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The Impact of Organizational Culture on Service Innovation: An Empirical Study of Sri Lankan Business Service Organizations

K. A. S. K. Kariyapperuma¹

Department of Business Administration, University of Sri Jayewardenepura

Abstract

The purpose of this research article is to examine the impact of organisational culture on service innovation. A conceptual framework was proposed from the related literature and empirically tested using primary data collected from managers of service centric business organisations in Sri Lanka. The study employs a cross-sectional, survey-based methodology. Data was analysed via Smart PLS program. The result reveals that adhocracy culture is positively related to service innovations. Further, it provides evidence that, first, in order to increase service innovations companies should foster cultures with external and flexibility orientations. Moreover, the paper suggests that values, beliefs and assumptions that are coherent with adhocracy culture are key drivers for developing new services. Hence, the result provides evidence regarding the implications of organisational culture as well as enabling factors behind innovations of service firms.

Keywords: Organisational culture, Innovation, Service innovation, Service organisations

1. Background

Service industries have expanded rapidly in recent decades and comprise more than 70 percent of the gross domestic product (GDP) in all developed nations (Organization for Economic Cooperation and Development (OECD), 2014). In fact, in advanced economies service accounts for about two thirds of employment (OECD, 2014). In relation to the Sri Lankan context, in terms of value added, manufacturing has remained roughly constant at 31.5 percent of GDP, while the value addition of agriculture has declined to 10 percent as the service sector has a share of 58.5 of GDP (Central Bank of Sri Lanka, 2014), indicating that the growth of the service sector is likely to continue. Even economies with a strong focus on manufacturing are shifting to service dominated societies (Meffet & Bruhn, 2009). Thus, today the service sector offers tremendous potential for growth and profitability in the global and national economy. In response to the growth of the service sector, academic interest in the management of service organisations has also grown (Hertog, van de Aa, & de Jong, , 2010).

¹Corresponding author: kithminineha@gmail

However, despite the importance of the service sector, research on innovation in services had been lagging for a long time, mainly due to the particular characteristics that services have in general; their intangibility, co-production with customers, simultaneity, heterogeneity and perishability (Fitzsimmons & Fitzsimmons, 2004). These characteristics affect the development process of services and make them unique. Service organisations require service innovations in order to experience sustained growth, raise the quality and productivity levels of services, respond to changing customer needs and expectations, or stand up to superior competitive service offerings (Consoli, 2009; Consoli & Elche-Hortelano, 2010; Teece, 2007; Popelbub, Plattfavt & Ortback, 2011). They face the principle challenge to offer the marketplace continuously improvements, if not new services (Bullinger, Fahnich & Merien, 2003). However, in the recent past, the main focus of innovation research was primarily concerned with innovations related to technological artifacts or, in other words, products (Hertog et al., 2010; Poppelbub et al., 2011). Little scientific knowledge has, however, been acquired concerning the innovation in the service sector (Spohrer, 2008; Hertog et al., 2010; Hertog, Janssen, Alexiev & Castald, 2012). Given the importance of service innovations in sustaining the competitive advantage in services, the understanding of what drives and enable service innovations has become important in both practical and research perspective.

Antecedents to service innovation can be found at individual, TMT, organizational or contextual (environmental) levels (Zollo & Winter, 2002). One of the most important organisational factors, organisational culture is less studied in the area of service innovation and thus is selected as the subject of this study. Several researchers have pointed out the importance of culture-innovation relationship and lack of studies in service sector organisations (Yesil & Koska, 2012; Thorsten et al., 2013). For example, Yesil and Koska (2012) concluded that the existing literature exploring the relationship between organisational culture/climate and creativity/innovation is relatively limited and the literature on types of organisational culture and innovation is not extensive. Further, they pointed out that “there are only a handful of studies that attempt to understand the role of culture and strategic orientation on innovation” (2012, p.11). Giving more evidence to the lack of research on culture-innovation relationship, Thorsten et al. (2013) mentioned that an inclusion of culture variable into innovation management theory is still missing. Further, they argued that managerial practice requires an underlying structure in order to decide what type of culture should be implemented to foster innovation. March-Chorda and Moser (2008) and Yesil and Koska (2012) noted that there is no agreement regarding what type of organisational culture could foster innovations. Based on a literature review, Valencia, (2010) suggested further studies to explore organisational culture and innovation by using organisational culture model of Cameron and Quinn (2006) to identify types of culture that enable innovations within organisations. Therefore, an empirical research investigating the link between organisational culture types and service innovation would be a great contribution to both organisational culture and service innovation literature.

In practical perspective, the status of innovation in Sri Lanka at the moment is generally considered weak even by the standards of a developing country (Abeyagunawardana, 2013; Vitharana, 2011; Global Innovation Index, 2014). According to them, if Sri Lanka is to double its per capita GDP growth, advancement in science and technology, and building innovation capabilities at national and organisational levels is fundamentally important and it is therefore important to develop a “National Roadmap for Innovation” over the next decade. Making a presentation at the 18th annual general meeting of National Chamber of Exporters of Sri Lanka (2013), Dr. Kelegama mentioned that the country’s export performance relating to both industrial and service sector since 2000 has not been “satisfactory” due to lack of innovation. Further, the poor state of innovation in Sri Lanka is reflected

by all innovation indexes published by different world national forums. The Global Innovation Index ranked Sri Lanka 105th in 2014, down from 98th place in 2013. Its drop in the ranking is the result of relatively poor performance of input side of innovation where it comes in at 125th in 2014 (GII report, 2014). Innovation capacity of a nation depends on a favorable environment at national level and company operating practices, policies and strategies which include organisational level resources, structures, cultures etc. (Potter & Stem, 2005). The poor state of innovation is reflected by the very fact that it took sixty years since independence in 1948 for a national policy on innovation to be adopted in May 2009. The history of attempting to design and adopt a national innovation policy dates back to the 1960s and the final outcome was related only to science and technology (Wijewardena, 2015). Despite the growing importance of services, a discussion on this national innovation policy seems to be absent to date. Innovation in services has been poorly understood and its impact has been neglected (Kirkgaard, 2012). Service innovation was merely seen as subset of technology innovation or similar to innovation in manufacturing. Role of innovation in the service sector has been underappreciated at the national level and organisational level in Sri Lanka (Wijewardena, 2015). Little research has been done at organisational level in the Sri Lankan context to have a better understanding on service innovation and influencing factors (Dasanayaka, 2008). Therefore, the primary focus of this paper is to explore the influence of organisational culture, particularly dominant culture types, on innovations in service centric business organisations in Sri Lanka. Therefore, it is proposed to study the issue and investigate the relationship through an empirical analysis. The study seeks responses to the following research question.

Is there a significant correlation between dominant culture types (clan, adhocracy, market and hierarchical) and innovations of service centric business organisations?

This paper is organised in six parts. After this brief introduction, the second section presents the study's theoretical foundations and consequent hypotheses. The following section describes the sample and establishes the variables, while the fourth section presents the data analysis and results. The fifth section summarizes the most relevant conclusions drawn from the analysis and the paper concludes with an argument of the practical implications for building organisational cultures that enable service innovations and the research issues to be addressed with the future research.

2. Theoretical Background

2.1 Service Innovation

The literature provides a huge variety of definitions for "services". While some definitions highlight services as an activity or performance conducted in order to solve a specific issue of the customer (e.g. Gronroos, 1990; Kotler 1999) others describe services as a bundle of competence that has to be delivered (e.g. Gadrey, Gallouj & Weinstein 1995). More recent literature emphasizes the interaction of service customers and service producers (Gronroos, 2007). The present research, being in line with Hertog et al. (2010) defines services as an experience or a solution for a specific issue of a customer. This definition includes all the elements of services that innovation can take place and therefore is applicable to the whole service industry - thus is suitable in the context of the present study.

The term innovation comes from Latin's *innovare*, which means "to make something new" (Tidd, Bessant & Pavitt., 2005). The definition, however, has developed over time and has been interpreted very differently (Sauber & Tschirky, 2006). Schumpeter defined innovation in 1934, as a radical activity that results in a new element or new combination of all elements (Sauber & Tschirky, 2006). Rogers (2003) provides a more precise definition: innovation is an idea, practice, or object perceived as new

by an individual or organisation. From a business perspective, innovation is the key to economic growth, competitive advantage, and even survival (Agarwal, Erramill & Dev, 2003; Merrilees, Rundle-Thiele & Lye, 2011; Sheehan, 2006). Most innovation research appears interested primarily in technological innovations or new product development (Droege, Hildbrand & Forcada, 2009). Some studies addressing innovation in service sectors reflect an impetus from a technologist perspective, such as the technological taxonomy of services (Miozzo & Soete, 2001). Other studies emphasize distinctive features of service sectors and adopt a service oriented perspective that focuses on non-technological forms of innovation (Sundbo, Orfila & Soerensen, 2007). In general, existing studies of innovation in the service sector consist of either assimilation, demarcation or synthesis approaches, depending on their basic assumptions about the similarity between manufacturing and services (Coombs & Miles, 2000; Droege et al., 2009). Service innovation recently has gained recognition as a unique research field (Droege et al., 2009; Spohrer, 2008). This perspective reflects the essence of service: a service is designed to organise a solution to a problem through a bundle of capabilities and competences, whether human, technology, or organisational (Gadrey et al., 1995). Furthermore, service offerings are experiential in nature, and service providers can enhance the service experience through both tangible and intangible deliveries (Zolfagharian & Paswan, 2008). Ostrom et al. (2010) argue that capturing how companies innovate services is a top research priority; they define service innovation as “creating value for customers, employees, business owners, alliance partners, and communities through new and/or improved service offerings, service processes, and service business models” (2010,p. 6). Their arguments not only highlight the importance of understanding the practical implementation of service innovation but also clearly point to three types: new service concept, process, and business model. In 2010, Hertog et al. defined service innovation as a new service experience or service solution that consists of one or several of the following dimensions: new service concept, new customer interaction, new value system/business partners, new revenue model, new organisational or technological service delivery system. According to these researchers, a service business can innovate every single dimension, or a combination of the several dimensions previously outlined. Thus, this definition has been selected for the purpose of this research. The significance of these dimensions, as well as the interactions between them, will vary across individual service innovation and firms.

2.2 Organisational Culture

The general term ‘Culture’ (from the Latin *cultura* stemming from *colere*, meaning "to cultivate") is a term that has different meanings. For example, in 1952, Alfred Kroeber and Clyde Kluckhohn compiled a list of 164 definitions of "culture" in *Culture: A Critical Review of Concepts and Definitions*. The topic ‘organisational culture’ also has been studied from a variety of perspectives ranging from disciplines such as anthropology and sociology, to the applied disciplines of organisational behavior, management science, and organisational communication. Becker and Geer in 1960 defined organisational culture as a set of common understandings around which action is organised. Similar to Becker, Louis in 1980 defined culture as a set of understandings or meanings shared by a group of people that are largely tacit among members and are clearly relevant and distinctive to the particular group which are also passed on to new members. Having a practical perspective, Schein in 1990, defined organisational culture as,

a pattern of basic assumptions that a group has invented, discovered or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (p. 111).

Park et al. in 2004 defined organisational culture as “the shared, basic assumptions that an organisation learns while coping with the environment and solving problems of external adaptation and internal integration that are taught to new members as the correct way to solve those problems” (2004, p. 57). This sampling of definitions represents the two major camps that exist in the study of organisational culture and its applications. The first camp views culture as implicit in social life. Culture is what naturally emerges as individuals transform themselves into social groups as tribes, communities, and ultimately, nations. The second camp represents the view that culture is an explicit social product arising from social interaction either as an intentional or unintentional consequence of behavior. In other words, culture is comprised of distinct observable forms (e.g., language, use of symbols, ceremonies, customs, methods of problem solving, use of tools or technology, and design of work settings rules and regulations) that groups of people create through social interaction and use to confront the broader social environment. This second view of culture is most relevant to the analysis and evaluation of organisational culture and to cultural change strategies that leaders can employ to improve organisational innovations.

Organisational culture influence various outcomes related to the employees and organisations. Organisational culture affect employee behaviour, learning and development (Bollinger & Smith, 2001; Saeed & Hassan, 2000), creativity and innovation (Ahmed, 1998; Martins & Terblache, 2003; Martins & Martins, 2002; Mclean, 2005; Vincent, Bharadwaj & Challagalla, 2004), knowledge management (Tseng, 2010), and performance (Oparanna, 2010; Saeed & Hassan, 2000; Tseng, 2010; Zain, Ihsak & Ghani, 2009). The studies related to the effect of organisational culture on different outcomes are quite extensive, yet, the role of organisational culture on innovation is relatively limited (McLean, 2005; Vincent et al., 2004).

2.3 Organisational Culture and Service Innovation

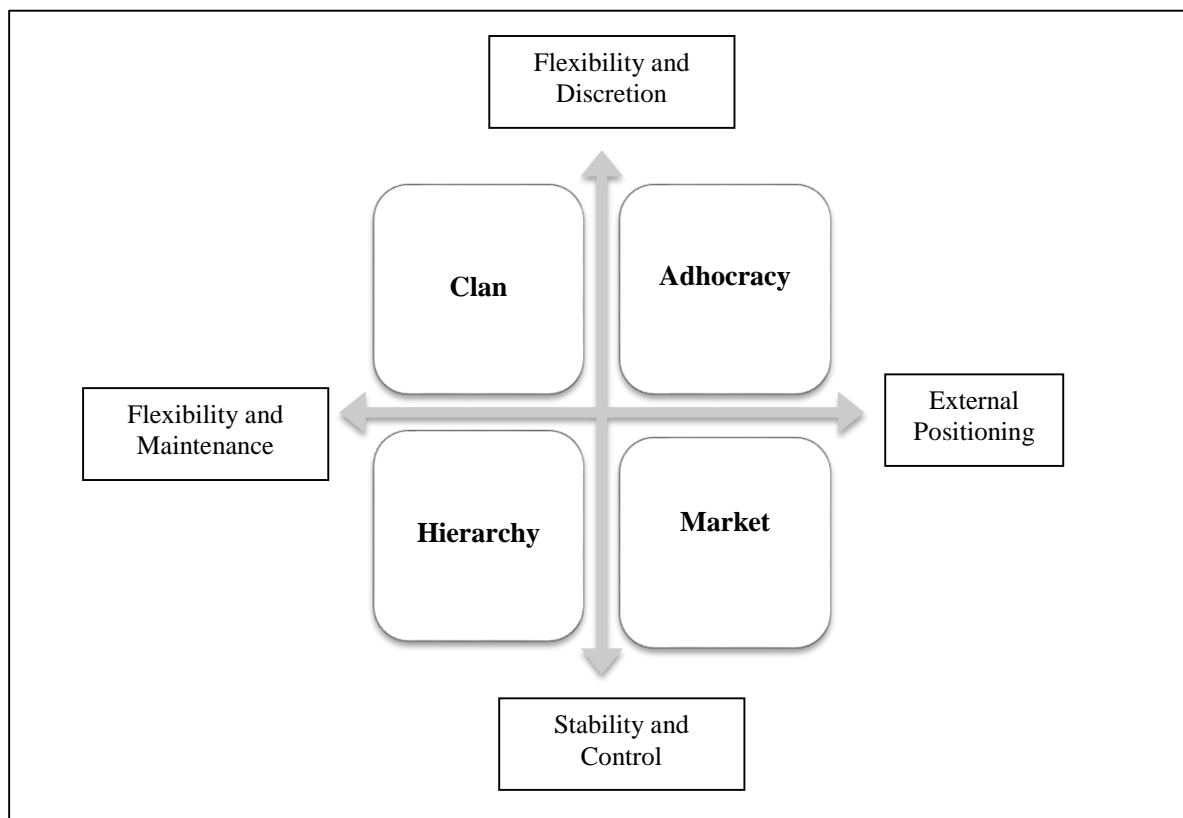
The link between culture and innovation has been well documented in literature based on production organisations (Kanter, 1983; Brannen, 1991; Ahmed, 1998; McLean, 2005). Several characteristics of culture can serve to enhance or inhibit the tendency to innovate in organisations (Ahmed 1998; McLean, 2005). Organisational culture can stimulate innovative behavior among the members of an organisation since it can lead them to accept innovation as a basic value of the organization and can foster commitment to it (Hartmann, 2006). Edwards, Kumar and Ranjan. (2002) reflected that the organization culture with values, norms and beliefs is an invaluable enabler of innovation. Martins and Terblanche (2003) argued that organisational culture appears to have an influence on the degree to which creativity and innovation are stimulated in an organisation. Values, beliefs and norms affect innovation positively or negatively depending on how they impact employees and groups in an organisation. Ahmed (1998) argued that culture is the primary determinant of innovation and possession of positive cultural characteristics provides the organisation with necessary ingredients to innovate.

What literature has not clarified is which types of cultures enhance or inhibit innovation. In order to analyze the relationship between different type of cultures and innovations, the competing values frame work of Cameron and Quinn (2006) has been used in this research paper. Although there are other typologies of organisational culture (De Vries & Miller, 1986; Reigle, 2001; Wallach, 1983), this model is one of the most extended and has been used in some empirical studies on organisational culture (Deshpande, Farley & Webster., 1993; Igo & Skitmore, 2006; Lau & Ngo, 2004; Obenchain & Johnson, 2004; Obenchain, 2002; Stock et al., 2007).

2.4 The Competing Values Framework

As stated by Cameron and Quinn (2006), the Competing Values Framework was initially developed from a research conducted on organisational effectiveness. Campbell et al, (1974) developed a list of 39 indicators of organisational effectiveness. Through statistical analysis, Quinn and Rohrbaugh (1983) organised the list into two dimensions that encompassed four main clusters. Cameron and Quinn (2006) asserted that one could group the dimensions into four quadrants. According to Cameron and Quinn (2006, p. 37), “each quadrant represents basic assumptions, orientations, and values-the same elements that comprise organisational culture.” Figure 1 shows the Competing Values Framework.

Figure 1: Core Dimensions of the Competing Values Framework



Source: Cameron and Quinn (2006)

As shown in Figure 1, based on two core dimensions (flexibility and discretion versus stability and control, external focus versus internal focus and integration) and six characteristics of the organisation (dominant characteristics; organisational leadership, management of employees, organisational glue, strategic emphases and criteria of success), four organisational cultural types (clan, adhocracy, market and hierarchy) have been identified.

Cameron (2004) views clan culture as a friendly place with an extended family working together. The clan culture is characterized with loyalty, morale, commitment, tradition, collaboration, teamwork, participation, consensus, and individual development (Cameron, 2004; Cameron & Quinn, 2006; Tseng, 2010). Clan culture emphasizes flexibility but its focus is on the internal organisational aspects. It resembles a family-type organization in which effectiveness is achieved by encouraging collaboration

between employees. This type of culture is very “employee-focused” and strives to instill cohesion through consensus and job satisfaction and commitment through employee involvement. Clan organisations devote considerable resources to hiring and developing their employees, and they view customers as partners.

Adhocracy culture is characterized as a dynamic, entrepreneurial, innovative and creative workplace (Cameron, 2004; Cameron & Quinn, 2006; Tseng, 2010). It emphasizes new product and service development, growth, change, and experimentation (Cameron, 2004; Cameron & Quinn, 2006; Tseng, 2010). Adhocracy culture emphasizes flexibility and change and it is externally oriented. It is usual in companies operating in dynamic contexts and in those trying to be leaders in their markets. The key values that adhocracy culture emphasizes are creativity, entrepreneurship and risk taking. This type of culture fosters the creation of innovative products and services by being adaptable, creative, and fast to respond to changes in the marketplace. Adhocracy Cultures do not rely on the type of centralized power and authority relationships that are part of market and hierarchical cultures. They empower and encourage employees to take risks, think outside the box, and experiment with new ways of getting things done. This type of culture is well suited for start-up companies, those in industries undergoing constant change, and those in mature industries that are in need of innovation to enhance growth (Cameron & Quinn, 2006; Tseng, 2010).

A market culture is regarded as a results-oriented workplace emphasis on winning, outpacing the competition, escalating share price, and market leadership (Cameron, 2004; Cameron & Quinn, 2006). Market culture is externally focused, but it is controls oriented. The core values of firms with this culture are productivity and competitiveness. Organisations with this culture are driven by competition and a strong desire to deliver results and accomplish goals. Because this type of culture is focused on the external environment, customers and profits take precedence over employee development and satisfaction. The major goal of managers is to drive toward productivity, profits, and customer satisfaction (Cameron, 2004).

A formalized and structured place along with procedures, well-defined processes and a smooth-running organisation are the main characteristics of hierarchy culture (Cameron, 2004). The long-term concern of this type of culture is the stability, predictability, and efficiency (Cameron, 2004; Tseng, 2010). Hierarchy culture is also control oriented but also focuses on the internal organization. Control is the driving force within a hierarchical culture. The hierarchy culture has an internal focus, which produces a more formalized and a structured work environment, and values stability and control over flexibility. This orientation leads to the development of reliable internal processes, extensive measurement, and the implementation of a variety of control mechanisms (Cameron, 2004; Tseng, 2010).

In the case of the first dimension of the model, stability/flexibility, it is to be expected that flexibility-oriented cultures will favour innovation while stability-oriented ones will hinder it since flexibility is recognised in the literature as one of the values most associated with an innovative culture (Arad, Hanson & Scheider 1997; Martins & Terblanche, 2003). It is generally held that organic (more flexible) organizations favour innovation while mechanist (more stable) ones hinder it. Jaskyte and Kisieliene, (2006) found that innovation in these organizations is significantly and positively related to the cultural dimension of “innovation” (similar to flexibility) and negatively related to “stability”.

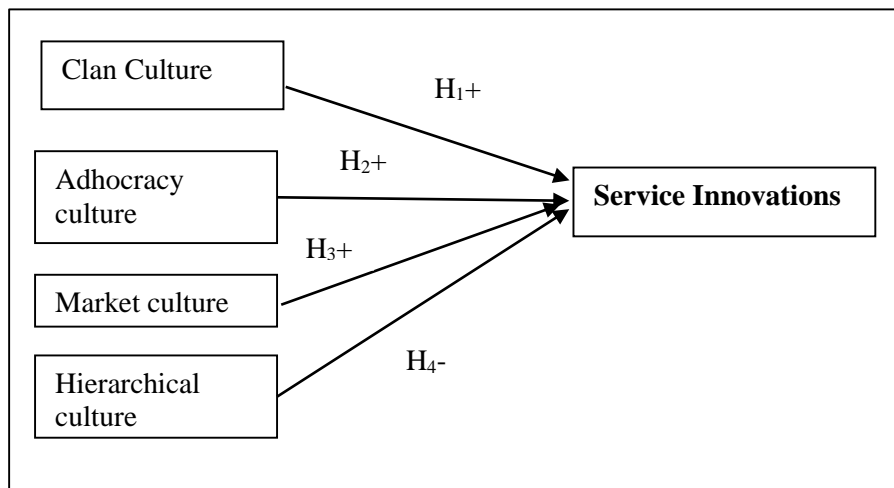
With regards to the second dimension, internal focus/external focus, Deshpande et al. (1993) point out that cultures with internal emphasis (integration, little novel activity) could cause the business to be less attentive to market changes, something which is very necessary in innovation processes. Kimberly (1978) found a positive relation between external orientation of a business and adoption of innovations. Other studies on total quality management like those of Flynn et al. (1994) and Saraph, Benson and Schroedr (1989), find evidence that external orientation favours processes of continuous improvement, which are themselves means of innovation. From this, it can be concluded that organisational cultures of external orientation favour innovation while those with internal orientation hinder it.

The deduction from the above conclusions is that the type of organisational culture in Cameron and Quinn (Cameron & Quinn, 1999; Cameron, Quinn, Degralf & Thaker, 2006) model which mostly favours innovation is the adhocracy culture since its two most characteristic values are flexibility and external orientation. At the other end would be the hierarchical culture, characterized by stability and internal orientation, which favours decision making by authority, high formalization, emphasize on internal processes, and which would be negatively related to innovation. To date there has been little empirical literature on the relation between types of organizational culture and service innovation (March-Chorda & Mosar, 2008; Thorsten et al., 2013; Yesil & Kaya, 2012).

Based on the above arguments, following study frame wok and hypotheses were formulated:

- H₁: Clan culture is positively related to service innovations.
- H₂: Adhocracy culture is positively related to service innovations.
- H₃: Market culture is positively related to service innovations.
- H₄: Hierarchy culture has negative association with service innovations.

Figure 2: The Study Framework



3. Research Methods

3.1 The Sample and Data Collection

Service organizations, such as hotels, banks and hospitals are ideal examples of markets which could benefit from the implementation of service innovation. First, from a customer’s perspective, markets of these industries are perpetually inundated by many similar, often easily substitutable service offerings. This can cause difficulties for managers as they attempt to differentiate an individual service firm from its competitors (Reid & Sandler, 1992). One solution to this challenge may be to offer new

and innovative features to customers. Secondly, these industries are rapidly changing due to accelerations in information technology (Olsen & Connolly, 2000). Managers will need to make proactive changes which focus intensely on customer preferences, quality, and technological interfaces in order to stay competitive in such a dynamic environment (Karmarkar, 2004). Thirdly, customers today do not exhibit, as in past decades, a truly brand loyal behavior. They are choosing instead, to patronize firms that offer the best value proposition under existing budgetary constraints (Olsen & Connolly, 2000). These organizations will be highly benefited by organisational cultures that enable innovations. Therefore, three different service sectors (financial, tourism and health) were taken into consideration as the research setting. Service industries such as telecommunication, ICT/ IT and professional businesses were not considered due to limited number of organizations registered under the Colombo Stock Exchange. The public sector was excluded, based on the belief that it is subjected to other types of dynamics than the market-forces that the researcher wish to study with other elements of the survey.

Since, a non-experimental, descriptive, co relational design was followed in this study, data was collected through a self-reporting survey with thirty items dedicated to the subject of this research. The sample period involved three months in the year of 2014. The unit of analysis in the survey was individual service centric business organisations from above mentioned industries.

The participants consisted of senior managers who are likely to be knowledgeable about the topics within the questionnaire (Miller et al., 1998) from sixty service centric business organizations. The firms are located in the Western province of Sri Lanka. There are approximately 180 service sector firms registered in Colombo Stock Exchange. The researcher was able to obtain contact information of around 155 firms and send them questionnaires via mail (web based) or personally contact the organisations. Sixty usable questionnaires were collected with a 40 percent response rate.

3.2 Measures

The questionnaire items were derived mainly from previous studies and modified to fit to the nature of this study. Organisational culture items (dominant characteristics, organizational leadership, management of employees, organisational bond and criteria of success) were adapted from Cameron and Quinn (2006). Six service innovation items (service concepts, customer interactions, value systems, revenue models, organisational delivery systems and technological delivery systems) were taken from the studies of Hertog et al. (Hertog et al., 2010; Hertog et al., 2012). A Likert type scale with five response options ranging from strongly disagree to strongly agree was used for measuring organisational culture. Further, respondents were asked to indicate, the degree to which their company had made changes within the last three years to any of the six innovation variables (mentioned above) that were of such a nature that they were perceived to be new to the company. For each of the area, respondents were asked to indicate the extent of change done to each dimension of service innovation, using a five point Likert type scale ranging from 1= “to no extent” to 5= “to a very great extent”.

4. Analysis and Results

All analyses were performed based on the data collected through the survey by using Smart PLS- a Partial Least Squares (PLS) Structural Equation Modelling (SEM) tool (Ringle , Wende & Will, 2005) and SPSS 16.

4.1 Results

The firms surveyed in this study operate in finance (banking, insurance and investments) sector (68%), tourism (22%), and health sector (10%). According to the descriptive statistics, 89 percent of the participants are male and 11 percent are female. This result supports the notion that managerial positions are still dominated by males in Sri Lanka. The participant managers seem to be young. Educational level distribution is as follows; high school (8%), associate memberships or professional qualifications (19%), bachelor's degree (41%), and post graduate degree (32%). The work tenure of the respondents: 1 - 5 years (17%), 6-10 years (45%), 10 and more years (38%). Respondents tend to be experienced in their respective sector.

Smart PLS simultaneously assesses the psychometric properties of the measurement model and estimates the parameters of the structural model. Reliability testing results are shown in Table 1. The results indicate that the measures are robust in terms of their internal consistency reliabilities as indexed by their composite reliabilities. The composite reliabilities of different measures in the model range from 0.81 to 0.87, which exceeds the recommended threshold value of 0.70 (Nunnally, 1978).

Table 1: Reliability and Convergent Validity of Constructs

	AVE	Composite Reliability	Cronbach's Alpha	R square
CLAN	0.6123	0.8776	0.7623	0.0000
ADHOC	0.5972	0.8432	0.7358	0.0000
HIERA	0.6536	0.8135	0.7123	0.0000
SERINO	0.5467	0.8236	0.7925	0.2354

Table 2 shows the test results regarding discriminant validity of the measurement scales. The bolded elements in the matrix diagonals, representing the square roots of the AVEs, are greater in all cases than the off-diagonal elements in their corresponding row and column. This result supports the discriminant validity of the scales.

Table 2: Inter-Construct Correlations - Discriminant Validity

	CLAN	ADHOC	HIERA	SERINO
CLAN	0.7824			
ADHOC	0.6123	0.7727		
HIERA	0.6423	0.5321	0.8084	
SERINO	0.4326	0.4213	0.3425	0.7393

Convergent validity is shown when each measurement item correlates strongly with its assumed theoretical construct. In other words the items that are the indicators of a construct should converge or share a common high proportion of variance. Convergent validity was evaluated for all constructs using three criteria recommended by Fornell and Larcker (1981): (1) All measurement factor loadings must

be significant and exceed 0.70, (2) Composite reliabilities must exceed 0.80, and (3) Average Variance Extracted (AVE) by each construct must exceed the variance due to measurement error for that construct (that is, AVE should exceed 0.50). The results are shown in Table 2 and 3.

Table 3: Cross Loadings for the Measurement Model

	CLAN	ADHOC	HIERAC	SERINO
CLAN 1	0.5736	0.2123	0.2215	0.3213
CLAN 2	0.7428	0.3562	0.5231	0.2315
CLAN 3	0.6839	0.5125	0.4253	0.3215
CLAN 4	0.7508	0.04221	0.5124	0.2134
CLAN 5	0.7632	0.4119	0.5032	0.2052
CLAN 6	0.6421	0.4753	0.4721	0.3261
ADHOC1	0.5721	0.8331	0.5321	0.3215
ADHOC2	0.5631	0.8532	0.5512	0.4326
ADHOC3	0.4685	0.6343	0.2577	0.2453
ADHOC4	0.4321	0.6871	0.4324	0.2133
ADHOC5	0.5585	0.7856	0.3521	0.4312
HIERA 1	0.5124	0.4231	0.8336	0.2536
HIERA 2	0.4563	0.5126	0.8119	0.2213
SERINO1	0.3345	0.4213	0.1231	0.8501
SERINO2	0.3571	0.4562	0.2537	0.8164
SERINO3	0.4562	0.4713	0.3216	0.8134
SERINO4	0.3156	0.3123	0.2331	0.6131
SERINO5	0.2106	0.2568	0.1875	0.7563
SERINO6	0.2407	0.2734	0.1963	0.7625

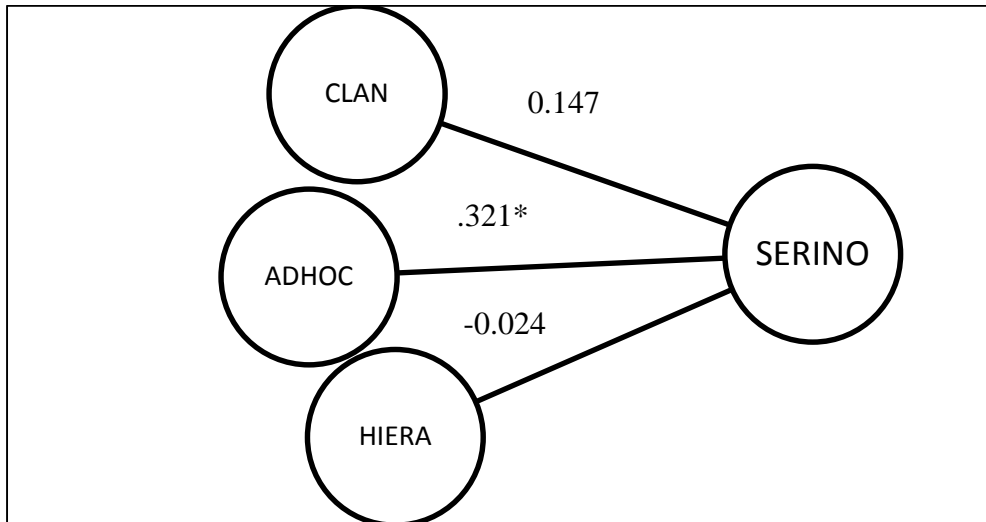
As seen in Tables 2 and 3, all of the items were loaded on their respective construct from lower bound of 0.57 to an upper bound of 0.86 and more highly on their respective construct than on any other construct. The fact that all items load more highly on their respective construct than the other construct ensured the convergent validity. Most of the items loaded above the threshold level of 0.50 (Havarila, 2010). In addition, each item's factor loading on its respective construct was highly significant ($P < 0.01$). The average variance extracted (AVE) for each measure is higher than 0.50, consistent with recommendation of Fornell and Larcker (1981). The composite reliabilities of different measures in the model range from 0.81 to 0.87. Therefore, Table 2 and Table 3 confirm that the convergent validity of measures for the latent constructs is present. It should be noted that market culture dimension of organisational culture has been dropped from the model due to insignificant items loaded on market

culture. Some of the items were also deleted from the model due to their insignificant factor loading or reflect high loading on more than one factor.

4.2 Hypotheses Testing

The results of the structural model are shown in Figure 3, in which the beta values of path coefficient indicate the direct influences of predictor upon the predicted latent constructs. According to the results, only adhocracy culture dimension of organizational culture is positively related to service innovations of the firms. This result confirm hypothesis two (H₂) which suggested the positive link between adhocracy culture and service innovations. Although other cultural dimensions (clan and market) were also expected to have positive effect on service innovations they did not reflect any significant effect on service innovations. Thus, H₁ and H₄ are not confirmed in this study. Excluding the market culture dimension in the analysis has resulted in not testing H₃.

Figure 3: The Structural Model with Path Coefficients



Note: Path coefficient: ** Significant at $p < 0.01$

5. Discussion and Conclusions

Based on the research model developed from the related literature, this study intended to demonstrate the impact of the organisational culture dimensions on innovations of service centric business organizations in Sri Lanka. The results reveal that adhocracy culture dimension positively affects innovations of service organizations, confirming H₂. This result supports the theoretical arguments (Vincent et al., 2004; Valancia, 2012) along with empirical studies that found positive effect of organisational culture on innovation (Yaşil & Koska 2012). Additionally, these results are also consistent with other studies which suggest that some culture related characteristics such as creativity (Miron, Erez & Naaven., 2004; Scott & Bruce, 1994), empowerment (Gudmundson, Tower & Hartman 2003), freedom and autonomy (Martins & Terblanche, 2003) and risk taking (Jamrog Vickers & Bear, 2006), which are characteristics of adhocracy cultures, enhance innovation. The fact that only adhocracy culture affects service innovations provides evidence for the prominent role of adhocracy culture on service innovation found in a study conducted by Yesil and Koska (2012) and Valancia (2010). Dasayanaka (2009) also reported that adhocracy culture is related to innovations of

manufacturing organizations. This result implies that firms need to pay attention to adhocracy culture related characteristics and try to establish and support them within their organisations.

The other cultural dimensions, namely clan and hierarchy were not related to innovations of service organizations and thus, H1 and H4 were rejected. These findings contradict with the theoretical arguments (Edwards et al., 2002; Martins & Martins, 2002) and previous empirical studies (March-Chorda & Moser, 2008; Vincent et al., 2004). Lack of relationship between these two cultural dimensions and service innovations could be attributed to the organisational culture measurement and relatively small sample size of sixty organizations.

Hypothesis three (H3) reflecting the link between market culture and service innovation was also rejected because of low significance level of items that constitute the market culture. Although previous studies depicted a prominent effect of market culture on performance including innovations (Galagher & Brown, 2007), this study failed to show significance of the construct in the analysis. Thus, this hypothesis was not tested.

The overall results indicate that the characteristics associated with adhocracy type organisational culture have more prominent effect than other dimensions. Organisational cultures that place great emphasis on entrepreneurial, innovative and creative workplace along with new developments, growth, change, and experimentation are likely to create an environment where service innovation can be developed (Valencia, 2010). The key values of these cultures are creativity; risk taking, openness and entrepreneurship (Tseng, 2010). Thus, as indicated by findings, a culture which has adhocracy type characteristics enable innovations in service centric business organizations.

6. Research Implications

Firms hoping to enhance service innovation should pay attention to their organisational culture, since culture could enhance service innovations. In particular, according to the findings, since the second hypothesis is accepted, firms must make efforts to develop a suitable culture which fosters creativity, entrepreneurship, openness and risk taking. As indicated by the findings, top management should create values that support risk taking and should demonstrate through their actions that risk taking and experimenting are acceptable behaviours (Arad et al., 1997). At the same time it is important that risk taking should be calculated and balanced to allow employees freedom in taking risks, but also to increase the possibility of success by creating a culture that allows for moderate risk taking. Management should realize that innovative employees are largely motivated by the possibility of success rather than the results of success (Aber, 1996). Open communication between employees, management and different departments as a determinant of organisational culture that would support creativity and innovation is supported by authors like Filipczak (1997), Lock and Kirkpatrick (1995) and Shattow (1996). Bresnahan (1997) emphasizes the role of management by pointing out that “open doors” foster innovation. Furthermore, Ahmed (1998) points out that face to face communication promotes innovation.

7. Limitations and Further Studies

In spite of its contributions, the results of this paper should not be interpreted without taking into account the limitations of the empirical study. First, the data in the study was collected from one source, one manager from each organization. Although the use of single informants remains the primary research design in most studies, multiple informants would enhance the validity of the research findings.

Another limitation is that participated firms in this study comes from only one city with relatively small sample size and the dynamics of selected industries are also different from each other. This limits the ability to generalize the findings to other contexts. This may have resulted in lack of significant relationship between organisational culture dimensions and service innovations. It is therefore recommended that further studies may involve bigger sample size and firms spanning across the country and to different service industries. Future studies may further investigate the impact of organisational culture dimensions on innovation in firms with different measurements including all the organisational members.

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