Research

INTELLECTUAL CAPITAL PRACTICES AND FINANCIAL EFFICIENCY: A MEDIATING ROLE OF BANKS' PERFORMANCE: EVIDENCE FROM THE BANKING SECTOR OF PAKISTAN

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Abstract:

The study attempts to examine the impact of intellectual capital (IC) practices (i.e. human capital, structural capital and relational capital practices) on financial efficiency through mediating the role of bank performance. We collected data for 518 banks' professionals through questionnaire and use the direct path way and multiple regression to examine the impact of IC practices on mediating variable (bank performance) and mediating variable on dependent variable (financial efficiency). The results reveal that the proposed hypotheses are statistically significant (p<0.01) and that banks' performance partially mediates the relationship between IC practices and banks' financial efficiency. This study provides valuable insights on the impact of IC practices on financial efficiency of banks through mediation of bank performance. The tested theoretical relationship reveals that banks which are more involved in IC practices get better results than their competitors.

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Introduction:

The financial sector performs a fundamental role in underpinning the economic development of any country. At present, Pakistan's economy is facing severe problems for the last more than a decade; recording less than 5 percent economic growth over the last 5 to 7 years. These pathetic downturns are due to the slow transformation of input-driven to knowledge-driven economy and a lack of substantial foreign direct investment particularly in the financial sector of Pakistan. However, since early 2000 this sector had attracted substantial foreign investment and paved the way to a knowledge driven economy due to foreign investment and transformation of knowledge assets. Most of the Pakistan governments have failed to formulate any strategic planning in order to shift the economy from input to a knowledge oriented economy which is also very important for sustainable economic growth. In the early 2000's Malaysia had prepared and introduced (The Knowledge Economy Master Plan) which was published in 2001 to shift the economy into knowledge driven economy. Similar initiatives were also introduced and implemented by (New Zealand Ministry of Economic Development, 1999), The Scottish Office in 1999 and in the UK (Ministry of Trade and Industry in 1998).

Intellectual capital (IC) has fashioned the concentrations of many researchers, scholars, practitioners, authors and policy makers and have attributed different definitions of IC. It is a very important ingredient for business promotion and development. Therefore, Stewart (1997) and Itami (1987) illustrate that IC is knowledge, information and experience that can be found to generate wealth and profit for organization's survival and competitiveness.

Intellectual Capital (IC) is an intangible and knowledge base resource of a firm where human capability, experiences and their skills (i.e. human capital), innovation processes, procedures and technology (i.e. structural capital) and relationship with internal and external stakeholders (i.e. relational capital) are used to enhance the

performance of the firms' (Itami 1987). Knowledge resources are very important for proven growth of organizations (Boedker et al., 2005; Abrahamson & Fairchild, 1999; Boisot, 1998) because "knowledge drives the organizations" (Bontis, 2000). The management of knowledge resources(i.e. intellectual capital) is very important for sustainable growth, competitiveness and value creation(Huang and Liu, 2005). Pulic (2001) and Sharabati et al., (2010) argue that one of the most valuable resource of organization are intellectual, intangible or knowledge assets that helps to improve the competitiveness of business. However, this study attempts to examine the impact of intellectual capital practices on financial efficiency of banks through the mediating role of banks' performance using the positive paradigm the extant of literature has identified the relationship between the IC practices and firms' financial performance in context of knowledge driven economies (Tan et al., 2007; Goh 2005; Joshi et al., 2010; Mohiuddin et al., 2006; Firer and Willia`ms 2003; Kamath 2008; Maditinos et al., 2011; Mavridis 2004; Goo and Tseng 2005;Mavridis 2005).

However, there is a scarcity of literature to substantiate the mediating role of banks' performance that strengthen the relationship between IC practices and firms' financial performance in the context of Pakistan. Very little attention has been devoted towards developing the underlying relationship in international context (Sharabati et al., 2010; Goh 2005; Goo and Tseng 2005; Mavridis 2005). This study is also inimitable because most of the studies have focused on accounting and financial techniques (VAIC™ etc.) for measuring IC performance which is now under severe criticism due to validity problems where VAIC™ only describes the efficiency of the firm's labor and capital investment (physical investment) and has nothing to discuss with IC performance in its true sense(Stahle, Stahle and Aho 2011).

This study is an extension of Sharabati et al., (2010) which precisely addresses the impact of IC practices on financial

performance and bridging the most significant gap through providing some new insights for knowledge base economies. The findings of the study help managers to better understand the role of IC practices for banks' financial performance as well encouraging the practitioners and bankers to focus more on IC practices in order to accelerate banks' performance.

Literature Review

Prior research suggests that IC has gained the attention of researchers, scholars, practitioners and as well as policy makers who have attributed different definitions of IC (Sharabati et al., 2010;Bontis, 1998).Stewart (1997) and Itami (1987) state that IC is knowledge, information and experience that can be found to generate wealth and profit for organization's survival and competitiveness. It is a very important ingredient for firms' performance where contemporary research suggests that organization's sustainable performance is based on human capabilities, experiences and their skills (HC), innovation process and technology (SC) and relationship with internal and external stakeholders (Itami 1987; Sharabati et al., 2010). Stewart (1997) and Lynn (1998) assert that IC is knowledge, information, experience, intellectual property and intangible material that can be put to generate wealth while Booth (1998) state that IC is people and non-people related assets and their ability to transform innovative ideas into products and services for value creation. Ross and Ross, (1997) suggest that shareholder's wealth and business value creation is based on the extant of intangible resources, which are easy to transform into knowledge and then into shareholders' wealth and firm's value creation.

Prior research reveals that IC used to generate value as well as competitive advantage that turns to improve business performance (Martinez and Garcia-Meca, 2005; Porter 1999; Stewart, 1997, Bontis, 2000). Ordonez de Pablos (2004) suggest that IC is a key determinant for proven growth of business. Its theoretical mechanism describes the key practices related to human capital, structural capital and

relational capital for business performance (Sharabati et al., 2010). Therefore, the current study attempts to examine the impact of IC-practices on financial efficiency through the mediating role of banks' performance based on argument that "if you cannot measure it, you cannot manage it" (Ordonez de Pablos, 2004, p. 643).

Intellectual Capital Practices:

Research has identified three major practices of IC namely human capital, structural capital and relational capital practices. The extant of literature have been published to examine the relationship of IC (human capital, structural capital and relational capital) with firm's performance (Tseng and Goo, 2005; Kamath, 2007 and 2008; Goh, 2005;Nazari and Herremans, 2007; Ordonez de Pablos 2004;Sharabati et al., 2010).

Human Capital Practices:

Human capital is recognized as an intangible asset relating to people's knowledge, skill, experience and ability to generate value (Roos and Roos 1997; Edvinsson and Malone 1997). It has received considerable attention of policy makers, academicians and practitioner over the two last decades. This emerging trend has shaped the strategic position of human capital in dynamic business' environment. Therefore, it always requires substantial investment to upgrade the skill of HC among the firms' who believes that HC is a valuable strategic asset for future growth of business. It is inherited skill, knowledge, proficiency of employees where organizations' enhance its performance through continuous learning and trainee programs (Sharabati, Jawad and Bontis, 2010). The more competent HC means the more efficient the organizations' performance (Goh, 2005: Rehman et al., 2011). Human capital efficiency has a positive and significant relation with a firm's performance therefore; it is considered a more strategic and valuable resource for sustainable performance of the firm (Rehman et al.,2011;Peteraf, 1993).

Structural Capital Practices:

Structural Capital (SC) is another important component of intellectual capital (IC). It refers to supportive infrastructure processes, procedures, databases, systems, patents, trade mark, copy rights, technology that enables the human capital to function properly. Structural capital is a valuable tactical asset which is composition of non-human assets. Sharabati et ., (2010)define structural capital as systems and programs, research and development (R&D) and intellectual property rights (IPRs) are the non-human warehouses of knowledge. If an organization has poor structural capital, barrier to deploy necessary resources, then it will find the difficulty to achieve its optimum performance outcomes (Wang et al., 2014). This suggests that supportive structural capital tends to help organizations by fostering innovative systems, procedures and friendly culture that might have a better impact on financial outcomes (De Brentani and Kleinschmidt, 2004). Previous studies have found that SC has positive and significant effect on financial performance in terms of return on asset , return on equity and revenue growths, earning per share (Mohiuddin,Najibullah and Shahid 2006;Rehman et al.,2011; Phusavat*et al.* 2011; Liao et al., 2011; Pandey and Dutta, 2013; Wang et al., 2008).

Relational Capital Practices:

The relational capital (RC) refers to relationship with customers, suppliers and stakeholders that influences the firms' life. RC is the measure of organization external relationships such as customers, suppliers, and even with competitors to which organization has strong communications and goes through partnership, alliances, purchase and sell contracts. To strength an organization value, it is very important for managers to define, understand and making strong communication its stakeholders. Furthermore, human and relational capital is intrinsically linked because it is your organization people who create and maintain strong relationship with your stakeholders. Sharabati, et al., (2010) define relational capital as strategic alliances,

licensing and agreements, customers and supplier relations. Cheng et al., (2010) suggest that customer relation is a crucial factor to bring competitiveness which may positively influences corporate performance. The maintenance of customer's relation is a knowledge embedded component which influences the business performance. This suggests that effective marketing strategies foster the customer relations (Bontis1998). Prahalad and Ramaswamy (2000) found that the customers are the source to increase the competency of organizations.So, it is the embedded knowledge of relations with internal and external stakeholders (Roos et al., 1997).

3. Research Hypotheses:

H1: Banks' performance is positively influenced by human capital practices.

H2: Banks' performance is positively influenced by structural capital practices.

H3: Banks' performance is positively influenced by relational capital practices.

H4: Financial efficiency is positively influenced by human capital practices.

H5: Financial efficiency is positively influenced by structural capital practices.

H6: Financial efficiency is positively influenced by relational capital practices.

H7: Financial efficiency is positively influenced by bank performance.

H8: Banks' performance mediates the relationship between IC practices and financial efficiency

Theoretical Frame work:
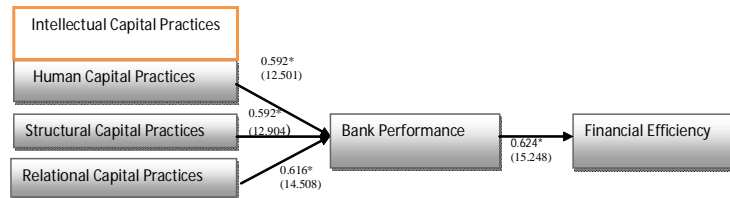
Methodology:

The study employs the amended survey instrument of Bontis (1998); Cabrita and Bontis (2008); Zack et al.(2009); Sharabati et al., (2010). Based on positivism paradigm, the study uses probability random sampling technique and attempts to collect data from middle and senior level banks' employees working in both public and private banks. The study considers 518 valid responses out of 650 having minimum 3 years' experience. This sampling choice was based on few considerations. First, in this highly competitive environment, intellectual capital practices perform a fundamental role for development and protection of knowledge resources which substantially contribute to firms' performance. Second, this sector is also one of the most knowledge-oriented where production of knowledge related activities tends to innovate and stayed the organization in this competitive environment. Finally, selected banks robustly encourage IC-practices and expected to improve the both operational and financial performance of banks thus offering the unique setting for testing this novel relationship between IC-practices and banks' financial through mediation of non-financial performance. This criterion was developed to ensure that employees participating in research survey must have explicit knowledge and information about IC practices and its role for

sustainable performance of banks.The study considers three big cities(Lahore, Gujranwala and Faisalabad) of Punjab and overall response rate was 79.69%. This study employs principal component analysis, direct path way, multiple regression and paired correlation in order to examine the underlying relationship.

Instrumentation and Data Collection:

First part of instrument attempts to capture the basic demographic information of respondents including, age, gender, qualification, salary, designation and experience of respondents. Second part covers the items to measure independent variable IC practices i.e. human capital, structural capital and relational capital practices and third part covers items to measure dependent (i.e. financial efficiency) and mediating variables (i.e. banks performance). The responses of hypothesized model of independent variable (IC practices) were obtained at five point Likert Scale (Strongly Disagree=1,Disagree= 2, Neutral=3, Agree=4, Strongly Agree =5)whereas, the respondents are requested to rank their organization's performance in terms of (dependent variable: ROE/ROA, profitability) and a mediating variable (bank performance: quality of servicing/product, operation cost, innovation and rate of new product development, customer satisfaction and customer retention) relatively to other banks on a five-point Likert-type scale (one of the lowest=1, below average=2, average=3, above average=4, one of the highest=5).

Scale Validation and Reliability:

Table 1 represents the reliability and internal consistency of the measures using Cronbach's values. Cronbach's coefficient ranging from 0.652 to 0.826 which indicates that each construct presents moderate to high reliability. Values of Cronbach's coefficients are for human capital practices (0.800), structural capital practices (0.826), relational capital practices (0.813), financial efficiency (0.652) and bank performance (0.780). This study ensures the face, content and

constructs validity of the instrument (Sharabati, Jawad and Bontis 2010; Zack, McKeen and Singh 2009; Starns and Odom 2006). The scale validity is confirmed through pilot study by conducting 13 semi structured interviews of branch and area managers which have facilitated to include some good IC practices in the study.

Table 1

Reliability of Measurement

Constructs	Valid N	Number of items	Cronbach's Alpha
Human Capital Practices	518	09	0.800
Structural Capital Practices	518	09	0.826
Relational Capital Practices	518	08	0.813
Financial Efficiency	518	02	0.652
Bank Performance	518	04	0.780

Results and Discussions:

Factor analysis:

To examine the construct validity (Convergent and discriminant validity), factory analysis was employed using Principal Component Analysis (PCA) with varimax rotation method. The purpose of KMO and Barlett's test of sphericity is to examine that whether the data is suitable for factor analysis. KMO measure of sample adequacy determines the strength of relationship whereas the Bartlett's Test of Sphericity Chi-square refers to the orthogonality of components of a construct. The study employs factory analysis to condense the large number of items into small number of items of uncorrelated factors. For instance there are nine items of human capital practices reduced to one independent variable to simplify the understanding of phenomena. So, one of the generic assumption of factor analysis is that the dimensions of the construct are correlated.

Table 2 presents the results of KMO for each construct for human capital practices (KMO=0.861), for structural capital practices (KMO=0.881), for relational capital practices (KMO=0.840)for financial efficiency (KMO=0.500) and for bank performance (KMO= 0.753).Bartlett's test of sphericity indicates the strength of relationship and assumes the null hypotheses that there is no correlation among the constructs. As a rule of thumb, a p-value<0.05 confirms the strength of relationship among the constructs. So, in all the cases the Bartlett's test of sphericity is less than 0.01 which confirms the strength of relationship and negate null hypotheses for continuity of factory analysis.

Table:2

KMO and Bartlett's Test

Constructs	No. of Items	KMO Measure of Sample Adequacy	Bartlett's Test of Sphericity Chi-Square	Bartlett's Test of Sphericity Sig.
Human Capital Practices(HCP)	09	.861	937.837	0.000
Structural Capital Practices(SCP)	09	.881	1105.0	0.000
Relational Capital Practices(RCP)	08	.840	1018.0	0.000
Financial Efficiency	02	.500	129.992	0.000
Bank Performance	04	.753	541.219	0.000

Eigenvalues:

All the components (table3) of constructs are the principal components because eigenvalues are greater than 1 and used for further analysis and interpretations. This shows eigenvalues are greater than one and total variance explained using the PCA extraction method. HCP consists of 9 items explaining the 38.671%, SCP consists of 9 items and explains the 42.006% variance, RCP consists of 8 items which postulates the 43.636% variance, financial efficiency and bank performance comprise of 2 and 4 items and present the variation of 74.212% and60.756% respectively.

Table3

Eigenvalues and total variance explained:

Construct	Components		Initial Eigen Values	
		Total	% of Variance explained	Cumulative % of variance explained
Human Capital Practices	Comp 1	3.480	38.671	38.671
Structural Capital Practices	Comp 1	3.781	42.006	42.006
Relational Capital Practices	Comp 1	3.491	43.636	43.636
Financial Efficiency	Comp 1	1.484	74.212	74.212
Bank performance	Comp 1	2.430	60.756	60.756

As a thumb rule, the minimum value for the loading of all the items should be greater than 0.40 and for cross loading should not be above 0.40. For all the constructs (HCP, SCP, RCP, FE and BP) the relevant items are loaded on just one component with varied factor loading ranging from 0.650, 0.574, 0.673, 0.653, 0.626…… and 0.764 etc. So, component matrix confirms the criteria of construct validity including both discriminant validity (because the value for the loading of all the items are greater than 0.40 and for cross loading items are above 0.40) and for convergent validity (eigen values are greater than 1).

Table : 4

Components Matrix

ITEMS	Component
HC Practices	
competence of bank employees	.650
employees when they cooperate with each another in teams tasks	.574
Bank's employees undergo continuous training programs every year	.673
Bank's employees continuously learn from colleagues and outsiders	.653
Bank emphasizes to hire experience and expert employees in their respective areas	.626
Employees provide maximum input for the bank that differentiates bank from rivals	.572
Bank considers employees as resourceful and innovative compared to rivals	.655
Bank prefers to consider employee's innovative and knowledge ideas for discussion	.585
Bank has effective recruitment policies to hire best employees	.601
SC Practices	
Bank has well structured reward and promotion systems relating to performance	.634
Bank manuals, procedures and policies are supportive to work and innovation.	.595
Bank support their employees by continuously upgrading their knowledge, skill and education where it is necessary.	.674
Bank performs a significant role in research and development (New Products and Innovation).	.675
Bank continuously develops and re-organizes operations based on structure and responsibilities.	.648
Top management has a deep concern for research and development.	.695
Bank has clear strategies and procedures for intellectual property rights (IPRs) management.	.698
Bank monitors the performance of intellectual property rights (IPRs).	.600
Management considers intellectual property (IP) a key intellectual asset for value creation.	.605
Relational Capital Practices	
Bank is currently working on joint projects with other organizations.	.533
Bank has diverse alliances of R&D, servicing and marketing.	.685
The bank is able to add value through its strategic alliances and agreements.	.688
Bank devotes significant time and effort to sustain the long standing relationship with customers.	.751
Bank prefers customization and continuously strives to resolve customers' problems.	.692
It is important for bank to share knowledge with customers.	.617
Bank prefers to deliver product knowledge to customers through multiple channels.	.655
Bank prefers to get feedback from customers about product innovation.	.642
Financial Performance	
ROE and ROA	.861

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Table 5 demonstrates the results of proposed research hypotheses (H1, H2 and H3) in order to determine the effect of IC practices on mediating variable banks' performance. The results of simple regression related to IC practice (i.e. human capital practices, structural capital practices and relational capital practices) on dependent variable (bank performance) present that intellectual capital practices(HC, SC and RC) have positive (β=0.592; β=0.592 and β=0.616) and statisticalsignificant relationship with bank performance at (p<0.01). Results show that banks' performance capture the optimal effect from relational capital practices (β=0.616, R^2=0.300) as compare to other two IC's practices.

Table:5

Direct Relationship Path Way

Dependent Variables	Independent Variables		
	Human Capital Practices	**Structural Capital Practices**	**Relational Capital Practices**
Bank Performance	.592*	.592*	.616*
R^2	.241	.253	.300
Adjusted R^2	.240	.251	.298
F-Statistics	156.263*	166.513*	210.474*
t-Statistics	12.501	12.904	14.508
Sig	0.000	0.000	0.000

Note: *, ** and *** present the level of significance at less than 0.01, 0.05 and 0.10 respectively

Table 6 presents the results of independent variables (HCP, SCP and RCP) and a mediating variablebanks' performance on dependent variable financial efficiency. Results demonstrate that IC practices and mediating variable banks' performance have a highly significant (P<0.01) effect on financial efficiency of banks. It also reveals that among IC's practices SCP has relatively substantial effect on financial efficiency of banks apart from other constructs. This means that financial efficiency captures more effect from SCE as compare to other two IC's practices.

Table:6

Direct Relationship Path Way

Dependent Variables	Independent Variables			
	Human Capital Practices	**Structural Capital Practices**	**Relational Capital Practices**	**Bank Performance**
Financial Efficiency	.514*	.523*	.501*	.624*
R^2	.150	.164	.164	.322
Adjusted R^2	.149	.163	.162	.320
F-Statistics	87.479*	97.225*	96.967	232.498*
t-Statistics	9.353	9.860	9.847	15.248
Sig	0.000	0.000	0.000	0.000

Note: *, ** and *** present the level of significance at less than 0.01, 0.05 and 0.10 respectively

If the direct effects of independent variables on mediating variable and mediating variable on dependent variable are significant then mediation can be tested. Table 5 and 6 exemplify that direct effect of IC practices on mediating variable (bank performance) and mediating variable on dependent variable (financial efficiency) are significant and similarly direct effect of IC practices on dependent variable (financial efficiency)is also significant satisfying thus satisfying the conditions of Baron and Kenny (1986) for mediation.

After successfully satisfying the conditions set by Baron and Kenny (1986) for mediation. Table 7 presents the results of multiple regressions for mediation analysis where combined impact of each independent variable (HCP, SCP and RCP) with mediating variable (banks' performance) is examined on dependent variable (financial efficiency). In case of human capital practices, results of mediation analysis illustrate that the values of β estimates reduced from 0.514 to 0.194 but it still remain significant (p<0.01) which indicates that some of the effect on financial efficiency go through mediating variables i.e. banks' performance thus suggests that banks' performance partially mediates the relationship between human capital practices and financial efficiency. Similarly in case of structural capital practices (SCP) and relational capital practices (RCP),the results of multiple regression postulates that values of β estimates for both SCP and RCP also reduced from 0.523 to 0.210 and 0.501 to 0.169 respectively and still

remain significant (p<0.01) which also indicates that banks' performance partially mediates the relationship of SCP and RCP with financial efficiency. Hence, drawing from above results it may be concluded that banks' performance partially mediates the relationship between IC practices and financial efficiency.

Table:7

Multiple regression analysis for mediation

Independent Variables	Dependent Variables (Financial Efficiency)		
HCP	.194*	------	-------
	(3.475)	------	-------
BP	.545*	------	-----
	(11.758)	------	-----
SCP	------	.210*	-----
	------	(3.837)	-----
BP	-----	.534*	-----
		(11.453)	-----
RCP	------	----	.169*
	-----	----	(3.107)
BP	------	----	.542*
	------	----	(11.186)
R²	.338	.342	.335
Adjusted-R²	.335	.339	.332
F-Statistics	124.916*	126.865*	123.130*

Note: *, ** and *** present the level of significance at less than 0.01, 0.05 and 0.10 respectively

Conclusion:

The empirical results of the study reveal that IC practices have positive and significant (P<0.01) relationship with mediating variable (banks' performance).Results of simple regression demonstrate human capital, structural capital and relational capital perform fundamental role to enhance the intellectual capital efficiency (ICE) of intangible assets of banks. The results of the study also illustrate that relational capital relatively explain more variation (R^2=29.8) and significant contributor (β=.616) to accelerate the banks' performance.

Similarly, banks' performance have significant effect (P<0.01)on financial efficiency and conform the requirements of mediation set by Baron and Kenny (1986). Banks' performance partially mediates the

relationship between IC practices and financial efficiency. The results suggest that there is a direct positive relationship between IC practices, banks' performance and financial efficiency which is consistent with the findings of (Wang et al., 2012; Wang et al., 2014; Mavridis and Kyrmizoglou, 2005; Malaysia Goh2005;Yalama and Coskun, 2007;Sharabati et al., 2010,Goo and Tseng 2005). This study also highlights that banks are intense to reserve the relationship with internal and external stakeholders as indicated by mean values for all the eight elements of relational capital are 3.5275, 3.5879, 3.6634, 3.8297, 3.8418, 3.8723, 3.8895, and 3.7809. Similarly, banks prefers to deliver the product knowledge through multiple channels and are intense to share product knowledge with customers, because mean value for both are 3.89 and 3.87 relatively higher as compare to other elements of relational capital. So far relational capital is concern the mean value indicates that banks' need to emphasize more on joint projects and diverse strategic alliances of R&D relating to servicing and marketing in order to strengthen the relational capital performance.

Implication for Research:

The study also provides strong evidence that banks are involved in intellectual capital practices but not effectively compared to other studies, which in results more positively influences the banks' performance.

Table:8

Coefficient of Determination (R^2) comparison with other studies

Constructs	Variables	Current Study	Sharabati et al.(2010)	Bontis (1998)	Bontis et al.(2000)a	Bontis et al.(2000)b	Bollen et al. (2005)	Wang, C.(2005)
HCP	Independent	.150	0.419	-----	-----	-----	0.522	0.344
SCP	Independent	.164	0.309	0.249	0.580	0.842	0.535	0.337
RCP	Independent	.164	0.450	0.245	0.637	0.639	0.455	0.40
BP	Mediating	.322	0.517	0.560	0.069	0.011	0.192	0.568
FE	Dependent	-----	-----	-----	-----	-----	-----	-----

Note: [a] **Service industry sample,** [b] **non-service industry sample.**

The results of study are also consistent with the existing literature which has been conducted in both national and international contexts in different industries. It is recommended that the generalizability would be more effective for future researchers by increasing the sample size and also provide the following recommendations;

1) One of the noteworthy limitations of study was only conducted among branch level employees and it would be wise to consider board of directors in sample.

2) It faces explicit limitation of cross sectional data and overlaps the time lags for detail investigation.

3) Although, study focuses on financial sector, there is ample need to generalize IC practices in other knowledge intensive industries.

4) All the dimensions and constructs are used in this study have reliability and validity range from good to excellent. However, exploration of more elements in IC practices would provide more acceptable results.

5) The research setting for this study is also inimitable because most of the studies have focused on accounting and financial techniques (VAIC™ etc.) for measuring IC performance which is now under severe criticism due to validity problems (Stahle, Stahle and Aho 2011). They showed and critically evaluated that VAIC™ only indicates the efficiency of the firm's labor and capital investment (physical investment) and has nothing to discuss about IC performance in their true sense. However, researchers must decompose the IC phenomena and need to explore IC practices that determine the bank's current and future growth.

6) Table 9 presents the results of paired correlation which is highly significant at 1%. However, there is ample need for future researchers to explore more relevant IC practices in order to determine inter relationship among these practices which turns in more improved firm's performance.

Table : 9

Correlation among constructs for comparison

Paired Constructs	Current Study	Sharabati et al.(2010)	Bontis (1998)	Bin Ismail (2005)
HCP-SCP	0.733*	0.659 *	0.492 *	0.524 *
SCP-RCP	0.663*	0.699 *	0.197	0.555 *
HCP-RCP	0.723*	0.687 *	0.499 *	0.510 *
HCR-BP	0.491*	0.647 *	0.509 *	0.520 *
SCP-BP	0.503*	0.557 *	0.508 *	0.501 *
RCP-BP	0.547*	0.670 *	0.639 *	0.641 *
HCP-FE	0.388*	-	-	-
SCP-FE	0.406*	-	-	-
RCP-FE	0.405*	-	-	-

Note: *Correlation is significant at level 0.01(Two Tailed)

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Appendix Questionnaire. Dear employee I am conducting this research to examine the relationship of **Intellectual C efficiency: a mediating role of banks' performance: Evidence from banking sector of Pakistan**. This survey instrumen and give your unbiased response. For that purpose you must be at least 18 years of age and have been employed by your orga take approximately 10 minutes to complete the survey. Moreover, all information provided by you will be kept confidential.

Part I- Intellectual Capital Practices	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
(a) Human capital practices					
1 The competence of bank's employees as a whole is equal to ideal level (matching with their work requirements and responsibilities).	O	O	O	O	O
2 The bank gets the most from the employees when they cooperate with each another in teams tasks.	O	O	O	O	O
3 Bank's employees undergo continuous training programs every year.	O	O	O	O	O
4 Bank's employees continuously learn from colleagues and outsiders	O	O	O	O	O
5 Bank emphasizes to hire experience and expert employees in their respective areas.	O	O	O	O	O
6 Employees provide maximum input for the bank that differentiates bank from rivals.	O	O	O	O	O
7 Bank considers employees as resourceful and innovative compared to rivals.	O	O	O	O	O
8 Bank prefers to consider employee's innovative and knowledge ideas for discussion.	O	O	O	O	O
9 Bank has effective recruitment policies to hire best employees.	O	O	O	O	O
10 The competence of bank's employees as a whole is equal to ideal level (matching with their work requirements and responsibilities).	O	O	O	O	O
11 The bank gets the most from the employees when they cooperate with each another in teams tasks.	O	O	O	O	O
(b) Structural Capital Practices					
12 Bank has well-structured reward and promotion systems relating to performance.	O	O	O	O	O
13 Bank manuals, procedures and policies are supportive to work and innovation.	O	O	O	O	O
14 Bank support their employees by continuously upgrading their knowledge, skill and education where it is necessary.	O	O	O	O	O
15 Bank performs a significant role in research and development (New Products and Innovation).	O	O	O	O	O
16 Bank continuously develops and re-organizes operations based on structure and responsibilities.	O	O	O	O	O
17 Top management has a deep concern for research and development.	O	O	O	O	O
18 Bank has clear strategies and procedures for intellectual property rights (IPRs) management.	O	O	O	O	O
19 Bank monitors the performance of intellectual property rights (IPRs).	O	O	O	O	O
17 Top management has a deep concern for research and development.	O	O	O	O	O
18 Bank has clear strategies and procedures for intellectual property rights (IPRs) management.	O	O	O	O	O
19 Bank monitors the performance of intellectual property rights (IPRs).	O	O	O	O	O
20 Management considers intellectual property (IP) a key intellectual asset for value creation.	O	O	O	O	O
(c) Relational Capital Practices					
21 Bank is currently working on joint projects with other organizations.	O	O	O	O	O
22 Bank has diverse alliances of R&D, servicing and marketing.	O	O	O	O	O
23 The bank is able to add value through its strategic alliances and agreements.	O	O	O	O	O
24 Bank devotes significant time and effort to sustain the long standing relationship with customers.	O	O	O	O	O
25 Bank prefers customization and continuously strives to resolve customers' problems.	O	O	O	O	O
26 It is important for bank to share knowledge with customers.	O	O	O	O	O
27 Bank prefers to deliver product knowledge to customers through multiple channels.	O	O	O	O	O
28 Bank prefers to get feedback from customers about product innovation.	O	O	O	O	O

Part II. The respondents are requested to rank their bank's performance in terms of profitability, ROE/ROA, quality of servicing/product, operation cost, innovation and rate of new product development, customer satisfaction and customer retention relatively to other banks a five-point Likert-type scale (**one of the lowest=1, below average=2, average=3, above average=4, one of the highest=5**).

29 ROE and ROA	O	O	O	O	O
30 Profitability	O	O	O	O	O
31 Quality of services	O	O	O	O	O
32 Innovation and rate of new product development	O	O	O	O	O

Gender _____   Age _____Salary _____ Qualification _____

Designation _____Experience (in current organization) _____ Total experience_____