


Examining the relationship between competitive capability and perceived service quality in university libraries

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Abstract

As modern Information Technology has created a way to a variety of information service opportunities, many options other than the conventional library service are available for users. A stiff competition has emerged among information service providers and therefore university library professionals too have to think of their competitive advantage. Service quality has gained a high concern as a strategy for developing the competitive position of an organization and many studies in different fields have established a strong relationship between service quality and competitive advantage. Viewing inversely, some practitioners contemplate that the competitive position of resource capabilities can influence the improvement of service quality. In order to examine the relationship between competitive position and the service quality in a university library context, an exploratory survey was employed utilizing a VRIO based questionnaire and LibQUAL+ based instrument with 89 library professionals selected from 15 state university libraries in Sri Lanka. The study reveals that there is a moderate positive correlation between two variables ($r = .286$, $n = 66$, $p = .020$). As the relationship is moderate, further studies seem essential to support the hypothesis. The large percentage of residuals indicates that there are more factors contributing to the service quality in university libraries. This study

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deploys a robust process to develop a measuring instrument for a competitive position in university libraries and uncovers many research areas in the field.

Keywords: Competitive Position; Service Quality; Information Marketing; Competitive Capabilities; VRIO; RBV Theory; Resource Capabilities.

Introduction

Information needs and information seeking behavior of users are being changed constantly with the innovative socio-economic and technological changes prevailing today. Library operating systems and their working environments are also being changed to accommodate the changes of the new technological developments (Samyal, Sumi, & Singh, 2010). Meanwhile, high competition has emerged in the information service sector as a result of the availability of alternative channels of information delivery, many of which are more convenient and competitive on cost (Adeniran, 2011). In fact, commercial information service providers, such as Amazon.com are becoming much popular with their online full-text resources. Google and other comparable search engines have become incredibly powerful information tools. These service providers have been able to focus on most of the services expected from the library. As a result, library users tend to think that the library is no longer the first port of call for information (Connaway, Dickey & Radford, 2011; Connaway, & Randall, 2013). Users seem to move to other options for their information needs giving a clue that library service is in high competition.

This competition compels the library to develop its competitive capabilities as a strategy to face the situation. Users generally seek the utility and linking of new technological tools to the library services rather than providing conventional sources of information. They expect good physical facilities, adequate collections, easy access and proper study space available 24 hours of the day (Wang & Tremblay, 2009; Wang, 2012) with high quality and reliability. In this circumstance, librarians have to rethink the current services they provide, comprehensiveness of the collection, human resource planning etc. addressing the innovative requirements of users (Kadli & Kumbar, 2013).

The 'quality of service' earns much attention in this regard. Quality is invariably the satisfaction of the customer (Peris-Ortiz et al., 2015; Alghamdi

& Bach, 2013). Quality criteria are based on the satisfaction measures and it invariably explains the performance level of the library. Thus, amid the limiting of funding for library resources, the growing importance of quality requirements seems to occur as a strategy to win the competition (Tunde & Issa, 2013, Wilson, 2013).

In another aspect, ‘organizational theory’ explains that a typical organization should change its activities with the changes of the environment in order to remain competitive (Hoffman, 2000; Murray & Donegan, 2003). Organization theory is applied differently to different organizations, but it is expected that this change should be in par with the quality of the service.

Many studies have recognized that ‘Service Quality’ is a strategy to achieve competitive advantage (Alghamdi & Bach, 2013; Peris-Ortiz et al., 2015). Studies are supporting to establish a positive relationship between the service quality and competitive advantage (Wijetunge, 2016; Dominic et al., 2010; Shepherd, 1999; Kwanya et al., 2018). The quality of the service provided by any organization is associated as a critical factor in dealing with a competitive market (Al-Ababneh, 2017; Dominic et al., 2010; Dadoa, et al., 2012). Thus, there is a well-established relationship between service quality and competitive capabilities. However, the inverse approaches: the effect of competitive capabilities on the improvement of service quality has gained less attention, and the strategic application to develop the competitive capabilities seems lacking in the literature.

As mentioned above, libraries have many competitors external as well as internal (within and outside the university) and hence, maintaining a competitive advantage is useful. Therefore, university libraries need to re-examine the range and quality of services they currently provide and develop systems for consultation and cooperation with their customer needs and customer expectations to the highest degree. Based on the above situation, university libraries need to develop their competitive capabilities to retain the users and satisfy them with quality services as they expect. If the competitive capabilities are developed, it can help the development of the quality they provide. Hence, this study attempts to examine the relationship between the competitive capabilities and service quality perceived by university libraries in the context of Sri Lanka.

Research Objectives

The purpose of this study is to explore whether there is a significant relationship between competitive capability position and perceived service quality of university libraries. Following objectives would be achieved in the study:

- i. To measure the competitive capability position of university libraries in Sri Lanka.
- ii. To measure the perceived service quality of university libraries in Sri Lanka.
- iii. To examine whether there is a significant relationship between the competitive capability position and perceived service quality level of university libraries in Sri Lanka.

Literature Review

The theoretical background of this study lies on a wide range of conceptualizations related to Resource Based View (Barney, 1991) and service quality concept (Parasuraman, Zeithaml & Berry, 1988) in library service. Hence, the main focus of the literature review was on these theories and principles.

Resource Based View

Resource Based Theory (RBT) has been expanded in various approaches through a variety of conceptual and empirical explorations. Resources including human, physical and intellectual assets play a major role in any organization to achieve its objectives (Black & Boal, 1994). RBT attempts to explain that the resources of a firm possess the priority importance to achieve the superior performance. The theory has been evolved through various approaches viz. Resource Based View (RBV) (Barney, 1991; Penrose, 1959; Wernerfelt, 1984), Knowledge Based View (KBV) (Grant, 1996) and Dynamic Capability View (DCV) (Teece et al., 1997). RBV has been massively used in management practices as an influential theory of strategic management (Talaja, 2012; Newbert, 2007).

‘Core Competencies’ (Hamel & Prahalad, 1990) of the organization are important for the successful performance of a company. But resources need to be leveraged to create specific capabilities. Resource Based View explains

why some organizations achieve the success of performance than other organizations in the same business (Baia, Ferreira & Rodrigues, 2019).

The main focus of strategic management is to analyze the competitive environment of the organization. Strategies are mostly determined according to the external context and market position. Porter (1985) stressed that the competitive advantage of the firm can be achieved through the deployment of external factors such as products and customer. But, practitioners later encountered that only external focus is not sufficient to determine strategies in the firm. As an alternative to this approach, business organizations tended to consider the internal context that is the thinking of the strengths and capabilities of the organization and seek market opportunities for the internal strength rather than thinking of the external market position.

Strengthening the internal capabilities of the firm and balancing of external context might be more successful as a strategy. RBV approach (Barney, 1991) was initiated in this context and it is believed that all firms have different strengths and weaknesses (Pina, 2011). If a firm is specific from other firms with special resources and capabilities, it can achieve more market positions than others (Teece et al., 1997). RBV is important in the process of strategy formulation as it acts as a guide for strategic decision making (Sveiby, 2001). RBV seeks to conceptualize that company resources must be capable of winning the competitive advantage by leveraging the capabilities.

Resources of a firm exist as bundles and as interrelated entities. Not all resources are capable of achieving competitive advantage because the competition mostly occurs based on the situation, in which attributes like heterogeneity and immobility of strategic resources is compared to other similar producers (Barney, 1991). Attributes of resources are evaluated on four types of characteristics in order to estimate the competitive advantage of the resources (Barney, 1991, 1995; Grant, 1991;1996) viz. 'valuable', 'rare', 'inimitable' and 'organized to achieve opportunities' (Barney, 1991) which is abbreviated as VRIO. The resources which are valuable to neutralize the threats of competitors, rare in the similar business field, impossible or difficult to imitate and organized to address opportunities in the market are important for achieving the excellent performance of the firm. The more the

VIRO attributes of the resources, the more is the capability to perform in the competitive environment. If we take the library as the case, VRIO attributes of resources are important to determine the strength and capabilities of the library, and design the services to users. Therefore, analyzing the internal strength of the firm is very important to structure and leverage the resources of the library. The evaluation of the resource and capability strength can avoid the 'overpromising gap' and close the 'user expectation and perception gap' (Parasuraman, Zeithaml & Berry, 1988).

The two basic assumptions of the RBV are 1) resources and capabilities are heterogeneous in the firm and 2) they are not perfectly imitable (Barney, 1991). Hence there can be firm-specific resource-capabilities and this nature creates a competitive advantage of the firm that helps to dominate the market until other companies imitate the resources and capabilities. The RBV theory has been conceptualized in various developments, such as 'core capabilities' (Leonard-Barton 1992), 'core competencies' (Fiol, 1991), 'transformational competencies' (Lado, Boyd & Fouts, 1997) etc. Newbert (2007) asserts that considering the conceptual variations of RBV has two distinguished theoretical approaches 1) VRIO based competitive advantage perspective (Barney, 1991;1997: 2001) and 2) Dynamic capability perspective ((Tecce et al., 1997).

RBV is an elementary source of competitive advantage (Barney & Hesterly, 2010) and it concentrates mostly on 'the knowledge base' (Sveiby, 2001). It recognizes the capabilities of the firm and is considered as the most influential theories of strategic management (Talaja, 2012). RBV involves structuring resource portfolios into capabilities, and leveraging these capabilities to create value to the company (Senyard, Baker & Steffens, 2010). RBV means the 'organizational performance heterogeneity' (Yang & Conrad, 2011) and the purpose of RBV is to combine the internal resources of the firm strategically to create a competitive advantage for the organization. A firm's internal resources can become a direct source of sustained competitive advantage (Davis & Simpson, 2017). Wright and McMahan (1992) claim that the internal resources of a firm must be able to add value to the firm, be unique or rare among competitors, must be impossible to imitate perfectly, and cannot be substituted with another resource of other firms. Confirming Barney's theory, Kraaijenbrink et al.

(2010) assert that the central proposition of RBV is that sustained competitive advantage of the firm can be achieved by acquiring and controlling valuable, rare, inimitable, and non-substitutable (VRIN) resources. VRIO framework provides a theoretical approach to defining the types of processes by which firms can exploit resources (Barney, 2001; Newbert, 2007). It helps organizations to understand whether the company's resources have strengths or weaknesses.

Competitive Position of the Library

Various businesses have stepped into the field of information service creating high competition among each other. As the existence of commercial information service providers in the field, libraries need to adhere to new trends apart from the traditional library service. These information service providers have been able to approach the users directly bypassing the library. As a result, users have moved to other options from the library, and some users no longer consider the library as the first port of call for information (Nyantakyi-Baah, 2016).

Libraries also face stiff competition emerging from agencies such as their parent institutions and accrediting bodies regarding the quality and impact of the service they provide to the community (Ahmad, 2016). This competition emerges not only from other libraries but also from other information sources and services available from commercial or non-commercial organizations (Cullen, 2001). The competition has been strengthened by the advancement of modern technology. Variety and abundance of information sources are becoming available to users through various business opportunities, creating competitive pressures on academic libraries. For instance, availability of massive mega bookstores, the emergence of online information providers, multimedia products, online document delivery services and other competitive sources of information are seen in the information business (White, Abels & Nitecki, 1994; Hernon & Altman, 1996; Andaleeb & Simmonds, 1998; Norliya & Khasiah, 2006). Hence, librarians face competition from other information providers such as cyber cafes and mass media etc. and from the same institution such as academic departments which directly subscribe to online journal databases (Mukuvi, 2013).

The sophisticated environment today has increasingly diversified the ways in which people can access data and information (Cordes, 2008). The digital era has revolutionized the methods for the organization and handling of information. As libraries move their focus from print collections to digital, the dependence relationship between library and user has been inverted. Power has clearly shifted from the library to the user, and it is essential to seek strategies to ensure that users continue to use and value the library (Kadli & Kumbar, 2013). In this circumstance, the great challenge for academic libraries is to address users' needs and satisfy their requests and expectations (Cullen, 2001).

Librarians must have a clear understanding of variations of user needs and have the ability to acquire adequate resources and capabilities and measures to leverage them strategically to create desired services for users. Library's ability to compete with other information providers is important for increasing the user's satisfaction (service quality) because users expect resources that are valuable to solve their information issues (Line, 1994). For example, if the library has access to a number of online full-text databases, it will be able to attract more users than other libraries. This means that the particular library has a much competitive position than others and the ability to satisfy user's expectations. Valuable resources attract users and uplift the quality. If library resources are rare among other service providers, users build up a higher perception of library quality considering that any resource they need can be accessed through the library. If the resources of the library are inimitable by others, users feel that the resources of the library are unique and can obtain the services that cannot be expected from other places. If the resources of the library are organized to trace the most expectations of users, it provokes the user to build up a higher positive perception towards the quality. Based on the above literature, we can come into propositions that the competitive position of library resource-capabilities leads to improve user satisfaction or instead the expected service quality.

VRIO tool can be applied to many cases, although interpretations could be different in different business settings. This can be utilized to measure the relative competitiveness through discovering the potential of firms, detecting changes in capabilities, designing appropriate strategies, building interventions and comparing rivals (Lin et al., 2012). Theoretically, it is

accepted that competitive resources have a higher demand. When there is a demand, there is satisfaction and then the perception of the expectation and hence the quality. Service quality is considered a key differentiator in the service organization and a key source of competitiveness for many organizations (Seth, Momaya & Gupta, 2008; Peris-Ortiz, Álvarez-García, & Rueda-Armengot, 2015).

Service Quality in Academic Libraries

Service quality is a key factor and a driving force for the sustainability of an organization (Santos, 2003). Professionals and practitioners view an interrelationship between satisfaction and service quality in different aspects. Some believe that quality leads to satisfaction while others support the concept that satisfaction causes the quality (Negi, 2009; Cronin & Taylor, 1992; Parasuraman et al., 1988; Saravanan & Rao, 2007). Asubonteng et al. (1996) assert that there are measurable attributes of both quality and satisfaction.

A study conducted by Al-Wugayan et al. (2010) reveals that customer satisfaction is influenced by the friendliness of employees, knowledge of employees, the accuracy of billing, physical facilities, materials, competitive pricing, service quality, good value and quick services provided by the firm. This reveals that satisfaction is associated with attributes of resources and capabilities. Sara (2013) concludes that the quality of service has a significant contribution towards customer satisfaction because various factors, such as human interaction, physical environment, value, price, performance etc. can affect it. Then quality also has a relationship with resource capability attributes. Moreover, Sara (2013) asserts that quality of service affects customer satisfaction up to a certain level as both concepts; quality and satisfaction are distinct. Sometimes, the relationship between them was found to be casual.

The conceptualization of service quality in academic libraries is no different from conceptualizations in other service contexts (Musyoka, 2013). Library service quality can be interpreted as the difference between the service quality expectation and perception of the user. Service quality is relevant to users and therefore it should be examined from users' point of view (Altman & Herson, 1998). As some practitioners point out, the quality of an academic

library service is based on the user's perception instead of how well the provision of service meets the user's expectations (Nyantakyi-Baah, 2016). The quality concept of the library refers to the satisfaction that is acquired by the user from way the services are provided by the library (Ahmed & Islam, 2012). When we consider the quality factors of the academic library, there are six aspects that support the institution to integrate with its quality: curriculum design, content organization; teaching, learning and assessment; student progression and achievement; student support and guidance; learning resources; and quality management and enhancement (Hewlett & Walton, 2001). Calvert (2008) explains that the service quality is generally more holistic than satisfaction in the library. It can be affected by all aspects of customer experience such as the convenience of car parking or public transport, the cleanliness of the toilets, and the colour scheme of the building. According to Hernon and Nitecki (1999), service quality in academic libraries involves three main areas such as information resources, the environment and the staff services.

But some scholars argue that service quality deals with the interaction between customers and service providers (Musyoka, 2013) and a mismatch between the customer's expectations and the service delivered will lead to customer dissatisfaction. If customer expectations are greater than the service provider's performance, then the perceived quality is less than satisfactory and hence customer dissatisfaction occurs (Parasuraman et al., 1985 cited in Musyoka 2013; Kyriillidou, 2008). Hence, the quality cannot be measured referring to one side user or service provider. Moreover, the provider's perception comes first in the performance level and hence it cannot be ignored when measuring the service quality.

There are many approaches and practices in measuring of service quality. Library managers have used traditional approaches such as input-output measures as well as new trends such as user-centered and evidence-based approaches (Nyantakyi-Baah, 2016). Yet, the measure is still ambiguous due to the lack of clear guidance from the literature and librarians still face difficulties to form an effective framework in implementing the quality management processes (Wilson, 2013). Service quality is considered as a key differentiator in the service organization and a key source of competitiveness for many organizations (Seth, Momaya & Gupta, 2008).

In the Sri Lankan context, the eight factor model adopted by Jayasundara, Ngulube and Minishi-Majanja (2009) attempted to predict the relationship between service quality and user satisfaction. Authors noted that some attributes of the quality measures are unique to Sri Lankan context. Somaratna and Pieris (2011) adapting the SERVQUAL model, identified seven dimensions appropriate to explain service quality in the University of Colombo library system. Using the same approach Somaratna, Pieris, & Jayasundara (2010) explored the gap between user expectation and performances in the library system of the University of Colombo. Nawarathne and Singh (2013) attempted to identify service quality dimensions by utilizing service quality indexes and user satisfaction indexes in university libraries of Sri Lanka.

Among the tools to measure service quality, Balanced Scorecard Model (BSC), European Foundation for Quality Management (EFQM Model), SERVQUAL Model, SERVPERF Model, Total Quality Management Model (TQM Model), LibQUAL+™ instrument and ClimateQUAL model have been used in the library context. All these tools have concentrated on assessing different aspects of the library service (Brown, Churchill & Peter, 1993).

LibQUAL+™ instrument is specifically designed for library evaluation purposes and it has been tested in many continents and in many environments in USA, Europe and Asia. In spite of some possible localization issues in the Sri Lankan context, LibQUAL tool can be adapted to measure the service quality than other available tools. In LibQUAL+ tool, service quality is measured from users' point of view as many studies emphasized that the determination of quality should be on users' view of perception.

According to Kyriallidou (2009), LibQUAL+® is a grounded protocol which includes a standard set of items. The instrument includes 22 survey items that measure overall service quality along three dimensions: (a) Service affect (b) Information control and (c) Library as place. LibQUAL+ items have been used as a core set of resources in many studies (Calvert, 2013; Thompson et al., 2005; Li, 2017; Sessions, Schenck & Shrimplin, 2002; Pai & Shivalingaiah, 2004; Posey, 2009; Nicol & O' English, 2012).

Given the above theoretical background, contemporary academic libraries operate in a highly competitive environment. Library managers need to improve the competitive capability of the library by strategically acquiring, accumulating, organizing and leveraging of resources and capabilities. Service quality is a salient factor in the competition. Service quality is a strategy for the development of the competitive advantage of the library, and on the other hand, the development of competitive capabilities of the library can lead to the improvement of service quality. Therefore, the assumption that there is a significant relationship between competitive capabilities and perceived service quality of libraries is established. Based on the above discussion, following theoretical framework is formulated and hypothesized that *perceived competitive position has a significant relationship with the perceived service quality level of the university libraries.*

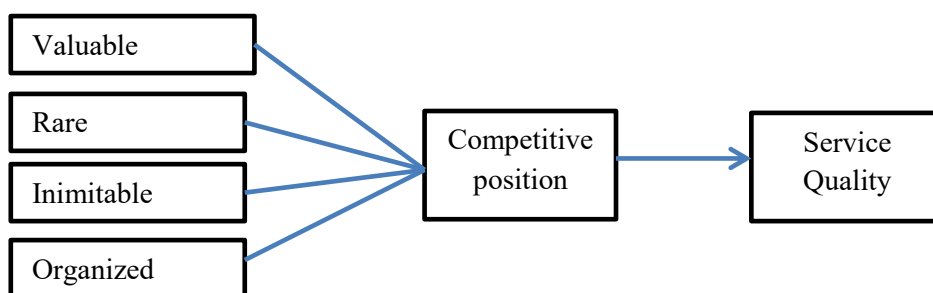


Figure 1: Competitive capability-service quality model for university libraries

Methodology

Based on the literature review and theoretical framework discussed above, following research questions were formulated to direct the study.

RQ1. What is the VRIO based competitive capability position perceived by university libraries of Sri Lanka?

RQ2. What is the perceived service quality level in terms of ‘service affect’, ‘information control’ and ‘library as place’ of university libraries in Sri Lanka?

RQ3. Is there a significant relationship between perceived competitive capability position and perceived service quality level of university libraries in Sri Lanka?

Following hypothesis was created under the objective No.3 and RQ3:

Ha₁ – Perceived competitive capability position has a significant relationship with the perceived service quality in university libraries.

In order to answer these research questions and test the hypothesis (Ha₁), a quantitative survey was employed by administering a structured questionnaire to collect data from 89 library professionals selected on a random basis from 15 state university libraries in Sri Lanka, and descriptive and inferential analyses were performed. The questionnaire was developed in the ‘Google form’ platform and the link to the online questionnaire was sent through e-mail to the list of selected library professionals of universities in September, 2020. The responses were collected within one week and retrieved data were refined for errors, tabulated and processed before analyzing. The analysis was made with simple descriptive and inferential statistics using 22nd version of SPSS software package.

Instrument Development

The study focused on two main variables: competitive capability and service quality. Therefore, research instrument consisted of two questionnaires:

Questionnaire 01 and Questionnaire 02.

Questionnaire 01 was to measure the competitive capability position of resource-capabilities of the university library. Although a number of readymade service quality measuring scales which were well tested in academic library environments are available in the literature, it was unable to find a readymade scale to measure the competitive capabilities in the academic library field. Therefore, a rigorous procedure (Churchill, 1979) which included four steps (1) construct domain specification, (2) construction of items, (3) data collection and (4) measure purification (Lewis, Templeton & Byrd, 2005) was followed to develop/adapt a research instrument usable for competitive capability measuring in university libraries. Here, the VRIO framework was considered as a base to measure the competitive position of the library resource-capabilities, and with the theoretical explanations; ‘Valuable’, ‘Rare’, ‘Inimitable’ and ‘Organized’ characteristics were used as domains of the construct.

Item Generation

A number of researchers (Hitt & Ireland, 1985; Grant, 1991; Amit & Schoemaker, 1993; Black & Boal, 1994; Bogaert, Maertens & Van

Cauwenbergh, 1994; Wade & Hulland, 2004) have grouped the firm's resources in categories for easy evaluation. According to Barney (1991) there are three types of resources categories: 1. Physical capital resources (physical, technological, plant and equipment), 2. Human capital resources (training, experience, insights) and 3. Organizational capital resources (formal structure). Amit and Shoemaker (2016) view that the resources of the firm appear in three types of categories: Financial or physical assets (property, plant and equipment), Know-how that can be traded (patents and licenses) and human capital (talent, expertise and experience). Analyzing the RBV literature Madhani (2010) treated seven resource categories: financial, physical, technological organizational, human, innovation and reputational. Kostagiolas and Asonitis (2009) grouped the academic library's intangible assets in three categories: (1) human capital (2) organizational (or structural) capital and (3) relational capital. Corral (2014) evaluated these resource categories of the academic library against value, durability, rarity, inimitability and non-substitutability characteristics to evaluate their competitive advantage.

Demarcating of boundaries between resource categories is exhausting, but it is not difficult to determine the key resource categories operated in a typical university library. For a fact, any university library has human resources, information resources, equipment and furniture. Generally, a typical academic library operates with main four resource categories viz. human resources, physical resources, information resources and organizational resources. Human resource represents the knowledge, skills, experience, competencies, networks and creativity of the employees (Edvinsson & Malone, 1997; Roos et al., 2012). Physical resources include all the physical facilities such as furniture, equipment, library space, computers, telephones and other machines and materials that are used to provide quality services. Similarly print and digital resource collections, access facilities to webpages, Online Public Access Catalogue (OPAC), databases etc. play an important role in the academic library service. Therefore, a special category was determined as 'information resources' which includes all the print as well as non-print materials and digital online resources. Finally, organizational resources represent the structural assets such as intellectual property, technology know-how, systems, management techniques, financial

allocation, organizational routines, procedures, image, history and reputation etc. (Reilly & Schweih, 1998; Grasenick & Low, 2004; Roos et al., 2012).

With the theoretical underpinning discussed above, a brainstorming session which involved a focus group discussion was implemented as the first step in developing a measuring instrument for the competitive capability of the library. The group of experienced librarians was asked to suggest a list of competitive strategies applicable to an academic library. Among 39 strategies suggested by the group was shortlisted using the Delphi method. Terms with duplicated meanings were deleted and terms with similar or close meaning were combined producing nineteen (19) terms which were again reviewed by a panel of experts recruited, representing five qualified academic librarians with doctoral capacity. The panel was asked to categorize the critical dimensions of competitive strategies of academic libraries considering the operational definition of RBV and VRIO attributes.

Next 19 item statements were generated considering the resulting product on the basis of VRIO attributes and relevant conceptual meaning of resource-capability categories in the university library context. The process followed multiple iterations with the support of the panel. As the instrument was targeted on psychometric measuring of individuals (unit of analysis), the Likert type scaling from 1-7 where 1= strongly disagree, 2=disagree, 3 disagree to some extent, 4 = not sure, 5= agree, 6, agree to some extent and 7= strongly agree was employed.

The questionnaire went through a pre-test in order to get the empirical feedback with a team of five library professionals who have knowledge of the field with Doctoral/MPhil qualifications and more than ten years of experience in the university library field. They were asked to complete the questionnaire and give comments and suggestions to improve the content, terminology understandability, conceptual relevancy and design. Modifications were made pertaining to the terminology, scaling and linguistic patterns based on the comments.

A pilot test was undertaken with 17 (15% of the total sample) library professionals selected randomly from the population. Further revisions were made on the terminology and wordings because some respondents showed difficulty in understanding the technical terms and the focus of statement.

Next, the revised questionnaire was subjected to 'item screening' with an eight member content evaluation panel. The panel members were asked to fill in the questionnaire and evaluate each item according to 1= not essential, 2= essential but need improvements and 3= essential. The Content Validity Ratio (CVR) for each item was calculated according to the formula $CVR = (n - N/2) / (N/2)$, where 'N' is the total number of panelists and 'n' is the frequency count of panelist indicating "essential" (Lawshe, 1975). Significant level of the item was determined according to CVR table of Lawshe, (1975). Accordingly, seven items indicated the CVR value as 0.75 and twelve items as CVR value 1.00 supporting the retaining of the items.

First exploratory assessment of the data showed that there were cross loadings on item no. 11, 15 and 16 (Table 1). Those items were removed and then employed an exploratory factor analysis again with a new set of data collected from a random sample of 48 respondents. Principal Component Analysis employed with the remaining 16 items (Varimax, $KMO = .756$), and the Scree plots of the analysis (SPSS, version 22) suggested retaining of four factors (Hutcheson & Sofroniou, 1999; Field, 2013). Four factors had eigenvalues over Kaiser's criterion of 1 and in combination it explained 75.3% of the variance. The clustering of items suggests that Factor 1 represents the 'Valuable' domain, Factor 2 represents the 'Organized' domain, Factor 3 represents the 'Rare' domain and Factor 4 represents the 'Inimitable' domain. On the reliability verification, overall Cronbach Alpha was .782 which is well above the accepted level. Accordingly, item No. 11, 15 and 16 were removed (Table 1) and remaining 16 items were selected for the final version of the Questionnaire 01.

Questionnaire 02 was to measure the perceived service quality by librarians. Among many tools to measure the service quality in the academic library context, LibQUAL+tool had been used by thousands of researchers all over the world in different continents. Literature also supports that it is applied in many cultures and many countries including USA, UK, Australia, Russia, China, India, Pakistan, Malaysia and successfully used as a research instrument. Although there are a number of critiques regarding the applicability of some items of the LibQUAL+tool, it fits to locality which can be adapted to fit the specific locality as a measurement tool. In Sri Lanka,

Wanigasooriya (2018) has used this tool to measure service quality in selected university libraries. LibQUAL.org website indicates that the tool has been used by more than 1,300 libraries in 33 countries since 2000.

Table 1: Factor structure of competitive capabilities measuring instrument

		Rotated Component Matrix ^a				
Competitive strategy	Survey item	Component				
		1	2	3	4	5
User orientation	1. Electronic resource collection of the library is well covered with various subject disciplines, so that it can attract more users.	.833				
Comprehensive collection	2. The resource collection of the library is adequate, relevant and comprehensive, so that it can fulfill any requirement of users.	.830				
Staff efficiency	3. Staff of the library is smart and proficient that it can properly address the information needs of users.	.809				
Valuable image	4. Our library is popular as a place of study, research and socialization.	.789				
Cost reduction	5. Our library spends less for hiring of experts because our employees have a good knowledge and training in library matters	.765				
Product/service diversification	6. Users can fulfill a variety of needs from the library because downloading, printing and photocopying facilities are available within the library	.750				
User-friendly access	7. Access Tools of our library are well organized in a user-friendly manner, so that users can locate needed information on their own		.858			
User-friendly process	8. Procedures, policies and opening hours of our library are arranged to maximize the convenience of users		.835			
Convenient service delivery	9. Users can easily access the library resources from their home/office with online help through the website		.824			
Capacity development	10. Our employees are well trained and properly assigned to identify and serve different needs of different users		.690			
Staff knowledge	11. Library has a knowledgeable staff to provide required services*	.642			.575	
Employee differentiation	12. We have special and rare to find subject librarians in our staff.			.889		
Product differentiation	13. Information Resource Collection of the library contains a lot of print and e-resources which are very difficult to find anywhere else.			.877		
Technological differentiation	14. We are the first to apply the modern and newest technology to the services offered by the library.			.846		
Place differentiation	15. The library has special and exclusive types of furniture, equipment and study space compared to other libraries*	.434			.741	
Staff expertise	16. Library has a knowledgeable staff to provide required services*		.506		.710	
Past experience	17. Our library has a prominent history as an efficient and attractive academic library in the country					.857
Special culture	18. The culture and social image of our library is unique because other organizations cannot copy them					.803
Inimitable value adding	19. The value adding process of our library is difficult to be copied by others in the field					.784
Eigenvalues		4.508	3.945	2.260		1.336
% of Variance		28.178	24.655	14.125		8.351
Cronbach Alpha		.887	.863	.895		.896
Extraction Method: Principal Component Analysis.						
Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 6 iterations.						

*these items are removed from the final questionnaire and main analysis.

Various studies confirmed the validity and reliability of LibQUAL+ as an assessment tool. As it is library specific, it enables gathering of enough information about user needs and making management decisions on improving service quality (Boyce, 2017). It has become a benchmark most widely used by many academic libraries in the world to measure their patron needs and satisfaction (Li, 2017). It has been well tested in different times, locations and cultures.

Service quality criteria must be common, although the aspect of perspective can be different. Same criteria can be measured in different viewpoints. The LibQUAL+tool was adapted to form a research instrument to measure the service quality in service provider's perspective. For instance, the survey items to measure the librarian's perspective were modified as to measure how librarians perceived their performances of quality indicators. For example, the first item of the questionnaire was rephrased as "Employees of the library are able to instill confidence in users". Further the subscales 'expected level' and 'desired level' were removed as it is not equally measurable in Sri Lankan university libraries due to the unequal status of universities. The measuring of all the items was based on the Likert type ordinal scale from 1 to 9 where 1= very low and 9=very high as in the original LibQUAL +tool.

The modified Questionnaire 02 went through a pre-test with a team of five library professionals asking them to complete the questionnaire and give comments to improve the content, terminology and understandability. The pilot test was conducted using 48 respondents randomly selected from the population. The exploratory assessment with SPSS (version 22, Principal Component Analysis, Varimax rotation) showed that all the items were loaded above the .5 threshold. KMO (.798) verified the sampling adequacy. Three factors had eigenvalues over Kaiser's criterion of 1 and in combination it explained 73.5643% of the variance. Overall Cronbach Alpha level was .831 which is well above the accepted level. Item clustering confirmed Factor 1 represents the 'Service Affect' domain, Factor 2 represents "Information Control Domain" and Factor 3 represents the 'Library as Place domain as in the original LibQUAL+ tool (Table 2).

Apart from the Questionnaire 01 and Questionnaire 02, the research instrument included items to collect biographic data, such as university, library type (faculty or main), designation, service experience, educational qualifications of the respondent.

Table 2: Factor Structure of Service Quality Measurement Tool

Item code & Dimension	Rotated Component Matrix ^a Survey Items	Component		
		1	2	3
Service Affect				
PQSA1	Employees of the library are able to instill confidence in users	.865		
PQSA2	Employees of the library give individual attention to users	.862		
PQSA3	Our staff is always ready to respond to users' questions	.857		
PQSA4	Our employees work with users in a caring fashion	.829		.229
PQSA5	Employees of the library have the knowledge required to answer users' questions	.789		.332
PQSA6	Employees of the library are reliable in handling users' service problems	.778		
PQSA7	Staff of the library is always courteous towards users	.743	-.219	.200
PQSA8	Our employees have willingness to help users	.724	-.213	.233
PQSA9	Library's employees are able to properly understand the needs of users	.671	-.168	.260
Information Control				
PQIC10	Electronic resources of the library are accessible from user's home or office	-.125	.903	-.159
PQIC11	The library has made available of easy-to-use access tools that allow users to find things on their own	-.123	.881	-.127
PQIC12	The library has sufficient amount of electronic information resources that users need		.871	
PQIC13	The library has modern equipment to let users easily access needed information		.852	
PQIC14	The library has sufficient amount of printed materials that users need for their work		.835	
PQIC15	The library has made independent use of information through easy accessibility		.803	-.200
PQIC16	My library has an efficient website that enables user to locate information on their own	-.219	.784	-.173

PQIC17	The library has print and/or electronic journal collections required for users' works		-158	.781
Library as Place				
PQLP18	The library has made available of sufficient space that inspires study and learning	.199	-.116	.911
PQLP19	The library has allocated comfortable and quiet space for individual activities of users		-.185	.891
PQLP20	The library has made available of community space for group learning and group study	.175	-.128	.882
PQLP21	The library has been established in a comfortable and inviting location			.880
PQLP22	The library is capable of functioning as a getaway for study, learning and research	.242		.872
Eigenvalues		8.238	4.796	3.150
% of Variance		37.445	21.801	14.318
Cornbach Alpha		.933	.945	.949

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Research Findings

Out of 89 participants, 70 questionnaires were received in which 66 were usable for the study. The response rate was 62.3%. The sample respondents were from 15 universities, from 33 libraries including 11 main libraries and 12 faculty libraries. Responded libraries were related to a variety of subject streams, medicine, engineering, agriculture, science, management, humanities and social sciences. The sample was well covered with educational qualifications which represented by 3 (4.5%) Bachelor's degree holders, 53 (80.3%) Master's degree holders, one (1.5%) MPhil. holder and 9 (13.6%) PhD. holders. In designation, the sample consisted of 16 (24.2%) Assistant Librarians, 45 (68.2%) Senior Assistant Librarians, 1 (1.5%) Deputy Librarian and 4 (6.1%) Librarians. Among respondents 24 were males and 42 were females. This indicates that the sample respondents have well represented the population.

Research Question 1 - What is the VRIO based competitive capability position perceived by the university libraries in Sri Lanka?

In order to answer this question, the rated values by respondents for each item were summed up and mean scores were calculated for each factor

(dimension). Table 3 indicates the sum of values and the mean value of each competitive capability indicator categorized under each VRIO.

Table 3: Perceived Competitive position of university libraries.

Dimension	Competitive position		
	Survey Item	Sum	Mean
Valuable	• Electronic resource collection of the library can attract more users because it is well covered with various subject disciplines	373	5.65
	• Our library resource collection is adequate, relevant and comprehensive, so that it can fulfill any requirement of users	370	5.61
	• Our library spends less for hiring of experts, because our employees have a good knowledge and training in library matters.	361	5.47
	• We have a smart and proficient staff which can properly address the information needs of users	359	5.44
	• Our library is popular as a place of study, research and socialization.	354	5.36
	• Users can fulfill a variety of needs from the library because downloading, printing and photocopying facilities are available within the library	327	4.95
	Total	2144	32.48
Rare	• Information Resource Collection of the library contains a lot of print and e-resources which are very difficult to find anywhere else.	369	5.59
	• We have special and rare to find subject librarians in our staff.	361	5.47
	• We are the first to apply the modern and newest technology to the services offered by the library	360	5.45
	Total	1090	16.52
Inimitable	• The culture and social image of our library is unique because other organizations cannot copy them	358	5.42
	• The value adding process of our library is difficult to be copied by others in the field	340	5.15
	• Our library has a prominent history as an efficient and attractive academic library in the country	339	5.14
	Total	1037	15.71
Organized	• Users can easily access the library resources from their home/office with online help through the website	369	5.59
	• Our employees are well trained and properly assigned to identify and serve different needs of different users	363	5.50
	• Access Tools of our library are well organized in a user-friendly manner, so that users can locate needed information on their own	358	5.42

• Procedures, policies and opening hours of our library are arranged to maximize the convenience of users	353	5.35
Total	1443	21.86

The results indicate that ‘Valuable’ dimension is the most competitive attribute (mean total 32.48) and the ‘organized’ attribute is indicated as the second most competitive (mean total 21.86) dimension. ‘Rare’ and ‘Inimitable’ dimensions scored the next competitive attributes respectively (mean total (16.52 and 15.71)).

When considering the competitive strategies, Information resources appeared to be the highest strategic resource to increase the competitive position via three competitive attributes ‘valuable’ (mean= 5.65), ‘rare’ (mean= 5.59), ‘organized’ (mean=5.59). It is worthy to note that ‘electronic resources’ have competitive capability in both domains: ‘valuable’ and ‘organized’. The second most important strategy is to have a skilled professional staff (valuable mean= 5.44, rare mean= 5.47, organized mean=5.50).

Research Question 2 - What is the perceived service quality level in terms of ‘Service affect’, ‘Information Control’ and ‘Library as Place’ in university libraries of Sri Lanka?

Ratings against each item of questionnaire 02 were calculated to answer Research Question 2. Descriptive statistics indicate that ‘Service Affect’ dimension contributes to the service quality than the other two variables (mean total = 56.86). The second most effective dimension is the ‘Information Control’ (mean total = 47.56) domain while the least contribution is made by ‘Library as Place’ dimension. Table 4 shows a detailed picture of the perceived contribution level of each indicator of the service quality in university libraries. According to Table 4, library professionals believe that service quality can be increased by developing professional knowledge, marketing and communication skills and personal relations of the human resource of the library. Library professionals have also concentrated on the development of information resources, facilitating easy and speedy access to information and applying modern technology in the service provision in order to increase the service quality. They have interestingly paid high attention on ‘inspiring study and learning space’ (mean=7.09) in the quality development process. However, they have paid

quite less attention on assisting users to find information on their own through the website (mean 5.86). This may be due to the lack of skilled staff in the library carder. It is noteworthy that employees' willingness to help scored a low value (mean=5.44) compared to others.

Table 4: Perceived Service quality of university libraries.

Dimension	Survey item	Sum	Mean	
Service Affect	• Employees of the library have the knowledge required to answer users' questions	447	6.77	
	• Employees of the library are reliable in handling users' service problems	440	6.67	
	• Library's employees are able to properly understand the needs of users	436	6.61	
	• Staff of the library is always courteous towards users	429	6.50	
	• Our employees work with users in a caring fashion	428	6.48	
	• Employees of the library are able to instill confidence in users	424	6.42	
	• Employees of the library give individual attention to users	396	6.00	
	• Our staff is always ready to respond to users' questions	394	5.97	
	• Our employees have willingness to help users	359	5.44	
	Total		3753	56.86
Information Control	• Electronic resources of the library are accessible from user's home or office	414	6.27	
	• The library has modern equipment to let users easily access needed information	407	6.17	
	• The library has sufficient amount of electronic information resources that users need	405	6.14	
	• The library has made available of easy-to-use access tools that allow users to find things on their own	394	5.97	
	• My library has an efficient website that enables user to locate information on their own	387	5.86	
	• The library has made independent use of information through easy accessibility	386	5.85	
	• The library has print and/or electronic journal collections required for users' works	375	5.68	
	• The library has sufficient amount of printed materials that users need for their work	371	5.62	
	Total		3139	47.56
	Library as Place	• The library has made available of sufficient space that inspires study and learning	468	7.09
• The library is capable of functioning as a getaway for study, learning and research		451	6.83	
• The library has made available of community space for group learning and group study		441	6.68	

• The library has been established in a comfortable and inviting location	425	6.44
• The library has allocated comfortable and quiet space for individual activities of users	422	6.39
Total	2207	33.44

Research Question 3 - Is there a significant relationship between perceived competitive capability position and perceived service Quality level of university libraries of Sri Lanka?

The hypothesis formulated on the basis of the literature review and the conceptual model was tested to answer the third research question. The hypothesis was aimed at testing whether there is a significant correlation between perceived Competitive Capability position and perceived Service Quality of the library. As the authors have used different Likert scales in the measurement instrument to measure the two main variables of the study (7 point scale for competitive capability position and 9 point scale for service quality as in the original LibQUAL+), averages of ratings was considered in the analysis. Thus, firstly the Competitive Capability position of the library was calculated by averaging the responded values for each VRIO dimension and then the average values for the whole VRIO were determined (Total VRIO average). Similarly, the average value was calculated for Service Quality (SQAverage).

Secondly, in order to measure the relationship between two variables, a Pearson Product-Moment correlation coefficient was computed to assess the relationship between the perceived Competitive Capability position (VRIO average) and the perceived Service Quality level (SQAverage). The results indicated that there was a positive correlation between the two variables ($r = .286$, $n = 66$, $p = .020$). However, the correlation indicates a low value which implies that the relationship is small (Table 5).

Table 5: Correlation between perceived service quality and perceived competitive position of university libraries

		Correlations	
		SQ average	VRIO Average
	Pearson Correlation	1	.286*
SQaverage	Sig. (2-tailed)		.020
	N	66	66

	Pearson Correlation	.286*	1
VRIOAverage	Sig. (2-tailed)	.020	
	N	66	66

*. Correlation is significant at the 0.05 level (2-tailed).

Thirdly, in order to look for how each dimension of VRIO contributed to the relationship with the service quality, a Pearson product-moment correlation coefficient was computed with four VRIO dimensions (CCVAverage, CCRAverage, CCIAverage and CCOAverage) as independent variables and the Service Quality (SQAverage) as the dependent variable. The results indicated that only two variables: ‘Inimitable’ (CCIAverage) attribute and ‘Organized’ (CCOAverage) attribute had a significant relationship with the service quality ($r=.249$, $p=.022$ and $r=.232$, $p=.031$ respectively). The ‘Rare’ (CCRAverage) attribute and ‘Valuable’ (CCVAverage) attribute had no significant association with service quality.

Discussion

The first objective of the study was to measure the competitive capabilities of the library in terms of VRIO attributes and it was found that the ‘valuable’ factor contributes most to the competitiveness. The ‘organized’ factor was the second most, while ‘rare’ and ‘inimitable’ factors were the next effective on competitiveness respectively. Accordingly, the results of the study indicate that library professionals of Sri Lankan universities have a quite high awareness of the competitive capabilities of the library.

The second objective of the study was to measure the perceived service quality by library professionals in university libraries in dimensions of ‘service affect’, ‘information control’ and ‘library as place’ as in the LibQUAL + tool. The study found that university library professionals in Sri Lanka seek the service quality through ‘service affect’, ‘information control’ and ‘library as place’ respectively as dimensions. This means that quality determinants mostly occur on human involvement and information resources of the library rather than providing of learning space. But when considering the item wise dispersion, several items in the ‘library as place’ dimension indicated higher scores.

The third objective was to explore whether the perceived competitive capability position of university libraries has a significant relationship with

the perceived service quality level. Even though the hypothesis test results indicate that there is a significant relationship between competitive capability position and service quality level perceived by library professionals, It shows a small correlation. This may indicate that the researched data is not sufficient to show a strong relationship and there are other latent variables that contribute to the service quality, or library professionals of university libraries in Sri Lanka are still not keen to integrate the competitive capabilities with service quality. This may be affected by the university environment. For a fact, government universities in Sri Lanka are mostly providing free education and most of the activities are based on the annual government funding. Therefore, the universities may not be interested enough in the competitive advantage, and the concept of library service is still administered with the 'free service' concept. However, the study reveals that library professionals have concerns on the competitors that emerged into their business. They seem to apply strategies mostly from new technology applications to the library service and making innovations in service delivery. As the most quality scores were dispersed around the 'library as place' dimension (mean ranges from 7.09- 6.39), they seem to believe that providing a comfortable learning place at the library might be a good strategy for competitive advantage. Similarly, as the staff involvement in the library has gained a high attention (mean total =56.86), the leveraging of human resource can improve the quality of the library to win the competition. This may be rather a survival attempt in the competition.

Application of VRIO attributes to the library seems still ambiguous because library professionals are less focused on the development of competitive capabilities as a strategy. This shows that the RBV theory is still not significantly applied in the academic library context and librarians seem rather continue the traditional models of service delivery with some attempts to make a few novel changes within the traditional models. The abstract nature of the theory to the government university library context might be the cause for this.

Conclusion

The study shows that service quality is affected by the competitive capabilities of the resources available in the library. According to the study's findings, overall competitive position of resource capabilities has a

relationship with the development of service quality in the university library. As there was a small relationship between two variables and only a moderate percentage of competitive position contributed to the service quality, further studies which follow robust instrumentation and a wider empirical investigation is essential to support the hypothesis. A large percentage amount of residual variables imply that there are more variables that contribute to the service quality.

Prioritization of service quality dimensions can vary depending on the nature of the organization. Service providers are required to identify important quality dimensions and work on achieving a high level of perceived service quality by users. By managing service quality dimensions, service providers will be able to enhance the service delivery towards the satisfaction of its users.

This study encountered several limitations. The competitive capability is a novel phenomenon in the library context and hence the development of a robust research instrument was difficult. On the other hand, library professionals in the free service context in Sri Lanka were unable to provide reliable data due to the abstract nature of the concept and lack of sufficient interest in it.

This study contributes to the body of knowledge by widening the areas of strategic application in LIS field. An instrument developed through a vigorous process to measure competitive capability in the university library field is introduced. This study also uncovers many research areas in the academic library field. Specially, as contemporary library professionals face the competition from same or similar service providers, they have to seek strategic applications to retain users.

Competitive capability is not unique in all environments as it depends on the nature of the library and user expectations. Hence, future studies may concentrate on improving the research instrument to address the local as well as global level university library contexts. Service quality is subjected to different dimensions. Therefore, future research on service quality in academic libraries should thrive to focus on service provider capabilities, organizational agility, dynamic capabilities as well as user demands. This

may help developing a more comprehensive 'Service Quality Index' for university libraries.

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