
Credit risk management resource efficiency in the implementation on Basel Accord: a study of Pakistani banking sector

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Abstract: This research endeavours to examine credit risk management (CRM) capabilities for Basel accord implementation in Pakistani banks. The results obtained depict that the banks in Pakistan do not have adequate human resource capabilities for CRM that is affecting their risk performance and Basel accord implementation. This research introduces a new measure of credit risk measurement, which is credit risk weighted assets to credit risk employees ratio. This ratio has been used for measuring capabilities of banks for implementation of Basel Accord. Keeping in view the results it is suggested that further work is required by the banks and the regulators to improve the availability and training of human resources for CRM and ultimately to reap the benefits of Basel Accord implementation.

Keywords: Basel Accord; Pakistan; post implementation; credit risk weighted assets to credit risk employees ratio; State Bank of Pakistan.

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1 Introduction

Global banking industry has become complex and risky because of excessively leveraged banking supported by technology upgradation and global integration (Sahajwala and Van den Bergh, 2000). This has further lead to enhanced risk management regulations (Carauana, 2004). Over the period of time regulations set by the Basel accord have emerged as a mechanism that is globally acceptable for treatment of risk in financial institutions. Basel rules serve as a cushion between bank losses and the economy (BIS, 2004; Hassan Al-Tamimi, 2008; Anjum, 2018). An important feature of these rules is tying banks to prescribed capital limits against their ability to take risk exposures (Amidu, 2007; Tampakoudis et al., 2018; Trinugroho et al., 2018).

Very first rules under Basel accord were introduced by Basel Committee on banking supervision (BCBS) established by G10 in the year 1974. It had the purpose to guard banking system against crisis (Engelen, 2005; BIS, 2008; Yao et al., 2016). A milestone achievement of this accord was the establishment of minimum capital requirements focusing credit risk (Makwiramiti, 2008; Husodo and Wojtyla, 2018). Basel rules were supplemented with later accords that were issued in the year 1998 known as Basel I; in the year 2001 known as new capital accord and in the year 2004 known commonly as Basel II. Basel II introduced the pillars of supervisory review and market discipline. Lately, a further revision was also introduced in the year 2010 focusing ramifications of the financial crisis 2008. Basel accord serves as a re-engineering mechanism of global banking capital structures (Mboweni, 2004; AIF: Disclosure Subcommittee, 2004). Its implementation is required to be achieved through promulgating three pillars with the focus to rationalise risk appetite (Global Risk Regulator, 2005; Naghshpour and Iii, 2018).

Hanif et al. (2011) find that poor credit risk management (CRM) in banking sector is one of the causes for rising NPLs in Pakistani sector. Azam et al. (2016) and Messai and Gallali (2019) study factors in credit decision making and discover region, residence status, and length of banking relationship as primary factors that bankers consider while conducting CRM. Aretz and Pope (2013) suggest that credit risk, apart from factors within geographical boundaries of a country, is dependent on factors outside geographical boundaries of a country. Masood and Fry (2016) point that credit risk is one of the issues that need to be worked upon in the implementation of Basel accord in Pakistan.

State bank of Pakistan is the regulator of all banks in Pakistan (Shah, 2011). It guides banks for implementation of Basel accord in the country (Shah, 2011; State Bank of Pakistan, 2005). During the last few years diversity of Pakistani banking sector has increased (Shah, 2011). This diversity has added to the complexity of risks along with advancement of services. Keeping in view recent developments, this study explores implementation of Basel accord in Pakistani banks with the focus on their abilities to manage credit risk. Accordingly, hereunder are the objectives for the purpose of this study:

- How far Pakistani banks are successful in the implementation of Basel accord regulations in Pakistan?

This research question shall be further explored by finding answers of the following sub research questions:

- What is the primary area of risk management that has been focused by Pakistani banks while implementing Basel accord?
- What are the factors that need to be focused for implementation of Basel accord?

2 Literature review

State Bank of Pakistan is the regulatory authority of banking industry in Pakistan. Currently there are 31 banks functioning in Pakistan out of which 22 are private, 4 foreign and 5 belong to public sector. However, more than 65% of the total banking business is with six top banks namely National Bank Limited (NBL), Habib Bank Limited (HBL), Allied Bank Limited (ABL), United Bank Limited (UBL), MCB Bank Limited, and Bank Alfalah Limited (World Bank, 2017).

Banking sector in Pakistan has assets worth more than PKR 16000 billion and deposits over PKR 10,000 billion supported with more than 43 million bank accounts. Keeping in view 210 million population of Pakistan, these figures are not satisfactory (SBP, 2018). The factors of low penetration of banking include limited access to technology in rural areas and religion (Alam et al., 2011). Since the start of this decade technology has penetrated into remote areas that has led to an increase in banking footprint. SBP (2018) states that conditions have been improved by the end of year 2018 with inflation of around 3% and GDP growth of around 5% in June 2018. Despite all these positive signs SBP has suffocated prudential regulations for banks.

Risk taking is willingness of banks to accept increased chances of incurring losses in the hope of getting higher returns (Robertson, 2013; Buch et al., 2014). It is severely connected to the liquidity of financial institutions. The ability of a financial institution to take higher risk is greatly affected by the lack of access to external funds. Resultantly the bank seeks access to risk funds to meet its regulatory liquidity requirements, which further aggravates the situation (Borio and Zhu, 2012; Perhiar et al., 2020). In a study on Spanish banks Jiménez et al. (2013) point that stability of financial institutions is affected due to abnormal risk taking behaviour. This is because when the liquidity crunch arises it raises competition in the whole market that increases overall level of risk in interbank markets. Bolton et al. (2015) in their study argue that when risk taking reaches at an extended level it envelopes financial system in all aspects, which consequently affects performance of the banks if returns are not commensurate. Khan et al. (2017) argue that deposit insurance and deposit motives adversely affect market disciplines that also encourage banks to risk taking. Mollah et al. (2017) in their study point that shareholders are also a source of extensive risk taking because of their limited and residual liability that creates problem of moral hazard.

Higher risk taking is the primary reason of the financial crisis 2008. It initiated from USA due to divergent risk taking (Angeloni et al., 2015; Onour, 2015; Paligorova and Santos, 2017; Ashraf, 2017). A reason behind extensive risk taking was the level of competition in US local financial markets (Ashraf, 2017). Angeloni et al. (2015) explain

that excessive risk taking means excessive leverage, which is the aggravating factor in the financial crisis. In a study on UK, von Ehrlich and Radulescu (2017) also point excessive risk taking as a primary factor of financial crisis 2008.

2.1 Capital requirements

Basel Accord is a framework for stability provided by Basel Committee on Banking Supervision (BCBS). This has been developed over time from Basel I to Basel III (Hussain et al., 2012). It is a mechanism that ensures that financial institutions are not involved in excessive risk taking without having an appropriate amount of capital (Shah, 2011; Hussain et al., 2012; Messai and Gallali, 2019). It requires all banks to maintain atleast 8% required amount of capital against its risk weighted assets (Alam, 2013). Karim et al. (2014) in their study on 52 banks find that minimum capital requirements should be a required restraint to stop banks from excessive risk taking. They observe that minimum capital serves as a good restraint on the lending behaviour of active banks. Breach of minimum capital served as the primary reason causing two financial crises namely Asian crisis 1990 and financial crisis 2008 (Karim et al., 2014; Erwin et al., 2018; Kochadai et al., 2020).

In financial crisis 2008, the primary reason for financial institutions being unable to absorb losses was inadequate equity capital and liquidity (Olmo and Sanso-Navarro, 2018; Naghshpour and Iii, 2018). It resulted in inability of financial institutions to grow, which further hampered credit expansion and ultimately the economic development. Minimum capital requirements prevent financial institutions from failing. It ensures that the financial institutions keep on playing their developmental role in the economy. Cohen and Scatigna (2016) explain that the logic of minimum capital requirement is to ensure that the financial institution is setting aside amount of capital against each of its investment. Such amounts increase with the increase in risk an institution is facing. This ensures safety for the shareholders and depositors (Fatima, 2014; Blümke, 2020).

Examining minimum capital requirements of British financial institutions Bridges et al. (2014) find that it serves as buffer against losses. Its management can be used as a control factor of loan growth. Maji and De (2015) observe that minimum capital requirements gained popularity after the first Basel Accord 1988 with the purpose to enhance soundness of banks. Mili et al. (2017) report that bank lending without the requirement of minimum capital enforces country regulatory authorities to set other regulations for bank safety. Therefore following minimum capital requirements is good for the soundness of financial institution and financial system (Jabra et al., 2017; Hugonnier and Morellec, 2017). Barth et al. (2017) in their work on listed and non-listed banks find that banks cannot survive without adherence to minimum capital requirements.

2.2 Risk taking in comparison with regulatory capital

Borio and Zhu (2012) observe that minimum regulatory capital manages risk appetite of banks. It changes risk taking behaviour (Musa, 2012; Szarowska, 2018). Jiménez et al. (2013) observe that regulators used minimum capital requirements to control risk incentives in financial sector. Karim et al. (2014) find that minimum capital enables financial institutions to develop capital buffers against expected losses. Researchers have used minimum capital requirements as a parameter for analysis of financial soundness.

It is calculated by taking a ratio of bank's eligible capital against losses (BCBS, 2004; Fatima, 2014). Minimum capital requirement is not a single sided phenomenon, rather banks are advised to control their banking activities along with maintaining certain amounts and types of capital (Ashraf, 2017). Gersbach and Rochet (2017) and Hussain et al. (2018) in their works observe that minimum regulatory capital requirement although controls risk behaviour of the financial institutions but also reduce their liquidity. Similar observations were also made by Khan et al. (2017) and Hussain et al. (2017) that minimum capital requirements create liquidity problems along with solving risk problems.

Minimum capital requirement is in fact a cushion against failures (Maji and De, 2015). It is a cut-off point between liquidity, risk and capital (Kandrac and Schlusche, 2017; Blattner et al., 2019), which ultimately reduces systemic risk of an institution (Stulz, 2016; Bholat et al., 2018; Fonseca, 2019). Ashraf et al. (2016) in their study on Pakistani banking sector observe that all banks are maintaining adequate amounts of capital for risk taking activities that in some cases is even higher than the required level. Higher level of capital however creates cost of equity problems and provides safety cushion (Ashraf et al., 2016).

Minimum capital requirement is in fact a regulatory tool used by regulators to ensure quality and quantity of risk assets and liabilities (de Moraes et al., 2016; Ito, 2016). In some countries it has also served as a tool for controlling non-performing loans (Osei-Assibey and Asenso, 2015; Ito, 2016; Anastasiou et al., 2019). Bitar et al. (2016) in fact in their studies in MENA region also find it as a useful tool against unexpected losses.

2.3 Brief critical review of Basel I Accord

Ong (2004) in his research narrates deficiencies of the Basel Accord introduced in 1988 and required its revision. Revision need was also emphasised in BCBS (2001) where the increased risk management was recognised.

The deficiencies included:

- “One size fit all” to risk management (Ong, 2004).
- Arbitrage opportunities culminated by introduction of the asset securitisation vehicles (Ong, 2004).
- The 1988 accord was only credit risk sensitive (Hai et al., 2007).
- New financial products were not properly accounted for as compared to other products in the modern era (Makwiramiti, 2008).
- The derivative and securitisations based banking became more popular than traditional banking (Hai et al., 2007).
- Cumming and Nel (2005) indicate that even categorisation of risks in Basel Accord (1988) was not proper. Many differentiated categories were clubbed into one risk rating.
- Due to weak structure of risk parameters risk institutions started ‘cherry picking’ practices (Cumming and Nel, 2005).

- The promotion of cross boarder financial markets introduced diversified structure of risks for financial institutions (Hai et al., 2007).

2.4 *Brief critical review of Basel II Accord*

In order to make the Basel regulations more resilient towards systemic risks the assets of questionable quality have been proposed to be deducted directly from Tier I equity under Basel II. This activity has been supplemented by higher requirements of capital in Pakistani banking sector. This is based on the notion of equity being 2% of Risk Weighted Assets which becomes 1% under new standards (Folpmeres, 2010).

Developing countries have always been subject to attention (Masood and Fry, 2016; Becker and Linder, 2020). It is believed that revised IRB approaches and capital adequacy approaches will synchronise the lending across the globe without discrimination of developed and developing countries (Griffith-Jones and Spratt, 2001). However, Bailey (2011) states that it may cause capital eradication that will further cause international reconciliations more difficult. Dupuis (2006) and Bailey (2011) indicate that it will benefit mega banking structures that may also raise banking supervision problems.

2.5 *Brief review of the of Basel III Accord*

After the financial crisis of 2008 enhancements to the Basel II Accord were inevitable. This was accomplished by the issuance of a new document by the Basel committee titled “Strengthening the resilience of the banking sector and international framework for liquidity risk measurement, standards and monitoring” as a first document of Basel III series. Marko Folpmers (2010) presented the grouping of Basel III rules in the following four categories as explained in Table 1, its comparison with Basel I & II has been explained in Table 2.

Table 1 Overview of the new Basel III capital and liquidity rules for banks

<i>Capital rules-micro prudential</i>	<i>Capital rules-macro prudential</i>	<i>Liquidity ratios</i>	<i>Macroeconomic impact</i>
Own funds	Reduction of procyclicality	Liquidity coverage ratio	Short term (during implementation)
Regulatory capital	Measures against systemic risks	Net stable funding ratio	Long term (after implementation)
Leverage ratio			
Convertible capital			

2.6 *Basel accord in Pakistan*

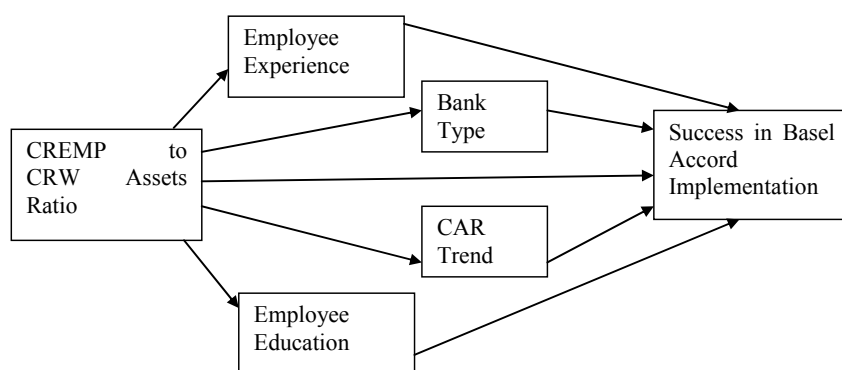
Even after a lapse of significant period of time none of the annual reports submitted by the banks sample depict that they have adopted advanced approaches of Basel Accord (Shah, 2011). This follows that Pakistani banks are not successful in implementing the Basel Accord as compared to other countries (Shah, 2011; Masood and Fry, 2016). Also as Shah (2011) and Masood and Fry (2016) point that the primary problems in the implementation of Basel accord are resourcing issues that extend to all risk management segments. Therefore based on the finding of Shah (2011) this research uses an inverse of

a ratio named “Credit Risk Management Employees to Credit Risk Weighted Assets Ratio” for the purpose of analysis. Based on the review and research objectives the conceptual framework of this research has been developed in Figure 1.

Table 2 Table of review of three Basel Accords

<i>Focus</i>	<i>Basel I</i>	<i>Basel II</i>	<i>Basel III</i>
Measures of risk	Single	Broad	Economy wide
Sensitivity of risk	Broad brush approach	Enhanced risk sensitive	Enhanced economy and sector sensitive
Credit risk mitigation	Limited recognition	Comprehensive recognition	Through the time mitigation of credit risk
Operational risk	Excluded	Included	Included
Flexibility	One fits for all approach	Menu approaches	Menu approaches with comprehensive approach
Supervisory review	Implicit	Explicit	Explicit with single view of economy and bank regulations
Market discipline	Not addressed	Addressed	Addressed
Incentives	Not addressed	Addressed and well defined	Well defined incentives of transition and outcome
Economic capital	Divergence	Convergence	Extended convergence based upon time based results

Figure 1 The conceptual framework



This lead to the following hypotheses:

H1: CREMP to CRWA ratio has a positive relationship with the implementation of Basel Accord implementation in Pakistan.

H2: Type of Bank mediates the relationship of CREMP to CRWA ratio with implementation of Basel Accord in Pakistan.

H3: CAR Trend mediates the relationship of CREMP to CRWA ratio with the implementation of Basel Accord in Pakistan.

H4: Employee experience mediates the relationship of CREMP to CRWA ratio with the implementation of Basel Accord in Pakistan.

H5: Employee education the relationship of CREMP to CRWA ratio with the implementation of Basel Accord in Pakistan.

3 Methodology

The ontological position in this research is to create a prediction using a proposed model of factors that affect Basel Accord implementation. To accomplish the objectives, this research uses a ratio that has been termed as credit risk weighted assets to credit risk employees ratio (CRWA to CREMP). Shah (2011) using data from the secondary and primary sources uses an inverse of this ratio. This research uses quantitative approach with multi-method, which is an extension of a situation where facts from multiple sources are incomplete and become a myth themselves; therefore it becomes very difficult to analyze different parts to look for any discrepancy (Jick, 1979; Mark et al., 1997; Bazeley, 2002). Primary data has been collected using a questionnaire as used by Masood and Fry (2016) using criteria of Shah (2011) and Masood and Fry (2016) on an extended sample; whereas the secondary data has been collected from various published annual statements of commercial banks operating in Pakistan. In order to test the hypotheses this research employs Chi-square test to measure association and multiple regressions has been used to test mediation.

3.1 Variables

The following are the variables used for the purpose of this study:

3.1.1 Employees working in credit risk management

This variable has been measured using acronym CREMP. Its values have been collected by asking the risk executives about the number of staff working in their jurisdiction for this function. This variable is based on primary data (Shah, 2011).

3.1.2 Risk weighted assets (Credits):

This variable has been measured using acronym CRWA. Its values have been collected from annually published financial statements of all banks in the sample. The financial statements have been obtained from websites of respective banks of our sample. This variable is based on secondary data (Shah, 2011).

3.1.3 CRWA to CREMP ratio

This ratio tells us how much human resources a bank is having for every Rs. 1 Billion of its Credit Risk Weighted Assets to have a holistic view of Credit Risk Assets data in terms of HR resource availability. This variable is based on primary and secondary data (Shah, 2011).

3.1.4 Ownership type of bank

For the purpose of this study banks have been categorised into three groups i.e., namely: Government owned banks, foreign banks and local banks with private ownership. Shah (2011) explains that “This classification helps us find out if there any difference in the implementation of Basel Accord in local and foreign banks and whether there is any difference in the availability of resources in foreign, local and government owned banks. This aspect also helps address the question raised in the international literature about the confrontation between the foreign and the local supervisors about the adoption of methodologies in case foreign bank that are in advanced stages of Basel Accord in home countries and in elementary stage in host country and vice versa.” This variable is based on secondary data.

3.1.5 CAR trend

For the purpose of this study CAR Trend for the last eight years of all banks has been used. This variable is based on secondary data.

3.1.6 Basel accord implementation

This variable has been assessed based on five questions the response against which was obtained on a five point likert scale starting from 1 = strongly disagree to 5 = strongly agree, 3 = neither agree nor disagree. The Cronbach alpha calculated for the scale is $\alpha = 0.82$, which indicates high reliability.

3.1.7 Employee education

Education of the employees has been examined in three categories. Employees with formal or no business education, employees with business education and employees with risk specialisation.

3.1.8 Employee experience

Employee experience has also been examined in three categories. Employees with experience of less than 2 years, employee with experience of 2–5 years, employees with experience of more than 5 years.

3.2 Study sample

The study collects data from 31 banks with multiple ownership structures and varying CAR Trend and CARs.

3.3 Respondents

The criteria for selection of respondents conform to Shah (2011) and Masood and Fry (2016) with the exception of number of respondents:

- Four questionnaires have been filled from the senior executives to see the extent of Basel Accord awareness at the high level of management.

- Two questionnaires have been filled from one executive of the risk management division to have a closer view of the Basel accord implementation in the respective bank.
- Four questionnaires have been filled by the Branch Manager of each respective bank to see the extent of Basel Accord awareness at the lower management levels.

Based on the above this research collects data that is fairly representative of all banking sector and also meets study purpose of analysing the extent of Basel accord Implementation in the Pakistani Banking Sector.

3.4 Questionnaire response

As the banking is sensitive sector therefore bankers are always hesitant to disclose information. Getting a questionnaire filled from a banker in Pakistan requires personal contacts and guarantees from the researcher about anonymity. Accordingly, to accomplish the objective 310 questionnaires have been distributed in top and lower management of banks. 73 Questionnaires have been filled on telephone interviews, 147 have been filled on emails and 33 have been filled personally. Therefore the response rate of respondents is 83.33% with the break-up reported in Table 3.

Table 3 Profile of the respondents (Average figures)

<i>Bank type</i>	<i>Employees in credit risk</i>	<i>Experience less than 2 years</i>	<i>Experience 2 to 5 years</i>	<i>Experience 5 Years and above</i>	<i>Formal Education/ No business education</i>	<i>Business education</i>	<i>Risk specialisation</i>
State owned	27	14	10	3	17	8	2
Private local	52	8	20	24	9	33	10
Private foreign	18	3	10	5	1	12	5

4 Results

The results have been reported in Tables 4–8.

Table 4 Number of credit risk employees in various types of banks

<i>Type of banks</i>	<i>Number of employees in credit risk management</i>					
	<i>2–5</i>	<i>6–10</i>	<i>11–15</i>	<i>15–20</i>	<i>21–25</i>	<i>25 and above</i>
State owned	0	0	0	1	2	2
Private local	1	1	2	4	4	10
Private foreign	0	0	1	3	0	0

Table 5 Chi-square table for association between bank type and credit risk employees ratio to credit risk weighted asset

<i>Bank type</i>	<i>Credit risk asset to credit risk employees ratio</i>			<i>Explanation</i>
	<i>Declining</i>	<i>Improving</i>	<i>Constant</i>	
Public Banks	3.124 (0.027)	0.431 (0.122)	0.137 (0.167)	There does exist association between CRWA to CREMP ratio. The results show that Public banks are with declining CRWA to CREMP ratio. Means they have less employees to handle credit risk department
Private Banks Local	0.927 (0.120)	4.113 (0.041)	5.438 (0.029)	
Private Banks Foreign	0.111 (0.131)	0.288 (0.149)	1.139 (0.041)	

Table 6 Chi-square table for association between CAR trend and credit risk employees ratio to credit risk weighted asset

<i>Car trend</i>	<i>Credit Risk Asset to Credit Risk Employees Ratio</i>			<i>Explanation</i>
	<i>Declining</i>	<i>Improving</i>	<i>Constant</i>	
Declining	14.129 (0.000)	3.917 (0.039)	5.222 (0.027)	The results suggest that banks with declining CAR trend also have declining CRWA to CRMP ratio
Improving	0.514 (0.235)	3.222 (0.025)	0.011 (0.545)	
Constant	0.425 (0.122)	1.435 (0.067)	2.198 (0.051)	

Table 7 Chi-square table for association between credit risk employee education and CRWA to CREMP ratio

<i>Education</i>	<i>Credit risk asset to credit risk employees ratio</i>			<i>Explanation</i>
	<i>Declining</i>	<i>Improving</i>	<i>Constant</i>	
Formal education/ No business education	9.376 (0.002)	2.122 (0.123)	0.256 (0.271)	The results suggests more employees with business and risk education the lesser the credit risk
Business education	0.735 (0.127)	3.122 (0.041)	0.211 (0.315)	
Risk specialisation	0.111 (0.311)	2.111 (0.035)	0.315 (0.129)	

4.1 Explanation

Regression analysis has been used to find out mediating effects of CAR Trend, bank Type, employee education and employee experience on the relationship between CRWA to CREMP and Basel Accord implementation. In Figures 2 and 4 the results suggest that bank type, CAR trend, employee education, employee experience and CRWA to CREMP ratio all have significant relationship with Basel Accord implementation, which meets the

criteria to examine mediation. Figure 3 shows that bank type and CAR trend mediate the relationship between CRWA to CREMP ratio and Basel Accord implementation. Whereas Figure 5 suggests that only employee experience mediates the relationship between CRWA to CREMP ratio and Basel Accord implementation. Based on results the decision on hypotheses have been reported in Table 9.

Table 8 Chi-square table credit risk employee experience to CRW_A ratio

Experience	Credit risk asset to credit risk employees ratio			Explanation
	Declining	Improving	Constant	
Experience of less than 2 years	3.375 (0.038)	0.414 (0.317)	0.331 (0.297)	The results suggest that the higher the experience of employees the better the Credit Risk handling
Experience 2 to 5 years	2.111 (0.047)	0.217 (0.291)	0.285 (0.197)	
Experience 5 years and above	0.091 (0.312)	5.311 (0.039)	1.021 (0.098)	

Figure 2 Regression Analysis results between CRWA to CREMP, CAR Trend, Bank Type and Basel Accord Implementation using regression model

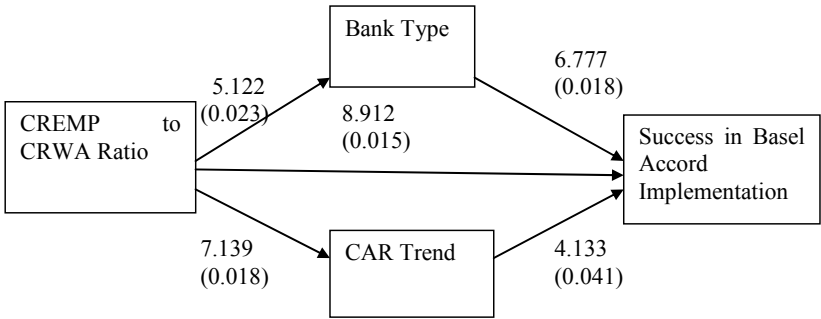


Figure 3 Mediation Results of relationship in Figure 2

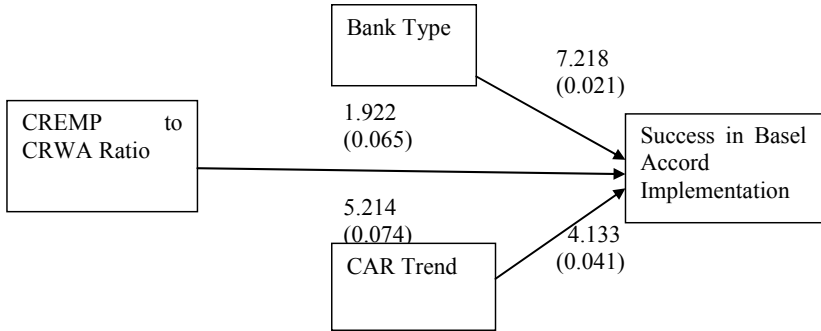


Figure 4 Regression Analysis results between CREMP to CREMP CAR Trend, Employee Experience, Employee Education and Basel Accord Implementation using regression model

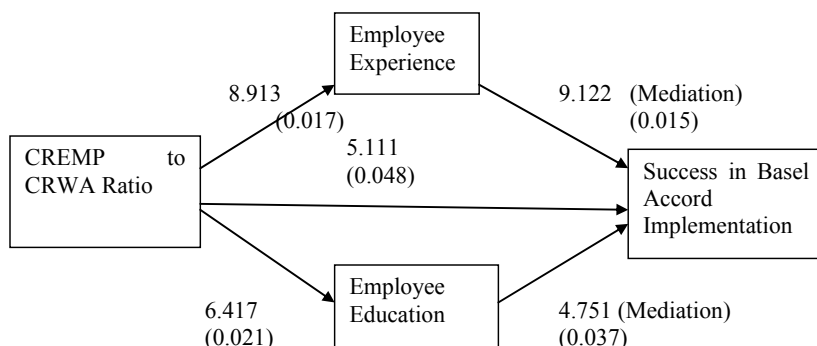


Figure 5 Mediation results of relationship in Figure 4

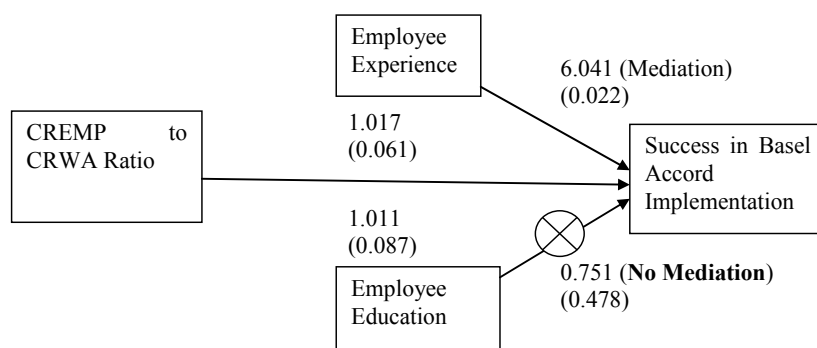


Table 9 Summary results of hypotheses

	<i>Hypotheses</i>	<i>Results</i>
<i>H1</i>	CREMP to CRWA ratio has a positive relationship with the implementation of Basel Accord implementation in Pakistan.	Failed to Reject Figure 2
<i>H2</i>	Type of Bank mediates the relationship of CREMP to CRWA ratio with implementation of Basel Accord in Pakistan.	Failed to Reject Figure 3
<i>H3</i>	CAR Trend mediates the relationship of CREMP to CRWA ratio with the implementation of Basel Accord in Pakistan.	Failed to Reject Figure 3
<i>H4</i>	Employee experience mediates the relationship of CREMP to CRWA ratio with the implementation of Basel Accord in Pakistan.	Failed to Reject Figure 5
<i>H5</i>	Employee education the relationship of CREMP to CRWA ratio with the implementation of Basel Accord in Pakistan.	Reject Figure 5

5 Conclusion

Results suggest that banks operating in Pakistan do have human resource problems that affect their CRM and ultimately the capital adequacy ratio. The results of cross tabulation

and mediation analysis suggest that ownership type has affected the inclination to Basel Accord implementation in Pakistan adversely. Further, government sector banks suffer from the lower CRWA to CREMP ratio leading to lesser inclination towards the Basel Accord implementation. It can be further concluded that the banks operating in private sector have better resources for management of credit risk as compared to their counterparts owned by governments.

The results of this study augment the findings of Masood and Fry (2016) where they suggest that Pakistani banking sector need to improve their capacities to implement Basel Accord both in terms of numbers and qualities as well. This research also supports the findings of Masood and Fry (2016) that there is a difference in the implementation of Basel Accord in public and private sector. This study further explains the reason of failure to implement the Basel Accord that is lack of experience in bank employees.

This study suffers from the limitation that it has focused Pakistani conventional banks only. Further, the CRWA to CREMP ratio can be extended to include market, operational and total risk employees ratios to their respective risk weighted assets. The minimum benchmarks of such ratios may also be calculated across the globe for all kinds of financial institutions as well. Further the impact of relevant HR costs may also be taken into account. Similar ratios may be applied historically before within and after the periods of crisis.

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