The Role of Intellectual Capital in Providing High-Quality Banking Services: Empirical Evidence from Commercial Banks in Kurdistan Region

Dler Ibrahim Faqo[1]

Department of General and Operations Management, Samara National Research University, Russian Federation, Samara.Correspondence: Dler Ibrahim Faqo, Samara National Research University, Department of General and Operations Management, Russian Federation, Samara.
Email: fayeq.ali@tiu.edu.iq

Abstract

Current research explores the role of intellectual capital in providing high-quality banking services: empirical evidence from commercial banks in the Kurdistan Region. We used the quantitative study method and the survey questionnaires to obtain empirical data from bank managers and clients. The data were analyzed using PLS 3, primarily to test the hypotheses. The results supported the research hypotheses that intellectual capital (IC) and its components positively and significantly related to providing high bank service quality for commercial banks in Erbil city. This relationship demonstrates the strength of the intellectual capital relationship and its ability to measure high bank service quality (BSQ) in surveyed banks. The result showed that intellectual capital (IC) and components, namely human capital, structural capital, and customer capital, positively impacted bank service quality. This research contributes to the literature by representing that the intellectual capital component stands as the base for providing high-quality banking services.

Keywords: Intellectual Capital, Human Capital, Structural Capital, Customer Capital, Service Quality, and Commercial Banks.

1. Introduction

The business environment has transformed from physical resources as the primary asset to intellectual assets among the most vital inputs due to their intrinsic value. Therefore, awareness has recently increased the importance of this scarce resource, which represents innovation in commercial banks' services, which has dramatically affected the performance of their banking services. As indicated by Mustafa (2016), intellectual capital is the primary driver of creativity and innovation. And it is considered one of the priorities to achieve sovereignty and continuity. With its various elements, intellectual capital plays a vital role in forming intangible assets with a pioneering capacity by enhancing the capabilities and distinctive human energies and discovering and flowing their potentials through unleashing their creative energies. Consequently, companies are currently portraying themselves as educational organizations and realizing that intellectual capital assets can foster technological innovation applications and play a vital role in improving business performance, including enhancing the quality of services in commercial banks. In this regard, these banks are working to develop a resource-based view of the incentives provided to commercial banks. Both tangible and intangible assets are potential strategic assets and show the advantages of tangible and intangible assets. This theory has been widely accepted in the administrative and economic literature as it yields positive results among banks' resource and performance measures. (Canibano et al., 2000).

However, a growing consciousness is critical to securing a sustainable competitive advantage in the commercial banks' intangible assets (Othman et al., 2020). In particular, it is recognized that knowledge-based intangible possessions are fundamental to the value creation process. These assets have been increasingly referred to by the new term intellectual capital (IC). IC is also a new topic modeled theoretically in the global trade environment in recent times (Pourkiani et al., 2014). The IC has become an essential resource for economic growth and social prosperity. The wealth of individuals, organizations, regions, and countries is directly linked to the use of their intellectual capital skills and capabilities (Chao et al., 2015; Sharabati & Nour, 2013). Commercial banks, in particular, can practices intangible assets more effectively and use the tools necessary to move away from traditional forms of banking services and achieve a better chance in the quality of banking services provided to customers (Joseph et al., 1999). However, extensive studies have focused on exploring the influence of intellectual capital on the financial performance of banks. A few studies have addressed its impact on the quality of the service in the banking sector. Besides, previous studies have been conducted primarily in developed countries and developed market economies, which have significant differences in political, social, and economic systems compared to developing economies such as Iraq and the Kurdistan Region.

The research is structured as follows: The first section includes a brief introduction. We covered the literature on the intellectual capital and quality of banking service, the research model, and development hypotheses in the second section—the third section, presenting the research methodology. The fourth section includes the analysis

results, and the fifth section covers discussions about the results, conclusion, recommendations, and suggestions for future research.

Problem statement

The theory of intellectual capital (IC) revealed that with the knowledge-based economy, IC is created stable value and maintains bank service quality as a factor for reaching competitive advantage (Pablos, 2002). In the new economic era, intellectual capital resources such as human capital, organizational and relational capital have become the most critical factor in commercial bank's success and the main factor in creating value for banks and companies (Maditinos et al., 2011). While the dimensions of bank service quality mainly focus on inquiring clients about their predictions and views on their services from various banking institutions. Benefits of providing better client banking services include increased profitability, client satisfaction, and client loyalty. Therefore, it is necessary to ensure the quality of the service supplied by a commercial bank. The study problem embodied in the main study question: To what extent intellectual capital (IC) impact banks' service quality (BSQ).

2. Literature Review

2.1. Intellectual Capital (IC)

The commercial banks' success and strength of their management lie in effectively investing their intellectual capital in strengthening and preserving them. As the interest in intellectual capital has become a prominent and priority topic in business management thinking. The intellectual capital is based on considering that the human element is the basis for forming intellectual assets. Through this element, the organization (bank) can control the sources of competitive advantages, which are the knowledge available to the organization's members. The term intellectual capital is relatively new. Despite this, the literature on intellectual capital that has dealt with this topic is referred to through numerous contributions to researchers' bodies and developing a comprehensive concept (Mustafa, 2016; Chao et al., 2015). Intellectual capital (latent) assets have become one of the commonly used terms. These assets are represented by the knowledge available to the employees, relationships with suppliers and customers, the market position, and the knowledge general to the organization. The essential assets are intellectual assets, which play an increasing and significant role in organizations' survival (Sadq et al., 2020).

Intellectual capital has also been defined as creating the ability to bring something new to the ground of existence, while creativity is defined as generating a new idea and its implementation by transforming it from its ideal state into reality (Pourkiani et al., 2014). From the managerial point of view, intellectual capital is the knowledge that can be converted into value or profit; that is, it is the value embedded in the ideas rooted in people, processes, customers, and stakeholders (Chatzkel, 2002). Intellectual capital is the set of information resources formed in the form of two types of knowledge and visual knowledge that are easy to express or write and pass on to others in documents and tacit knowledge based on intuitive rules for personal experiences. This is used in the development of the organization (Daft, 2001). According to Abdullah and Sofian (2012), intellectual capital is an intangible asset consisting of technology, customer loyalty, brand name loyalty, and goodwill. The most widely used definition of intellectual capital is the value of an organization. Its main components are human capital, structural capital, and client capital. This definition indicates that knowledge management (the sum of known) creates intellectual capital (Salman et al., 2012).

Human capital (HC) is defined as the grouping of human skills, knowledge, innovation, and capabilities of the human resources or organizations' employees to perform a particular task (Edvinsson and Malone 1997). Fernstrom and Roos (2005) define human capital as employee values creating potentials depicted in the firm's employees' and managers' skills, experiences, abilities, and talents. Human capital captures the knowledge, professional skills, experience, and innovativeness of employees within an organization. It combines knowledge, skills, ability to innovate and complete tasks, including company value, culture, and philosophy (O'Regan et al., 2001; Samad, 2013). HC is strategically located in the group of human capabilities, experiences, and skills operating in the organization, which can be managed and invested through the full activation of its energies and the continuous improvement of its performance (Mustafa, 2016).

Structural capital has been defined as representing the structural capabilities of an organization that can share knowledge, transfer. Some realize that the structural capital depends on the organization in meeting the market's needs and is considered the knowledge it obtains, an integral part of its organizational structure, culture, and operations (Rose, 2000). According to Stewart (1997), structural capital (SC) is the knowledge assets of a company's property. SC also is hardware, software, databases, organizational structures, patents, trademarks, and everything else from organizational capabilities that support their employees' productivity; in other words, everything will be left at the office when employees return. There is system technology, hardware, software, operating system company, organization, patent, brand, and training company (Mustafa, 2016; O'Regan et al., 2001).

Client capital is the company's relationships when doing business and includes customers and suppliers, mainly while retaining satisfaction and adherence (Harris, 2000). Customer capital is closely linked to its relationship with its customer loyalty and its relationships with its partners or suppliers (Shih et al., 2010). The company's relationships with parties outside the company are included in customer capital. In this case, the need for good relations with outsiders such as the government, markets, suppliers, and customers creates loyalty. Client capital is one of the most important sources of competitive advantage for organizations. It includes how to improve the customers' view of the organization and make them feel that it is the leading partner in designing a long-term strategy and the extent of their willingness to part with this partner (Nordby, 2005).

2.2. Bank Service Quality (BSQ)

Bank's service quality is considered an essential topic; thus, researchers investigate the main drivers of a bank's service quality. Service quality is a multidimensional concept consisting of five key dimensions: reliability, responsiveness, assurance, empathy, and tangibles (Hassan, Mustafa & Ismael, 2020). Quality of banking service can be defined as the perception of the bank's customers that the mobile banking system can provide a service that significantly meets their needs and expectations (Ennew and Waite, 2007). The quality of bank service is well-defined explicitly by Teas (1993) as measuring the expectations of objective customers about banking at the level of performance based on the previous experience. Therefore, the banking industry's factors can be divided into two main categories: commercial and technical developments. The emergence of new technologies such as blockchain and robotics has dramatically affected the performance of the banking industry. Markland et al. (1995) understand banks' service quality as offering the service to the banking customer and satisfying customer financial needs. It also a procedure that depends on the agreement between the client and the bank on the level of service it wishes to receive and the possibility of meeting its needs. The service quality is free of any defect during its completion, and the client issues this judgment after realizing the service's actual performance (Hassan et al., 2020; Maidan, 1996). Service quality is challenging to define, measure, control, and communicate in the same connection. However, it is crucial to the success of commercial banks. The service providers (banks) should understand the two quality of service and as follows (Etzel et al., 2001):

- Quality of service is determined by the customer and not by the service provider.

- The customer appreciates the service's quality by comparing the expectations with their observations on how the service performed.

While Heizer and Render (2001) consider the intangible component of services more difficult to measure than to measure the quality of the physical element, the product user has properties in his mind that form the basis for balancing alternatives. However, a lack of intellectual property knowledge of any client may eliminate the service in further study. Moreover, they may recognize quality as a set of features that have many features that are less different from those of competitors and distinguish this approach between goods and services and quality differences that are difficult to identify in services. Kotler (1997) stresses that managers have to differentiate between the quality of achievement and conformity quality. While the quality of achievement refers to the level at which the product is achieved. The match's quality indicates that it is free from defects and the durability with which the product is launched at a certain level of achievement. Therefore, we can distinguish between the ideal quality and the appropriate quality since the materials are standard specifications and high accuracy.

2.3. Research Conceptual Model

This study intended to investigate how intellectual capital (IC) and its dimensions enhance the commercial banks' ability to provide high bank service quality and more competitive, increasing banks' profits and productivity. The model formed is based on the literature on intellectual capital (IC) and bank service quality (BSQ). This refers to the positive associations between the study variables. The study model is an outline that displays a set of logical relations that may be in the form of a quantity or how and combine the main features of the reality in which these associations are concerned. However, the intellectual capital (IC) included human capital, structural capital, and customer capital are independent variables. The dependent variable is banks' service quality (BSQ), represented by reliability, tangibility, assurance, empathy, and responsiveness (see Fig. 1) below.
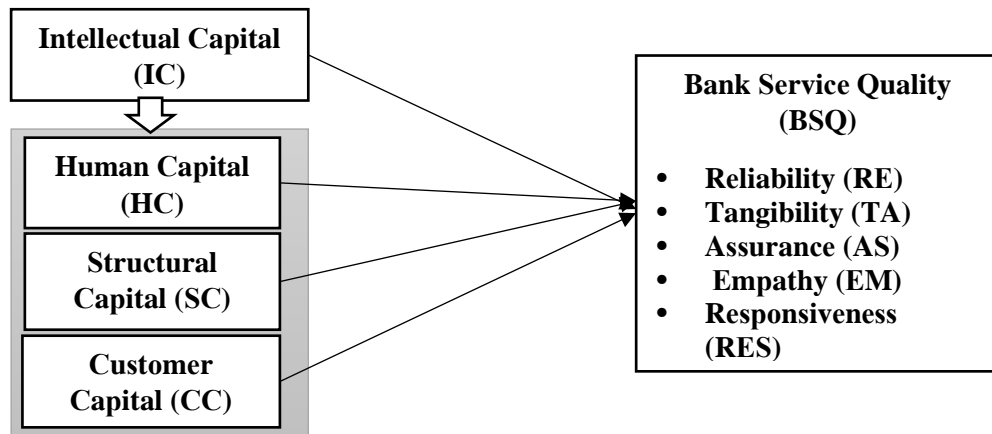
Figure 1. The Research Conceptual Model

2.4. The Relationship Between IC and BSQ

Empirical literature showed that intellectual capital, in general, enhances business performance and particularly banks' service quality. Previous studies worldwide show the positive and significant links between intellectual capital and banks' service quality. Among these studies, Goh (2005) examined the intellectual capital of Malaysian commercial banks based on the VAIC ™ model and showed a significant association between bank service quality and human capital efficiency. Namasivayam and Denizci (2006) analyzed the influence of human capital on service firms. The researchers stated that social behaviors, such as employees' creativity and emotional intelligence, should be adequately evaluated because they influence perceived value to the clients. Based on their work. Results showed that the business operations of service firms (banks) are close to being tied to human capital. Joshi et al. (2010) explored the impact of intellectual capital on the bank's performance and service quality. The results also showed that human capital has higher explanatory power to enhance Australian banks' IC performance and service quality. Abdulsalam et al. (2011) conducted a strong correlation between investment strategies in the intellectual capital and companies' competitive performance and service quality, where most of the relationships were positive. Based on the above theory and empirical findings, the research proposed the following hypotheses:

Ha. Intellectual capital (IC) is positively and significantly impacts bank service quality (BSQ).

Hb. Human capital (HC) positively and significantly impacts bank service quality (BSQ).

Hc. Structural capital (SC) positively and significantly impacts bank service quality (BSQ).

Hd. Customer capital (CC) positively and significantly impacts bank service quality (BSQ).

3. Research Methodology

This research examines the role of intellectual capital in providing high-quality banking services: empirical evidence from commercial banks in the Kurdistan Region. To achieve that, we used the quantitative study method and survey questionnaire to obtain empirical data from managers in some commercial banks operating in Erbil city, Kurdistan. As Saunders, Lewis & Thornhill (2012) indicated, many business studies used the quantitative method. The research design supports data for the research variables, and the research design also defines the sample's perceptions (Bryman & Bell, 2015).

3.1. Measurement of Main Constructs

In this research, four constructs are defined for the measurement model and proposed hypotheses. However, all constructs adopted from literature related intellectual capital and bank service quality that all tested by previous studies. The constructs were also adapted from the operating field. The survey's first part involved the intellectual capital (IC) components, such as human capital (HC) measured by five items, while four indicators measured structural capital (SC). And then, customer capital (CC) is also measured by four indicators, all adapted from (Sadq et al., 2020). The banks' service quality constructs have 22 items adapted from (Rashid et al., 2019). The survey used a 7-point measuring scale, as 7= completely agree, 6= mostly agree, 5= somewhat agree, 4= neither agree nor disagree, 3= somewhat disagree, 2= mostly disagree, and 1= completely disagree.

3.2. Research Subjects

The empirical data were obtained through survey questionnaires from managers at commercial banks operating in Erbil city, mainly those serving in the financial sector for over five years. Commercial bank clients were also selected to measure banking services quality based on intellectual capital efficiency and banking technology applications, and 152 clients responded to the survey. However, 137 managers participated in the study by replying to the questionnaire statements, which were self-administered and distributed in the banks' departments, particularly to the managers who willingly accepted the invitation to participate in the study, as revealed in Table 1 below. The survey questionnaires were administered to the managers who are working for some commercial banks in Erbil. At the final step of the empirical data collection, 140 completed surveys were returned. Three forms of the 140 surveys were eliminated as they had missing data; therefore, the final samples were 137.

Results in Table 1 presented that 64.2% (n= 88) of survey participators were female and male 35.8% (n= 49). Regarding the age groups, 59.9% (n= 82) were in the age group of 30-39 years, reaching the peak amount. While 22.6% (n= 31) belonged to 40-49 years, 11.7% (n=16) belonged to 50-59. However, 5.8% (n= 8) aged less than 30 years. The highest academic degree obtained was bachelor's degree 68.6% (n=94), as most managers who participated in the survey in younger age, followed by high school degree holder's 25.5% (n=35). Master degrees came at last place 5.8% (n=8) of the overall sample. The outcomes on job experience presented that 40.1% (n=55) managers experienced between 16-20 years. 28.5% (n= 39) experienced was fall in a group 11-15 years, 23.4% (n=32) had the experience of 6-10 years, lastly, 8% (n=11) experienced less than five years (see Table 1).

Table 1. Profiles of research subjects

Profile	Description	Frequency	Percentage	Total
Gender	Male	49	35.8	
	Female	88	64.2	**137**
Age Groups	Less than 30 years	8	5.8	
	30-39	82	59.9	
	40-49	31	22.6	**137**
	50-59	16	11.7	
Level of Education	High School	35	25.5	
	Bachelor Degree	94	68.6	
	Master Degree	8	5.8	**137**
Overall Experience	Less than five years	11	8.0	
	6-10 years	32	23.4	
	11-15 years	39	28.5	**137**
	16-20 years	55	40.1	

3.3. Data Analysis

For hypotheses testing, we used partial least squares structural equation modeling (PLS-SEM), since both significantly evaluate research model with various constructs. The PLS is also a typical examination method for checking path models (Henseler and Sarstedt, 2013). In this regard, before checking hypotheses, we establish convergent reliability, validity, and discriminant validity. To establish reliability each construct indicators loading values should be equal or >0.7; however, for convergent validity, the values of the average variance extracted (AVE) should be higher than >0.50. Also, composite reliability (CR) values should be >0.80 (Hair et al., 2014). For establishing the constructs, internal reliability, the Cronbach's α value should be equal to 0.7 or higher. Besides AVE's square roots' values should be higher than the correlation among the latent variables (Chin et al., 2008).

4. Results

4.1. Establishing Reliability and Validity

Table 2 showed the AVE's values for all study model constructs ranged from 0.589 and 0.743, all greater than 0.05. The CR values are varied between 0.805 and 0.915. This result indicated that all model constructs CR values greater than >0.80. The values of Cronbach's α ranged from 0.753 to 0.870, all higher than 0.70. These results

displayed reliability and validity and a high correlation between the constructs and their indicators. However, the factor loading values ranged from 0.742 to 0.939, which all values higher or equal to 0.70. Therefore, the factor loadings for all constructs intellectual capital (IC) and bank service quality (BSQ) are accepted. These results established the survey validity, which means a high correlation between all constructs was used to measure the banks' service quality in Kurdistan.

Table 2. Assessment of measurement model

Constructs	Indicators	Loadings	AVE	CR	Cronbach's α
Intellectual Capital (IC)	HC1	0.849	0.743	0.910	0.870
	HC2	0.830			
	HC3	0.758			
	HC4	0.839			
	HC5	0.791			
	SC1	0.742			
	SC2	0.801			
	SC3	0.774			
	SC4	0.809			
	CC1	0.830			
	CC2	0.779			
	CC3	0.778			
	CC4	0.834			
Bank Service Quality (BSQ)	RELI1	0.771	0.672	0.871	0.821
	RELI2	0.846			
	RELI3	0.939			
	RELI4	0.908			
	RELI5	0.933			
	TANG1	0.806	0.701	0.881	0.837
	TANG2	0.909			
	TANG3	0.807			
	TANG4	0.865			
	TANG5	0.850			
	ASSU1	0.806	0.733	0.900	0.838
	ASSU2	0.909			
	ASSU3	0.807			
	ASSU4	0.865			
	ASSU5	0.850			
	EMP1	0.914	0.589	0.805	0.753
	EMP2	0.879			
	EMP3	0.854			
	RES1	0.866	0.617	0.875	0.811
	RES2	0.806			
	RES3	0.867			
	RES4	0.831			

> Extraction Method: Principal Component Analysis.

Note. IC= Intellectual Capital, RELI= reliability, TANG= tangibility, ASSU= assurance, EMP= empathy, and RES= responsiveness.

4.1. Correlations Analysis

The constructs' convergent validity (correlations) also assessed by Fornell–Larker criterion. We considered the square root AVE values of each constructs, that should be higher than relationships with all other constructs. However, AVE coefficients' square roots should be established in the connection, along with the diagonal (Henseler and Sarstedt, 2013; Hair et al., 2014). The discriminant validity established that AVE root square values are higher than correlations with any other model constructs, as showed in Table 3.

Table 3. Assessment of discriminant validity.

Fornell–Larker Criterion				
	HC	*SC*	*CC*	*BSQ*
HC	**0.878**			
SC	0.879	**0.838**		
CC	0.719	0.791	**0.889**	
BSQ	0.699	0.780	0.780	**0.867**

Note. *HC= human capital, SC= structural capital, CC= customer capital, BSQ= bank service quality*

4.2. Hypotheses Testing

Before testing the proposed hypotheses, we have established the relationships between model variables. In this regard, the path analysis was used to find the degree of intellectual capital influence on bank service quality (BSQ). The value of R square is 0.396 showing the impact and correlation between the experimental and predicted values of the dependent variable. However, this indicates that the human capital, structural capital, and customer capital account for 39.6% of the commercial banks' bank service quality (BSQ) in Erbil. Such as Cihan Bank, Kurdistan International Bank (KIB), RT Bank, Erbil Bank For Investment and Finance (EBIF), Commercial Bank of Iraq (CBI), Ashur Bank, and Bekhal Commercial Bank (BCB).

Table 4. Path Coefficients, t-values, and p-value

Hypotheses	Path Analysis	Path Coefficient (β)	*t*-value	*p*-value	Result
Ha	IC ---> BSQ	$\beta = 0.629$	9.404	0.000	Supported
Hb	HC ---> BSQ	$\beta = 0.504$	6.783	0.000	Supported
Hc	SC ---> BSQ	$\beta = 0.674$	10.590	0.000	Supported
Hd	CC ---> BSQ	$\beta = 0.703$	11.501	0.000	Supported
The R of R square value of BSQ is 0.396					

Note. IC= intellectual capital, HC= human capital, SC= structural capital, CC= customer capital, BSQ= bank service quality
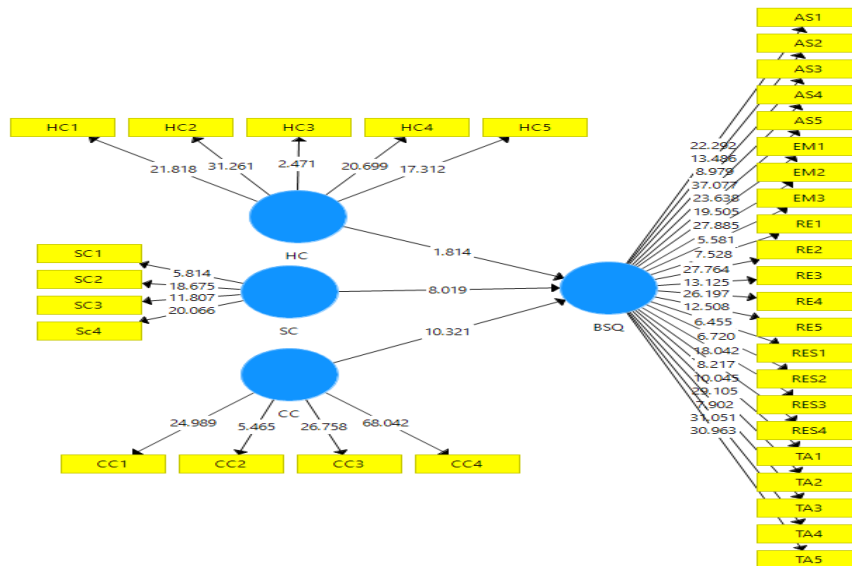
Figure 2. Bootstrapping

As the results demonstrated in Table 4, we checked the path coefficients of intellectual capital (IC) on bank service quality (BSQ). The result presented that intellectual capital positively and significantly impacted bank service quality with a strong coefficient of effect up to (β=0.629, p0.000); hence, the first hypothesis (Ha) is accepted. The result showed that human capital (HC) is also positively and significantly impacted bank service quality with a strong coefficient of effect up to $\beta = 0.504$, p0.000); the hypothesis (Hb) is accepted. The result revealed that structural capital (SC) is positively and significantly impacted bank service quality with a strong coefficient of effect up to ($\beta = 0.674$, p0.000); the hypothesis (Hc) is accepted. Results showed that customer capital (CC) is positively and significantly impacted bank service quality with the most significant coefficient of effect up to ($\beta = 0.703$, p0.000). The hypothesis (Hd) is accepted.

5. Conclusions and Recommendations

5.1. Conclusions

The intellectual capital components showed that commercial banks in Erbil had great importance as intellectual assets are among the main issues of the bank's vision and strategic plan. Besides, since intellectual capital is the guiding force behind the competition in light of the knowledge economy, it is the primary driver of creativity and innovation in banking services. Therefore IC is considered one of the priorities for achieving high service quality. In this context, some authors' findings have shown that value-added-based intellectual capital positively affects banks' service quality. The results of correlation analysis showed that intellectual capital (IC) positively and significantly related to providing high bank service quality for commercial banks in Erbil city. This relationship demonstrates the strength of the intellectual capital relationship and its ability to measure high bank service quality (BSQ) in surveyed banks. The result showed that intellectual capital (IC) and components, namely human capital, structural capital, and customer capital, positively impacted bank service quality.

5.2. Recommendations

In particular, commercial banks in Erbil and, generally, Kurdistan Region have to invest more in intellectual capital and technology applications to bring about strategic business success. For their significant role in improving the bank service quality. In this context, several researchers point out that intellectual assets and technology are the most important elements of structural capital and bank service quality (Othman et al., 2020; Rangriz & Raja, 2011; Spanos, 2002). The research recommends that banks improve their human resources skills, where competencies can be enhanced with training programs conducted by the banks. As human capital also is the package that includes innovations, knowledge, experiences, and educational capabilities. Human capabilities are also the weapon in development, with their actual power that guarantees business continuity. The banks' possession of intellectual capital is a competitive advantage through the knowledge it provides. The bank can invest this knowledge to improve its banking services. It is unique and unavailable knowledge that provides intellectual contributions that help the bank increase its productivity.

The results of our study showed that structural capital in commercial banks could effectively provide services through the performance of technology applications. Banks also have to invest more in SC. Structural capital in the bank supports employees in their work performance and is represented in the infrastructure and support for workers and includes physical parts of computers, software, processes, patents, and trademarks. Structural capital is the existing knowledge found within the organization that can be collected, tested, organized, and integrated, and the critical part can be available for distribution. It is significant for banks in Erbil to enhance their client capital, which is one of the most important sources of competitive advantage for banks. It includes how to improve the customers' view of the bank and make them feel that it is the leading partner in designing a long-term strategy and the extent of their willingness to part with this partner. Commercial banks pursue to reach competitive advantages by adding value to their customer.

5.3. Limitations and Recommendations for Future Study

The common method bias (CMB) may have affected our statistical investigation. Therefore, we have used some approaches to reduce CMB matters by following the best possible procedures since persistent subjects are linked to the survey-based data reviewed. Based on that, in further study, the hypotheses should be tested using a larger dataset. The empirical study data were obtained from sampling units, namely banks' clients and commercial banks managers at the Cihan Bank, Kurdistan international bank (KIB), RT Bank, Erbil bank for investment and finance (EBIF), commercial bank of Iraq (CBI), Ashur Bank, and Bekhal commercial bank (BCB) in Erbil-Kurdistan to avoid CMB. Consequently, when future research increases the survey set of data from different service organizations and industries, the findings could be practical to a broader context and deliver the findings' generalizability. The mediation role of banking technology applications was presented in the impact of intellectual capital on banks' service quality. We recommend future research to test more modern technology applications as a mediator.

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