						
14	.013	.064	99.837						
15	.009	.044	99.881						
16	.007	.035	99.916						
17	.006	.031	99.947						
18	.005	.025	99.971						
19	.004	.018	99.989						
20	.002	.011	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component	
	1	2
VM_1mPQT1	.847	.337
VM_1mPQT2	.876	.326
VM_1mPQT3	.857	.355
VM_1mPQT4	.864	.316
VM_2mPQT1	.786	.497
VM_2mPQT2	.806	.481
VM_2mPQT3	.796	.488
VM_2mPQT4	.787	.462
VM_3mPQT1	.753	.512
VM_3mPQT2	.772	.520
VM_3mPQT3	.760	.535
VM_3mPQT4	.766	.506
VM_4mPQT1	.488	.783
VM_4mPQT2	.500	.802
VM_4mPQT3	.483	.795
VM_4mPQT4	.482	.776
VM_5mPQT1	.355	.867
VM_5mPQT2	.378	.875
VM_5mPQT3	.375	.868
VM_5mPQT4	.356	.854

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

3. Interaction effect between Vendor Management and Commitment (VMmPQC)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.874	64.369	64.369	12.874	64.369	64.369	6.991	34.953	34.953
2	1.669	8.346	72.715	1.669	8.346	72.715	4.488	22.441	57.394
3	1.273	6.364	79.078	1.273	6.364	79.078	4.337	21.684	79.078
4	.903	4.513	83.591						
5	.663	3.314	86.905						
6	.578	2.889	89.794						
7	.507	2.536	92.330						
8	.465	2.323	94.653						
9	.244	1.218	95.871						
10	.192	.962	96.832						
11	.143	.715	97.548						
12	.110	.548	98.096						
13	.099	.496	98.592						
14	.073	.363	98.955						
15	.060	.301	99.257						
16	.038	.190	99.447						
17	.035	.175	99.622						
18	.031	.157	99.779						
19	.027	.137	99.915						
20	.017	.085	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component		
	1	2	3
VM_1mPQC1	.400	.678	.295
VM_1mPQC2	.806	.165	.308
VM_1mPQC3	.802	.262	.340
VM_1mPQC4	.359	.135	.775
VM_2mPQC1	.447	.747	.287
VM_2mPQC2	.812	.320	.310
VM_2mPQC3	.773	.391	.296
VM_2mPQC4	.382	.277	.761
VM_3mPQC1	.361	.780	.269
VM_3mPQC2	.834	.296	.256
VM_3mPQC3	.791	.325	.295
VM_3mPQC4	.265	.233	.826
VM_4mPQC1	.265	.881	.205
VM_4mPQC2	.700	.401	.269
VM_4mPQC3	.692	.435	.255
VM_4mPQC4	.209	.246	.842
VM_5mPQC1	.349	.768	.226
VM_5mPQC2	.735	.393	.279
VM_5mPQC3	.686	.415	.242
VM_5mPQC4	.260	.254	.781

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

4. Interaction effect between Vendor Management and Partners' Compatibility (VMmCP)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	18.484	52.811	52.811	18.484	52.811	52.811	12.329	35.226	35.226
2	4.568	13.053	65.863	4.568	13.053	65.863	8.277	23.647	58.873
3	2.428	6.938	72.801	2.428	6.938	72.801	4.875	13.928	72.801
4	1.908	5.452	78.253						
5	1.588	4.536	82.789						
6	.963	2.751	85.540						
7	.831	2.374	87.913						
8	.788	2.251	90.165						
9	.503	1.437	91.602						
10	.477	1.364	92.965						
11	.462	1.321	94.286						
12	.383	1.093	95.379						
13	.289	.825	96.204						
14	.192	.549	96.754						
15	.161	.459	97.213						
16	.145	.414	97.627						
17	.120	.344	97.971						
18	.112	.319	98.289						
19	.092	.262	98.551						
20	.083	.238	98.790						
21	.074	.212	99.002						
22	.066	.190	99.192						
23	.050	.143	99.334						
24	.043	.122	99.456						
25	.038	.110	99.566						
26	.033	.094	99.660						
27	.026	.075	99.734						
28	.019	.055	99.789						
29	.018	.052	99.842						
30	.014	.039	99.880						
31	.012	.035	99.915						
32	.010	.028	99.943						
33	.008	.024	99.967						
34	.007	.021	99.988						
35	.004	.012	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component		
	1	2	3
VM_1mCPC1	.807	.186	.203
VM_1mCPC2	.296	.823	.107
VM_1mCPC3	.356	.152	.784
VM_1mCPP1	.777	.312	.127
VM_1mCPP2	.243	.844	.088
VM_1mCPP3	.731	.198	.210
VM_1mCPP4	.705	.327	.364
VM_2mCPC1	.835	.116	.218
VM_2mCPC2	.289	.825	.080
VM_2mCPC3	.335	.076	.846
VM_2mCPP1	.836	.253	.117
VM_2mCPP2	.207	.858	.061
VM_2mCPP3	.771	.176	.188
VM_2mCPP4	.751	.280	.403
VM_3mCPC1	.817	.142	.205
VM_3mCPC2	.258	.841	.128
VM_3mCPC3	.305	.151	.861
VM_3mCPP1	.787	.299	.167
VM_3mCPP2	.182	.881	.138
VM_3mCPP3	.726	.241	.251
VM_3mCPP4	.712	.341	.401
VM_4mCPC1	.808	.178	.167
VM_4mCPC2	.279	.832	.105
VM_4mCPC3	.292	.139	.853
VM_4mCPP1	.777	.316	.127
VM_4mCPP2	.222	.862	.095
VM_4mCPP3	.721	.217	.209
VM_4mCPP4	.702	.355	.361
VM_5mCPC1	.746	.091	.144
VM_5mCPC2	.181	.783	.124
VM_5mCPC3	.229	.116	.841
VM_5mCPP1	.714	.219	.142
VM_5mCPP2	.146	.802	.144
VM_5mCPP3	.646	.168	.209
VM_5mCPP4	.623	.269	.398

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

5. Interaction effect between Vendors' Service Performance and Cooperativeness (VSPmCOP)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	22.686	23.631	23.631	22.686	23.631	23.631	14.260	14.854	14.854
2	10.012	10.429	34.061	10.012	10.429	34.061	9.932	10.346	25.200
3	6.277	6.539	40.599	6.277	6.539	40.599	8.859	9.228	34.428
4	5.976	6.225	46.825	5.976	6.225	46.825	7.575	7.891	42.319
5	4.405	4.589	51.413	4.405	4.589	51.413	6.849	7.135	49.453
6	4.275	4.453	55.867	4.275	4.453	55.867	6.157	6.413	55.867
7	3.923	4.086	59.953						
8	3.596	3.746	63.699						
9	2.899	3.020	66.719						
10	2.518	2.623	69.341						
11	2.216	2.308	71.650						
12	2.103	2.191	73.841						
13	1.956	2.038	75.879						
14	1.677	1.747	77.626						
15	1.413	1.472	79.098						
16	1.346	1.403	80.501						
17	1.132	1.179	81.680						
18	1.036	1.079	82.759						
19	.963	1.003	83.762						
20	.948	.988	84.750						
21	.890	.927	85.677						
22	.811	.845	86.521						
23	.704	.733	87.254						
24	.678	.706	87.960						
25	.603	.628	88.588						
26	.601	.627	89.215						
27	.582	.607	89.822						
28	.538	.561	90.382						
29	.514	.536	90.918						
30	.495	.516	91.434						
31	.449	.468	91.902						
32	.436	.454	92.356						
33	.383	.399	92.754						
34	.361	.376	93.130						
35	.331	.345	93.475						
36	.327	.341	93.816						
37	.320	.334	94.150						
38	.313	.326	94.476						
39	.293	.305	94.781						
40	.268	.280	95.060						
41	.261	.271	95.332						
42	.245	.255	95.586						
43	.233	.243	95.829						
44	.227	.236	96.065						
45	.206	.215	96.280						
46	.192	.200	96.480						
47	.190	.198	96.678						
48	.170	.177	96.855						
49	.160	.167	97.022						
50	.159	.165	97.188						
51	.153	.159	97.346						
52	.147	.153	97.499						
53	.133	.138	97.637						
54	.126	.131	97.769						
55	.121	.126	97.895						
56	.116	.121	98.016						
57	.113	.118	98.134						
58	.111	.115	98.249						
59	.108	.112	98.362						
60	.097	.101	98.462						
61	.092	.096	98.559						
62	.088	.092	98.651						

63	.083	.086	98.737							
64	.080	.084	98.821							
65	.079	.083	98.904							
66	.074	.077	98.981							
67	.071	.074	99.054							
68	.068	.070	99.125							
69	.064	.067	99.192							
70	.060	.063	99.255							
71	.060	.062	99.317							
72	.056	.059	99.376							
73	.053	.056	99.431							
74	.048	.050	99.481							
75	.043	.045	99.526							
76	.040	.042	99.568							
77	.040	.042	99.610							
78	.037	.039	99.648							
79	.036	.038	99.686							
80	.031	.033	99.719							
81	.029	.030	99.749							
82	.028	.030	99.779							
83	.025	.026	99.805							
84	.024	.025	99.830							
85	.022	.023	99.853							
86	.021	.021	99.875							
87	.018	.019	99.893							
88	.017	.017	99.911							
89	.015	.015	99.926							
90	.014	.015	99.941							
91	.012	.013	99.954							
92	.011	.011	99.965							
93	.010	.010	99.975							
94	.009	.009	99.984							
95	.008	.009	99.992							
96	.007	.008	100.000							

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
SQ4mCOP1	.105	.145	.078	.037	-.053	.775
SQ4mCOP2	.141	.235	.056	.046	-.104	.783
SQ4mCOP3	.154	.253	.091	.016	-.090	.749
SQ4mCOP4	.135	.229	.096	.017	-.082	.764
SQ4mCOP5	.139	.281	.084	.053	-.038	.778
SQ4mCOP6	.137	.308	.024	.073	-.054	.679
SQ4mCOP7	.108	.197	.055	.023	.024	.725
SQ4mCOP8	.116	.000	-.013	.042	.000	.465
SQ5mCOP1	.031	.693	.042	-.018	-.047	.138
SQ5mCOP2	-.025	.761	.065	.024	-.010	.187
SQ5mCOP3	-.083	.796	.066	.069	-.031	.177
SQ5mCOP4	-.054	.726	.045	.054	-.024	.168
SQ5mCOP5	.009	.678	.043	.016	-.001	.243
SQ5mCOP6	-.003	.634	.054	.035	.071	.240
SQ5mCOP7	-.024	.629	.129	.011	.058	.188
SQ5mCOP8	-.162	.468	-.037	.160	.166	-.081
SQ6mCOP1	.043	.765	.055	.028	.050	-.038
SQ6mCOP2	.064	.811	.048	.047	.012	.028
SQ6mCOP3	.035	.833	-.013	.094	.094	.038
SQ6mCOP4	.021	.784	.003	.063	.044	.017
SQ6mCOP5	.056	.724	.052	.021	.002	.075
SQ6mCOP6	.031	.641	.071	.020	.076	.170
SQ6mCOP7	.041	.662	.137	-.033	.058	.049
SQ6mCOP8	-.121	.560	-.136	.124	.168	-.118
HQ2mCOP1	.146	-.012	.552	.000	.402	.129
HQ2mCOP2	.097	-.018	.595	.120	.365	.084
HQ2mCOP3	.128	-.022	.550	.135	.444	.136
HQ2mCOP4	.092	-.044	.605	.070	.472	.141

HQ2mCOP5	.089	-.020	.540	.114	.454	.144
HQ2mCOP6	.097	-.008	.479	.096	.466	.121
HQ2mCOP7	.167	.047	.428	.066	.417	.126
HQ2mCOP8	.042	-.094	.377	.132	.429	.141
HQ3mCOP1	.239	.044	.107	.072	.737	-.118
HQ3mCOP2	.182	.089	.045	.111	.755	-.144
HQ3mCOP3	.229	.092	.067	.002	.784	-.120
HQ3mCOP4	.214	.067	.087	.023	.801	-.108
HQ3mCOP5	.230	.063	.095	.056	.801	-.081
HQ3mCOP6	.211	.103	.067	-.014	.766	-.037
HQ3mCOP7	.229	.062	.111	.038	.770	-.010
HQ3mCOP8	.229	.164	.113	-.100	.622	-.052
HQ4mCOP1	.121	-.073	.076	.625	.014	.125
HQ4mCOP2	.126	-.025	.050	.721	.032	.133
HQ4mCOP3	.142	-.028	.072	.760	-.004	.101
HQ4mCOP4	.138	-.038	.018	.753	-.002	.121
HQ4mCOP5	.097	-.067	.067	.655	.041	.169
HQ4mCOP6	.019	-.039	.102	.556	.042	.229
HQ4mCOP7	.053	-.080	.102	.590	.097	.187
HQ4mCOP8	.074	-.039	.061	.554	.018	.154
HQ5mCOP1	.210	.051	.710	.280	.044	.013
HQ5mCOP2	.168	.112	.761	.281	.000	.034
HQ5mCOP3	.192	.085	.763	.304	.005	.026
HQ5mCOP4	.222	.065	.766	.250	.027	.046
HQ5mCOP5	.218	.082	.725	.245	.061	.081
HQ5mCOP6	.216	.113	.672	.151	.027	.055
HQ5mCOP7	.231	.127	.675	.165	.042	.065
HQ5mCOP8	.140	-.033	.503	.172	.105	.015
OQ1mCOP1	.586	.227	.486	-.016	.003	-.216
OQ1mCOP2	.585	.250	.468	-.017	-.059	-.179
OQ1mCOP3	.609	.201	.436	.053	.038	-.126
OQ1mCOP4	.638	.209	.461	-.029	-.018	-.172
OQ1mCOP5	.633	.239	.442	-.070	.000	-.160
OQ1mCOP6	.531	.197	.441	-.088	-.004	-.084
OQ1mCOP7	.575	.207	.476	-.086	.029	-.165
OQ1mCOP8	.439	.032	.235	.054	.133	-.111
OQ2mCOP1	.190	.211	.239	.518	.012	-.223
OQ2mCOP2	.177	.240	.271	.665	.062	-.195
OQ2mCOP3	.189	.250	.269	.709	-.016	-.174
OQ2mCOP4	.192	.200	.242	.689	-.008	-.219
OQ2mCOP5	.153	.181	.245	.626	.059	-.175
OQ2mCOP6	.159	.249	.206	.567	.109	-.096
OQ2mCOP7	.165	.233	.214	.541	.106	-.146
OQ2mCOP8	.182	.210	.117	.476	-.007	-.134
OQ3mCOP1	.583	-.080	.256	.150	.100	.244
OQ3mCOP2	.655	-.100	.195	.122	.010	.261
OQ3mCOP3	.666	-.139	.192	.214	.022	.264
OQ3mCOP4	.649	-.134	.235	.184	.045	.240
OQ3mCOP5	.636	-.115	.249	.112	.038	.262
OQ3mCOP6	.516	-.043	.221	.108	.148	.217
OQ3mCOP7	.561	-.067	.277	.108	.134	.262
OQ3mCOP8	.480	-.258	.136	.219	.133	.217
OQ4mCOP1	.646	.232	-.007	.134	.188	.187
OQ4mCOP2	.654	.238	-.040	.221	.117	.219
OQ4mCOP3	.663	.215	-.021	.184	.206	.175
OQ4mCOP4	.696	.199	-.041	.155	.170	.200
OQ4mCOP5	.658	.207	-.025	.105	.182	.225
OQ4mCOP6	.535	.209	.023	.082	.218	.200
OQ4mCOP7	.573	.184	.065	.051	.238	.237
OQ4mCOP8	.472	.081	-.080	.174	.227	.093
OQ5mCOP1	.726	-.158	.160	.133	.152	-.042
OQ5mCOP2	.778	-.152	.137	.174	.112	-.017
OQ5mCOP3	.768	-.208	.121	.183	.122	-.007
OQ5mCOP4	.794	-.174	.124	.156	.106	-.047
OQ5mCOP5	.791	-.113	.108	.132	.153	-.033
OQ5mCOP6	.677	-.085	.155	.076	.183	.009
OQ5mCOP7	.716	-.115	.185	.112	.211	-.037
OQ5mCOP8	.629	-.267	.035	.107	.132	.025

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 11 iterations.

6. Interaction effect between Vendors' Service Performance and Trust (VSPmPQT)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.853	28.861	28.861	13.853	28.861	28.861	8.825	18.386	18.386
2	5.821	12.128	40.988	5.821	12.128	40.988	6.554	13.654	32.040
3	4.535	9.449	50.437	4.535	9.449	50.437	5.687	11.848	43.888
4	3.997	8.327	58.764	3.997	8.327	58.764	5.440	11.334	55.222
5	3.164	6.593	65.356	3.164	6.593	65.356	3.958	8.246	63.468
6	2.899	6.039	71.395	2.899	6.039	71.395	3.805	7.927	71.395
7	2.792	5.816	77.211						
8	2.082	4.337	81.548						
9	1.788	3.724	85.272						
10	1.649	3.435	88.708						
11	1.211	2.523	91.231						
12	.956	1.992	93.223						
13	.617	1.286	94.509						
14	.485	1.010	95.520						
15	.437	.911	96.430						
16	.244	.508	96.939						
17	.192	.399	97.338						
18	.155	.323	97.662						
19	.150	.313	97.975						
20	.110	.229	98.203						
21	.098	.204	98.408						
22	.078	.164	98.571						
23	.073	.153	98.724						
24	.061	.128	98.852						
25	.059	.122	98.974						
26	.051	.106	99.081						
27	.047	.098	99.179						
28	.043	.090	99.268						
29	.040	.083	99.351						
30	.038	.079	99.430						
31	.036	.076	99.506						
32	.030	.062	99.568						
33	.026	.055	99.623						
34	.024	.050	99.673						
35	.021	.043	99.716						
36	.018	.039	99.755						
37	.017	.036	99.791						
38	.017	.035	99.826						
39	.015	.031	99.857						
40	.013	.028	99.885						
41	.012	.026	99.911						
42	.010	.020	99.931						

43	.008	.017	99.948
44	.007	.015	99.963
45	.006	.012	99.976
46	.005	.009	99.985
47	.004	.008	99.993
48	.003	.007	100.000

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
SQ4mPQT1	.169	.153	.039	.128	.062	.890
SQ4mPQT2	.173	.144	.037	.127	.066	.896
SQ4mPQT3	.177	.132	.041	.117	.062	.897
SQ4mPQT4	.182	.113	.067	.104	.061	.850
SQ5mPQT1	-.021	.820	.156	.086	-.011	.202
SQ5mPQT2	-.024	.867	.152	.117	.019	.182
SQ5mPQT3	-.017	.839	.140	.124	.018	.174
SQ5mPQT4	-.011	.850	.144	.099	.016	.157
SQ6mPQT1	.180	.878	.047	.042	.039	.022
SQ6mPQT2	.170	.880	.039	.076	.060	-.006
SQ6mPQT3	.159	.879	.034	.068	.066	-.034
SQ6mPQT4	.155	.885	.047	.068	.059	-.047
HQ2mPQT1	.197	.118	.822	-.034	.111	-.028
HQ2mPQT2	.192	.137	.834	-.024	.096	-.013
HQ2mPQT3	.191	.138	.831	-.040	.097	-.005
HQ2mPQT4	.184	.138	.811	-.021	.081	.003
HQ3mPQT1	.146	.023	.171	-.050	.887	.065
HQ3mPQT2	.135	.062	.159	-.071	.898	.084
HQ3mPQT3	.129	.070	.156	-.079	.894	.076
HQ3mPQT4	.137	.061	.142	-.077	.881	.070
HQ4mPQT1	.180	-.024	-.055	.751	-.004	.123
HQ4mPQT2	.176	.021	-.047	.757	-.006	.146
HQ4mPQT3	.158	.002	-.062	.747	-.018	.145
HQ4mPQT4	.166	-.008	-.044	.742	-.020	.107
HQ5mPQT1	.078	.070	.648	.453	.148	.097
HQ5mPQT2	.079	.084	.655	.461	.135	.109
HQ5mPQT3	.080	.079	.668	.437	.106	.111
HQ5mPQT4	.085	.082	.651	.453	.115	.103
OQ1mPQT1	.695	.079	.072	.152	.131	-.030
OQ1mPQT2	.690	.119	.073	.146	.110	-.022
OQ1mPQT3	.679	.107	.076	.140	.111	-.024
OQ1mPQT4	.675	.073	.083	.152	.101	-.032
OQ2mPQT1	.171	.204	.281	.712	-.099	-.004
OQ2mPQT2	.172	.253	.272	.720	-.116	-.009
OQ2mPQT3	.157	.222	.284	.700	-.118	-.030
OQ2mPQT4	.161	.217	.277	.693	-.118	-.053
OQ3mPQT1	.592	.006	.360	.028	-.343	.249
OQ3mPQT2	.599	-.005	.384	.034	-.355	.274
OQ3mPQT3	.573	-.028	.397	.034	-.369	.279
OQ3mPQT4	.572	-.020	.372	.025	-.351	.250
OQ4mPQT1	.777	.211	.158	.056	.114	.149
OQ4mPQT2	.766	.220	.166	.073	.117	.176

OQ4mPQT3	.754	.201	.196	.053	.114	.165
OQ4mPQT4	.771	.168	.190	.055	.101	.131
OQ5mPQT1	.798	-.055	.018	.176	.040	.063
OQ5mPQT2	.799	-.044	.005	.189	.033	.097
OQ5mPQT3	.792	-.076	.019	.179	.005	.105
OQ5mPQT4	.787	-.069	.031	.196	.021	.093

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

7. Interaction effect between Vendors' Service Performance and Commitment (VSPmPQC)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.186	23.304	23.304	11.186	23.304	23.304	6.812	14.192	14.192
2	4.594	9.570	32.874	4.594	9.570	32.874	5.420	11.291	25.483
3	3.280	6.834	39.708	3.280	6.834	39.708	4.452	9.275	34.758
4	2.790	5.813	45.521	2.790	5.813	45.521	4.264	8.883	43.641
5	2.473	5.152	50.673	2.473	5.152	50.673	3.375	7.032	50.673
6	2.311	4.814	55.487						
7	2.023	4.215	59.702						
8	1.929	4.018	63.720						
9	1.832	3.817	67.537						
10	1.611	3.356	70.893						
11	1.325	2.761	73.654						
12	1.274	2.654	76.308						
13	1.183	2.464	78.772						
14	1.096	2.283	81.055						
15	.919	1.916	82.971						
16	.886	1.846	84.817						
17	.784	1.633	86.449						
18	.645	1.343	87.792						
19	.560	1.167	88.959						
20	.491	1.023	89.982						
21	.450	.938	90.920						
22	.425	.885	91.805						
23	.390	.813	92.618						
24	.362	.754	93.372						
25	.324	.675	94.047						
26	.302	.629	94.675						
27	.271	.565	95.241						
28	.243	.507	95.748						
29	.198	.413	96.161						
30	.192	.399	96.561						
31	.176	.366	96.926						
32	.168	.350	97.276						
33	.160	.334	97.610						
34	.147	.306	97.916						
35	.123	.255	98.171						
36	.121	.252	98.423						
37	.112	.234	98.656						
38	.105	.219	98.875						
39	.094	.195	99.071						
40	.080	.166	99.237						
41	.074	.153	99.390						
42	.062	.129	99.519						
43	.051	.107	99.626						
44	.047	.098	99.724						
45	.043	.089	99.813						
46	.039	.082	99.895						
47	.032	.066	99.961						
48	.019	.039	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
SQ4mPQC1	.267	.527	.122	-.390	.038
SQ4mPQC2	.274	.520	.066	-.358	.022
SQ4mPQC3	.172	.494	.207	-.444	.021
SQ4mPQC4	.227	.531	.119	-.207	.025
SQ5mPQC1	.018	.704	.099	.150	.019
SQ5mPQC2	-.043	.757	.135	.143	.085
SQ5mPQC3	-.047	.711	.122	.220	.029
SQ5mPQC4	-.011	.635	.151	.008	.135
SQ6mPQC1	.109	.661	-.095	.147	-.061
SQ6mPQC2	.008	.694	-.153	.174	.039
SQ6mPQC3	.059	.695	-.035	.253	.010
SQ6mPQC4	.049	.634	-.008	.018	.091
HQ2mPQC1	.234	.103	.021	.467	.103
HQ2mPQC2	.242	.035	.072	.485	.278
HQ2mPQC3	.210	-.001	.061	.611	.275
HQ2mPQC4	.156	.097	.264	.240	.265
HQ3mPQC1	.160	.097	.067	.069	.747
HQ3mPQC2	.182	.041	.069	.105	.849
HQ3mPQC3	.182	.030	-.041	.225	.802
HQ3mPQC4	.051	.132	.252	-.044	.727
HQ4mPQC1	.260	.009	.507	.081	-.099
HQ4mPQC2	.219	-.094	.673	.040	.088
HQ4mPQC3	.166	-.024	.526	.175	.035
HQ4mPQC4	.155	.011	.695	-.062	.121
HQ5mPQC1	.237	.140	.273	.549	-.094
HQ5mPQC2	.219	.082	.460	.494	.016
HQ5mPQC3	.252	.165	.260	.660	.022
HQ5mPQC4	.086	.111	.572	.206	.088
OQ1mPQC1	.629	.164	-.010	.314	.060
OQ1mPQC2	.599	.100	.026	.255	.244
OQ1mPQC3	.587	.055	-.098	.485	.161
OQ1mPQC4	.441	.140	.265	-.001	.232
OQ2mPQC1	.094	.162	.425	.453	-.038
OQ2mPQC2	-.028	.113	.553	.479	.096
OQ2mPQC3	.053	.176	.347	.658	.013
OQ2mPQC4	-.003	.136	.682	.184	.127
OQ3mPQC1	.697	.063	.231	.050	-.167
OQ3mPQC2	.721	.003	.236	.053	-.087
OQ3mPQC3	.643	.026	.112	.214	-.048
OQ3mPQC4	.482	.107	.424	-.057	-.032
OQ4mPQC1	.595	.299	.246	-.003	.095
OQ4mPQC2	.610	.236	.288	.000	.229
OQ4mPQC3	.550	.208	.156	.175	.214
OQ4mPQC4	.455	.259	.464	-.105	.233
OQ5mPQC1	.713	-.038	.036	.131	.097
OQ5mPQC2	.729	-.107	.118	.119	.272
OQ5mPQC3	.682	-.079	.009	.288	.275
OQ5mPQC4	.497	-.028	.344	-.084	.262

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 9 iterations.

8. Interaction effect between Vendors' Service Performance and Partners' Compatibility (VSPmCP).

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	22.630	26.940	26.940	22.630	26.940	26.940	11.101	13.216	13.216
2	7.295	8.684	35.624	7.295	8.684	35.624	8.289	9.868	23.084
3	5.123	6.099	41.723	5.123	6.099	41.723	8.223	9.789	32.873
4	4.410	5.250	46.974	4.410	5.250	46.974	6.796	8.090	40.963
5	4.031	4.799	51.773	4.031	4.799	51.773	6.601	7.858	48.821
6	3.463	4.123	55.896	3.463	4.123	55.896	5.943	7.075	55.896
7	3.437	4.091	59.987						
8	2.880	3.429	63.416						
9	2.563	3.052	66.468						
10	2.478	2.949	69.417						
11	2.158	2.570	71.987						
12	1.828	2.176	74.163						
13	1.757	2.091	76.254						
14	1.398	1.664	77.918						
15	1.309	1.559	79.477						
16	1.242	1.479	80.956						
17	1.024	1.219	82.175						
18	.983	1.170	83.345						
19	.828	.985	84.331						
20	.806	.960	85.291						
21	.776	.924	86.215						
22	.744	.886	87.101						
23	.721	.859	87.959						
24	.657	.782	88.741						
25	.615	.732	89.474						
26	.540	.642	90.116						
27	.505	.601	90.717						
28	.477	.568	91.285						
29	.462	.550	91.835						
30	.415	.494	92.329						
31	.390	.464	92.793						
32	.382	.455	93.248						
33	.347	.413	93.661						
34	.343	.408	94.069						
35	.310	.368	94.437						
36	.284	.338	94.775						
37	.263	.313	95.089						
38	.257	.306	95.395						
39	.249	.297	95.692						
40	.232	.276	95.968						
41	.220	.262	96.230						

42	.202	.241	96.471						
43	.194	.231	96.702						
44	.193	.230	96.932						
45	.180	.215	97.146						
46	.173	.206	97.352						
47	.163	.194	97.546						
48	.159	.189	97.735						
49	.146	.173	97.909						
50	.143	.170	98.079						
51	.132	.157	98.236						
52	.124	.147	98.384						
53	.114	.136	98.520						
54	.106	.126	98.646						
55	.096	.114	98.760						
56	.086	.102	98.862						
57	.084	.101	98.963						
58	.081	.097	99.060						
59	.074	.088	99.148						
60	.070	.083	99.231						
61	.067	.080	99.310						
62	.059	.070	99.380						
63	.051	.061	99.441						
64	.045	.054	99.495						
65	.044	.053	99.547						
66	.043	.051	99.598						
67	.041	.049	99.647						
68	.039	.046	99.693						
69	.035	.041	99.735						
70	.030	.035	99.770						
71	.028	.033	99.804						
72	.026	.031	99.834						
73	.023	.028	99.862						
74	.022	.026	99.888						
75	.020	.024	99.912						
76	.017	.020	99.933						
77	.013	.016	99.949						
78	.012	.014	99.963						
79	.010	.012	99.974						
80	.009	.011	99.985						
81	.007	.009	99.994						
82	.004	.004	99.998						
83	.002	.002	100.000						
84	.000	.000	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
SQ4mCPC1	.175	-.184	.181	-.012	.565	.322
SQ4mCPC2	.118	-.001	.366	.077	.488	.144
SQ4mCPC3	.107	-.199	.210	.063	.493	.131
SQ4mCPP1	.188	-.172	.292	.029	.637	.221
SQ4mCPP2	.150	.003	.305	.059	.478	.133
SQ4mCPP3	.135	-.185	.289	-.007	.499	.334
SQ4mCPP4	.202	-.096	.284	.025	.652	.225
SQ5mCPC1	.054	.114	.611	.057	.004	.329
SQ5mCPC2	-.027	-.032	.678	.130	.081	.181
SQ5mCPC3	.012	.012	.556	.138	-.059	.135
SQ5mCPP1	-.016	.091	.772	.050	-.042	.263
SQ5mCPP2	.000	-.026	.615	.102	.058	.200
SQ5mCPP3	.023	.127	.765	.108	.017	.240
SQ5mCPP4	.036	.060	.784	.108	-.034	.248
SQ6mCPC1	.114	.081	.654	-.017	.147	.009
SQ6mCPC2	.060	.016	.657	.137	.336	-.117
SQ6mCPC3	.038	.063	.603	.123	.105	-.198
SQ6mCPP1	.104	.098	.774	.057	.211	-.088
SQ6mCPP2	.088	.009	.582	.099	.337	-.111
SQ6mCPP3	.055	.088	.793	.067	.075	-.035
SQ6mCPP4	.127	.136	.793	.093	.211	-.109
HQ2mCPC1	.108	.598	.092	.183	.065	.144
HQ2mCPC2	.114	.548	.047	.330	.257	.038
HQ2mCPC3	.034	.530	.011	.408	.016	-.076
HQ2mCPP1	.153	.711	.088	.217	.110	.074
HQ2mCPP2	.130	.543	.018	.335	.251	.033
HQ2mCPP3	.130	.672	.118	.231	.014	.134
HQ2mCPP4	.163	.627	.105	.270	.151	.100
HQ3mCPC1	.237	.035	.182	.669	-.035	.176
HQ3mCPC2	.143	.163	.134	.742	.084	.091
HQ3mCPC3	.103	.225	.161	.631	-.057	-.024
HQ3mCPP1	.223	.092	.178	.701	-.003	.119
HQ3mCPP2	.184	.156	.096	.709	.071	.084
HQ3mCPP3	.161	.088	.202	.738	-.068	.170
HQ3mCPP4	.177	.135	.206	.783	-.009	.131
HQ4mCPC1	.027	.252	.110	.008	.625	.025
HQ4mCPC2	.050	.343	.008	.100	.665	-.037
HQ4mCPC3	.048	.222	-.061	.042	.584	-.029
HQ4mCPP1	.104	.325	.011	.012	.702	-.011
HQ4mCPP2	.046	.322	.023	.104	.652	-.055
HQ4mCPP3	.014	.321	.018	-.023	.574	.080
HQ4mCPP4	.077	.326	.010	.014	.765	.029
HQ5mCPC1	.257	.648	.083	-.076	.028	.177
HQ5mCPC2	.229	.608	-.037	.103	.242	.142
HQ5mCPC3	.141	.490	.026	.281	.024	.093
HQ5mCPP1	.263	.724	.055	-.004	.112	.158
HQ5mCPP2	.225	.606	-.038	.122	.231	.150
HQ5mCPP3	.232	.710	.056	-.026	.003	.225
HQ5mCPP4	.263	.666	.053	.031	.156	.190
OQ1mCPC1	.591	.436	.202	-.079	-.036	-.047
OQ1mCPC2	.567	.352	.135	.064	.241	-.218
OQ1mCPC3	.414	.343	.149	.152	.015	-.230
OQ1mCPP1	.620	.479	.180	-.016	.102	-.147
OQ1mCPP2	.555	.340	.116	.075	.210	-.221
OQ1mCPP3	.586	.457	.200	-.068	-.055	-.084
OQ1mCPP4	.644	.432	.228	-.013	.120	-.124
OQ2mCPC1	.235	.127	.227	.103	.049	.715
OQ2mCPC2	.094	.152	.069	.195	.236	.706
OQ2mCPC3	.098	.112	.021	.059	.032	.666
OQ2mCPP1	.178	.185	.130	.076	.085	.775
OQ2mCPP2	.102	.156	.053	.181	.197	.709
OQ2mCPP3	.177	.176	.151	.111	.076	.777
OQ2mCPP4	.194	.204	.121	.127	.108	.803
OQ3mCPC1	.519	.124	.050	.398	.130	.219
OQ3mCPC2	.562	.097	-.007	.496	.278	.040
OQ3mCPC3	.324	.231	-.022	.476	.142	-.016
OQ3mCPP1	.603	.159	.027	.419	.212	.099

OQ3mCPP2	.566	.109	-.027	.504	.259	.043
OQ3mCPP3	.528	.181	.032	.424	.077	.201
OQ3mCPP4	.601	.170	.052	.443	.242	.113
OQ4mCPC1	.513	.146	.214	.258	.112	.387
OQ4mCPC2	.567	.143	.219	.334	.240	.119
OQ4mCPC3	.358	.152	.118	.354	.112	.130
OQ4mCPP1	.598	.176	.200	.264	.192	.264
OQ4mCPP2	.564	.173	.182	.335	.223	.131
OQ4mCPP3	.570	.197	.223	.281	.059	.319
OQ4mCPP4	.612	.198	.241	.303	.190	.251
OQ5mCPC1	.736	.002	.028	.036	-.017	.195
OQ5mCPC2	.706	.111	-.117	.162	.084	.078
OQ5mCPC3	.483	.170	.004	.143	.007	.161
OQ5mCPP1	.769	.092	-.075	.092	.045	.154
OQ5mCPP2	.688	.105	-.059	.212	.100	.081
OQ5mCPP3	.756	.087	-.038	.054	-.045	.209
OQ5mCPP4	.796	.093	-.035	.085	.027	.175

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 8 iterations.

9. Interaction effect between Degree of outsourcing and Partners' Compatibility (DOOmPC)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.897	55.665	55.665	3.897	55.665	55.665
2	1.314	18.778	74.443			
3	.817	11.678	86.121			
4	.404	5.776	91.896			
5	.258	3.684	95.580			
6	.208	2.969	98.550			
7	.102	1.450	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
DOOmCPC1	.728
DOOmCPC2	.764
DOOmCPC3	.534
DOOmCPP1	.709
DOOmCPP2	.719
DOOmCPP3	.875
DOOmCPP4	.843

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

APPENDIX H: MODEL FIT COMPARISON

1. Models for Moderating Effects of CP and PQ on the relationship between Vendor management capability (VM) and Outsourcing success (OS).

GOF Indices	Model 1	Model 2	Model 3
	VMmCP	VMmPQ	VMmCP and VMmPQ
CMIN/DF	1.429	1.740	1.704
P	.000	.000	.000
GFI	.838	.784	.773
AGFI	.811	.755	.745
RMR	.092	.108	.115
RMSEA	.054	.060	.058
NFI	.841	.803	.790
RFI	.826	.787	.775
IFI	.946	.905	.901
TLI	.940	.897	.893
CFI	.946	.904	.900
PRATIO	.913	.927	.933

GOF Indices	Beta Coefficients (Dependent Variable OS)	
	VMmCP	VMmPQ
Model 1		-.52
Model 2	-.45	
Model 3	-.49	-61

2. Models for Moderating Effects of CP and PQ on the relationship between Vendors' service performance (VSP) and Outsourcing success (OS).

GOF Indices	Model 1	Model 2	Model 3
	VSPmCP	VSPmPQ	VSPmCP and VSPmPQ
CMIN/DF	1.688	1.782	1.444
P	.000	.000	.000
GFI	.755	.740	.764
AGFI	.721	.709	.739
RMR	.080	.080	.081
RMSEA	.053	.062	.046
NFI	.730	.722	.739
RFI	.715	.702	.722
IFI	.892	.855	.902
TLI	.876	.843	.894
CFI	.882	.853	.901
PRATIO	.936	.934	.939

GOF Indices	Beta Coefficients (Dependent Variable OS)	
	VSPmCP	VSPmPQ
Model 1	.23	-
Model 2	-	.74
Model 3	.24	.79

APPENDIX I: ANOVA AND TUKEY'S TEST FOR BREADTH AND DEPTH GROUPS

Between-Subjects Factors

		Value Label	N
Breath	1	Low	57
	2	Med	60
	3	High	90
Depth	1	Low	62
	2	Med	67
	3	High	78

Tests of Between-Subjects Effects

Dependent Variable: OS

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	50.957[a]	8	6.370	8.135	.000
Intercept	1.870	1	1.870	2.388	.124
Breath_G	42.378	2	21.189	27.060	.000
Depth_G	.605	2	.303	.387	.680
Breath_G * Depth_G	1.123	4	.281	.358	.838
Error	155.043	198	.783		
Total	206.000	207			
Corrected Total	206.000	206			

a. R Squared = .247 (Adjusted R Squared = .217)

*Only breath is significant, Therefore → Multiple comparisons for joint groups

Table : Multiple Comparisons

Dependent Variable: OS Tukey HSD

(I) DOO_G	(J) DOO_G	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BL-DL	BL-DM	.18410	.23232	.997	-.5446	.9128
	BL-DH	.06256	.26863	1.000	-.7800	.9051
	BM-DL	-.61915	.22894	.153	-1.3372	.0989
	BM-DM	-.33727	.22894	.867	-1.0553	.3808
	BM-DH	-.43529	.22894	.614	-1.1533	.2828
	BH-DL	-.87449*	.24458	.013	-1.6416	-.1074
	BH-DM	-.97845*	.20964	.000	-1.6360	-.3209
	BH-DH	-.96591*	.18886	.000	-1.5583	-.3736
BL-DM	BL-DL	-.18410	.23232	.997	-.9128	.5446
	BL-DH	-.12154	.28383	1.000	-1.0118	.7687
	BM-DL	-.80325*	.24659	.035	-1.5767	-.0298
	BM-DM	-.52137	.24659	.467	-1.2948	.2521
	BM-DH	-.61939	.24659	.233	-1.3928	.1540
	BH-DL	-1.05859*	.26118	.002	-1.8778	-.2394
	BH-DM	-1.16255*	.22879	.000	-1.8801	-.4450
	BH-DH	-1.15001*	.20991	.000	-1.8084	-.4916
BL-DH	BL-DL	-.06256	.26863	1.000	-.9051	.7800
	BL-DM	.12154	.28383	1.000	-.7687	1.0118
	BM-DL	-.68171	.28107	.276	-1.5633	.1998
	BM-DM	-.39983	.28107	.888	-1.2814	.4817
	BM-DH	-.49785	.28107	.701	-1.3794	.3837
	BH-DL	-.93705*	.29395	.043	-1.8590	-.0151
	BH-DM	-1.04101*	.26558	.004	-1.8740	-.2080
	BH-DH	-1.02847*	.24951	.002	-1.8110	-.2459
BM-DL	BL-DL	.61915	.22894	.153	-.0989	1.3372
	BL-DM	.80325*	.24659	.035	.0298	1.5767
	BL-DH	.68171	.28107	.276	-.1998	1.5633
	BM-DM	.28188	.24341	.964	-.4816	1.0453
	BM-DH	.18386	.24341	.998	-.5796	.9473
	BH-DL	-.25534	.25818	.987	-1.0651	.5544
	BH-DM	-.35930	.22536	.807	-1.0661	.3475
	BH-DH	-.34676	.20617	.757	-.9934	.2999
BM-DM	BL-DL	.33727	.22894	.867	-.3808	1.0553
	BL-DM	.52137	.24659	.467	-.2521	1.2948
	BL-DH	.39983	.28107	.888	-.4817	1.2814
	BM-DL	-.28188	.24341	.964	-1.0453	.4816
	BM-DH	-.09802	.24341	1.000	-.8615	.6654
	BH-DL	-.53722	.25818	.489	-1.3470	.2725
	BH-DM	-.64119	.22536	.109	-1.3480	.0656

	BH-DH	-.62864	.20617	.064	-1.2753	.0180
BM-DH	BL-DL	.43529	.22894	.614	-.2828	1.1533
	BL-DM	.61939	.24659	.233	-.1540	1.3928
	BL-DH	.49785	.28107	.701	-.3837	1.3794
	BM-DL	-.18386	.24341	.998	-.9473	.5796
	BM-DM	.09802	.24341	1.000	-.6654	.8615
	BH-DL	-.43920	.25818	.745	-1.2490	.3706
	BH-DM	-.54316	.22536	.284	-1.2500	.1637
	BH-DH	-.53062	.20617	.205	-1.1773	.1160
BH-DL	BL-DL	.87449*	.24458	.013	.1074	1.6416
	BL-DM	1.05859*	.26118	.002	.2394	1.8778
	BL-DH	.93705*	.29395	.043	.0151	1.8590
	BM-DL	.25534	.25818	.987	-.5544	1.0651
	BM-DM	.53722	.25818	.489	-.2725	1.3470
	BM-DH	.43920	.25818	.745	-.3706	1.2490
	BH-DM	-.10396	.24123	1.000	-.8606	.6526
	BH-DH	-.09142	.22341	1.000	-.7921	.6093
BH-DM	BL-DL	.97845*	.20964	.000	.3209	1.6360
	BL-DM	1.16255*	.22879	.000	.4450	1.8801
	BL-DH	1.04101*	.26558	.004	.2080	1.8740
	BM-DL	.35930	.22536	.807	-.3475	1.0661
	BM-DM	.64119	.22536	.109	-.0656	1.3480
	BM-DH	.54316	.22536	.284	-.1637	1.2500
	BH-DL	.10396	.24123	1.000	-.6526	.8606
	BH-DH	.01254	.18450	1.000	-.5661	.5912

Table Continued : Multiple Comparisons

Dependent Variable: OS Tukey HSD

BH-DH	BL-DL	.96591*	.18886	.000	.3736	1.5583
	BL-DM	1.15001*	.20991	.000	.4916	1.8084
	BL-DH	1.02847*	.24951	.002	.2459	1.8110
	BM-DL	.34676	.20617	.757	-.2999	.9934
	BM-DM	.62864	.20617	.064	-.0180	1.2753
	BM-DH	.53062	.20617	.205	-.1160	1.1773
	BH-DL	.09142	.22341	1.000	-.6093	.7921
	BH-DM	-.01254	.18450	1.000	-.5912	.5661

*. The mean difference is significant at the 0.05 level.

		Depth		
Mean-OS		Low	Med	High
Breath	Low	3.93	3.75	3.87
	Med	4.55	4.27	4.37
	High	4.81	4.91	4.90