Human Capital and Banking Performance in Pakistan: The Moderating Role of Income Diversification

Ameenullah Aman[1], Umair Wahab[2]

[1,2]Associate Professor, Faculty of Management Sciences, Shaheed Zulfikar Ali Bhutto Institute of Science and Technology, Karachi Pakistan, Email: ameenullahaman.s@gmail.com, umair.wahab@gmail.com

Abstract

The purpose of the paper is to study the impact of human capital on Islamic and conventional banks performance in Pakistan. The study uses the sample of 10 Islamic and conventional banks and panel data for the years 2011-2020. The hypothesis are tested through pooled OlS test and the choice between fixed effect and pool OLS estimation is based on results of Breusch and Pagan Lagrangian multiplier test and Hausman test. The study examined that human capital significantly have negative impact on bank performance. While income diversification has also significantly negative effect on bank performance. Additionally, interaction variable has significant and negative effect on bank performance, conclude that income diversification has an opposite effect on human capital and bank performance relation. For control variables asset quality liquidity, bank capitalization has significantly negative effected bank performance. The study serve as a helping hand for the policy makers and practitioners regulating the banking industry in Pakistan as it will give them an in-depth insight and understanding of the moderating effect of income diversification on human capital as well as individual impact of human capital, bank capitalization, asset quality, and liquidity and income diversification on the performance of Islamic and conventional banking system of Pakistan.

Introduction

For sustained competitive advantage and long-term survival, businesses rely on both tangible and intangible assets. However, in the modern era of information and knowledge-based economies, intangible assets, in particular, intellectual capital (IC), are rapidly taking the place of physical capital as essential components of production and as variables that support sustainable long-term profitability (Drucker, 1993; Clarke and Gholamshahi, 2018). This is true for businesses that rely heavily on knowledge, especially banks, which are known for their high levels of innovation and low physical capital requirements. An organisation can benefit from all three IC aspects (human capital, structural capital, and customer capital). However, human capital is seen as being the most crucial for service sectors since it has a long-term impact on a variety of organisational outcomes in addition to having a short-term impact on the quality of services (Aryee et al., 2016; Seleim and Bontis, 2013; Mahoney and Kor, 2015). In addition, some academics assert that human capital is the main element of IC because it facilitates the creation and application of the other IC elements (Kim et al., 2012; Wang and Chang, 2005; Feraru and Mironescu, 2012). Because it has both a direct and indirect impact on the performance of the firm, human capital is therefore at the core of successful businesses. The resource-based view (RBV), which attributes superior performance and a competitive advantage to a firm's specific stock of precious, uncommon, inimitable, and non-substitutable resources, lends credence to this argument (Barney, 1991; Prahalad and Hamel,

1990). Accordingly, variations in human capital management techniques, such as hiring, deploying, and training, can account for the variance in performance between enterprises within and between industries. From a similar vantage point, studies have also demonstrated a connection between human capital and the achievement of national objectives and a country's riches, further illuminating the reasons why nations spend vast sums of money on healthcare and education to promote socioeconomic development (Gennaioli et al., 2012; Stewart, 1997). The relationship between human capital and performance has been extensively studied over time, however the results of the literature that is now available are conflicting. One line of research (Firer and Williams, 2003; Chowdhury et al., 2019) points to a direct link that could be either favourable or detrimental. The other, however, asserts a secondary causality (Bontis et al., 2000; Scafarto et al., 2016; Wang and Chang, 2005). However, many research claim there is no association (Razafindrambinina and Anggreni, 2017; Soewarno and Tjahjadi, 2020). These results imply the presence of auxiliary variables that constrain the link between performance and human capital. While some academics contend that organisations develop competitive advantage and economic rent by leveraging their firm-specific resources, such as human capital, through diversification, the RBV theory ties competitive advantage to firms' stock of human capital (Merino et al., 2014; Chang and Wang, 2007; Neffke and Henning, 2013). Penrose (1959) also suggested that businesses vary across business divisions and industries to take use of alternate applications for their core capabilities and idle resources. In the same vein of research, Tidd and Taurins (1999) came to the conclusion that diversification both builds on and leverages new competencies. Accordingly, there appears to be an essential but unclear connection between human capital, diversification, and performance based on empirical research and theories of human capital. As a result, by examining whether income diversity moderates the relationship between human capital and bank performance within Pakistani banking industry, this study adds to the body of literature. In addition, the study looks into these relationships independently for both of Pakistan's parallel banking systems—Islamic and conventional. Two things inspired this investigation. First, the decline in interest-based income brought on by financial deregulation and financial liberalisation. Second, as a defence against the decline in interest income, banks are steadily providing non-traditional banking services. This research will make it possible for academics, professionals, and policymakers to more accurately and directly comprehend how income diversification affects the relationship between human capital and bank performance. Additionally, the findings will provide greater context for how banks might use non-traditional operations to leverage their human resources for competitive advantage and increased profitability. There are five sections in this essay. The research problem is stated in the introduction, which is the first section. The definition and empirical connection between the study constructs of human capital, income diversification, and bank performance are examined in the second section, which also focuses on the literature review. Hypotheses are also created. The methodology is presented in the third section together with the data, sample, measurements of the variables, and research model. The fourth section contains a presentation of the study's findings. The conclusion, suggestions for practitioners and policymakers, a discussion of the study's limitations, and potential directions for future research are all included in section five.

Review of the Related Literature

Since human resources are responsible for creating and delivering the majority of the output of service organisations like banks and professional businesses, human capital is their most valuable asset. One employee may provide services of varying quality from another (Namasivayam and Denizci, 2006). While Maditinos et al. (2011) define human capital as the "brainpower of the employee inside the enterprise," Bontis et al. (2000) contend that human capital is an organization's pool of knowledge owned by its personnel. In a broader sense, all of these definitions imply that

human capital refers to psychological and social notions like aptitude, attitudes, and motivation as well as learning-related concepts like education, training, job experience, competences, and skills. Existing research demonstrates that human capital is essential for a firm's innovation and customer happiness (Bornay-Barrachina et al., 2017; Aryee et al., 2016). While other studies have also connected an organization's human capital investment to enhancing company value and profitability (Hejazi et al., 2016; Li et al., 2014). As a result, an organization's employee spending should be seen as an investment rather than a cost. According to Bontis et al. (2000) and Scafarto et al. (2016), spending on employee education and training increases human capital rather than physical or financial capital, which boosts employee productivity and enhances organisational performance. Additionally, businesses with high-quality human resources are likely to have a competitive advantage in the market since a skilled workforce is more likely to create novel and ground-breaking products (Delery and Roumpi, 2017). Given the value of human capital, businesses spend a significant amount of money on personnel programmes including recruitment, training, and development to provide their workforce the skills and talents necessary for a competitive edge and superior performance. Studies at the macro level also reveal that human capital is responsible for more than 75 percent of the wealth in industrialised countries, illustrating its importance for both economic growth and sustainable development (Becker, 2009; Pelinescu 2015). According to the same line of thinking, numerous research have demonstrated that human capital promotes technological advances and their spread, which in turn boosts total factor productivity and economic growth (Akhvlediani and Cieslik, 2019; Mannasoo, Hein, and Ruubel, 2018). The empirical literature reveals conflicting results, contradicting the claims of the RBV theory that a firm's competitive advantage and performance are attributed to its stock of human capital (Firer and Williams, 2003; Wang and Chang, 2005; Razafindrambinina and Anggreni, 2017; Soewarno and Tjahjadi, 2020). Therefore, current research is looking into variables that either mediate or moderate the link. Similar to this, experts in organisational resource management assert that while firm-specific resources like human capital are non-tradeable, businesses can use them to diversify when they have excess amounts (Chiambaretto and Wassmer, 2019; Fisch and Schmeisser, 2020; Chung et al., 2019). Similar to this, other scholars have noted that businesses that diversify build new core competences and capacities to enhance their current operations (Lin et al., 2020a, b). Additionally, studies have shown that companies prefer to expand into businesses and industries that need a similar level of human capital to their current operation, allowing them to use their extra managerial capital (Fitjar and Timmermans, 2017; Lee et al., 2018; Neffke and Henning, 2013). According to a study by Chen et al. (2018), businesses that have more substantial human capital and employees who have stronger ex ante career mobility are more likely to be bought. While Lee et al. (2018) found that the complementarities in human capital drove the income diversification in mergers and acquisitions among East African banks and improved post-merger financial performance. Mengistu (2009) discovered a similar relationship between human capital and vertical and horizontal export diversification. These studies generally stress the fact that diversity can be used to harness knowledge-based resources for financial gain. Furthermore, research indicates that a corporation performs better when its resources are matched with market prospects (Carnes et al., 2017; Feng et al., 2017). Different types of diversification have been advocated by academics (Ansoff, 1965; Ye et al., 2018), but in the context of the banking industry, income (revenue) diversification is the most crucial because banks are constrained by strict regulations and supervisory oversight when it comes to diversification. By investing in non-core (secondary) activities, you can increase the amount of revenue streams that your business receives. Income diversification for the banking industry refers to investing in non-traditional banking activities that produce non-interest income, such as securities trading, property management, venture capital, and underwriting. Invoking Markowitz's contemporary portfolio theory from 1952, income diversification is a useful tactic for controlling credit risks and securing income.

Furthermore, research has demonstrated that income diversification is linked to better bank performance (Duho et al., 2019; Chiorazzo et al., 2008), increased bank efficiency (Nguyen, 2018), increased bank market power (Lin et al., 2020a, b), and reduced interest margins (Trinugroho et al., 2018). Additionally, synergies and economies of scale from joint production in the delivery of linked financial services are expected to be advantageous to banks. According to theoretical RBV and modern portfolio theories, a bank's competitive advantage and performance are based on its human capital holdings and use of income diversity. There aren't nearly enough empirical research looking into the connection, though. The majority of earlier research concentrated on the direct impact of human capital on bank performance, ignoring the possibility that income diversity might attenuate the link. The relationship between human capital and bank performance is expected to be moderated in a number of ways by income diversification. First, by taking part in non-traditional operations, banks are more likely to allocate more funds into providing their staff with the necessary skills to handle the new business, increasing the value of human capital and, ultimately, performance. Again, using connected financial services gives managers the opportunity to learn how to make complex decisions in a challenging and fascinating way. Second, income diversification creates extra cash that can be used to boost the present stock of innovation and human capital, ultimately enhancing bank performance. Third, diversifying into non-lending operations gives banks a chance to use their extra human capital due to the apparent drop in lending activities, suggesting that income diversifications enable the best possible utilisation of human capital. The synergies and economies that result from related diversification, such as cross-selling and cross-subsidization, are also enjoyed by banks. This led to the following research hypotheses.

H1. The performance of banks is positively and significantly impacted by human capital.
H2. The performance of banks is positively and significantly impacted by income diversification.
H3: A bank's performance is considerably moderated by income diversification in its interaction with human capital.

Data and Methods

Target population for the current research is Pakistani banking sector. Islamic as well as conventional banks both are targeted for collection of data over the period 2011-2020.

S No.	Name of Banks
1	Meezan Bank Limited.
2	BankIslami Pakistan Limited.
3	Faysal Bank Limited.
4	Dubai Islamic Bank Pakistan Limited.
5	Allied Bank Limited.
6	JS Bank Limited.
7	Habib Bank Limited.
8	Silk Bank Limited.
9	Summit Bank Limited.
10	United Bank Limited.

Sample Size for current research to explore the impact of human capitalization on Pakistani bank performance is 10. The data source for this is the website of State Bank of Pakistan. Financial statements of banks and data will be collected from the following website of state bank of Pakistan. Following is the statistical H2O model developed for the current research.

$$BP = \alpha_t + \beta_1(HC)_t + \beta_2(BC)_t + \beta_3(AQ)_t + \beta_4(L)_t + \beta_5(ID)_t + \beta_5(HCXID)_t + \beta_5(DV)_t + \varepsilon_t$$

In the above-mentioned model equation, BP is the bank performance which is the dependent variable which will be calculated using dependent variables. HC is Human capital, BC is bank capitalization, AQ is Asset quality, L is liquidity and ID is income diversification which is the moderating variable and HCXID represent the moderating effect of income diversification on human capital. Bank performance is a measure of its resources used to achieve company objectives. It is measured using ROA and ROE (Duho et al, 2019). Human capital is an intangible asset that can be assessed based on the experiences and skills of employees working in a bank or any company.Bank capitalization is the difference between assets and liabilities of a bank is bank capitalization. It is measured as the ratio of equity to total assets. Asset quality is the measure of the market price of its loan or lease to any other party. It is measured as the ratio of non-performing loans (NPLs) to gross loans and advances (Duho et al, 2019). Liquidity is referred to as the tendency of an asset to be easily converted into cash. It is measured as the ratio of total loans and advances to total assets, which is an indicator of the percentage of bank assets tied up in loans and other advances (Duho et al, 2019). Income diversification is referred to as the sources of income or the income sharing between different sources of banks.

Data Analysis

Table 1. Descriptive Statistics of Study Variables Over 2011–2020

Variables	Obs	Mean	Std.Dev.	Min	Max
Bank Performance	100	.7613	1.542252	-7.63	9.06
Human capital	100	-5.8592	4.59833	-23.2	25.94
Income diversification	100	-10.137	15.2335	-99.33	32.12
Liquidity	100	.9201	.0238045	.85	.97
Asset quality	100	10.1512	7.14899	1.74	43.57
Capitalization	100	.07893	.0878385	.01	.81
interaction var	100	76.2545	157.5646	-227.73	912.84

Our study performs a brief descriptive analysis of banking industry in our selected sample banks. The summary descriptive statistics of the research variables are presented in table 1 above. Bank performance (ROA) has a mean of 0.7613, standard deviation 1.542252 and minimum and maximum values are -7.63 and 9.06 respectively. Similarly, human captial has a mean value of -5.8592, standard deviation 4.59833 and minimum and maximum values are -23.2 and 25.94 respectively. Likewise, Similarly, income diversification has a mean value of -10.137, standard deviation 15.2335 and minimum and maximum values are -99.33 and 32.12 respectively. Liquidity has a mean value of -.9201, standard deviation 0.238045 and minimum value .85 and maximum values .97. Asset quality has a mean value of 10.1512, standard deviation 7.14899 and minimum value 1.74 and maximum values 43.57. Bank capitalization has a mean value of .07893, standard deviation 0.78385 and minimum value .01 and maximum values .81. Lastly, interaction variable has a mean value of 76.2545, standard deviation shows 157.5646 and minimum value -227.73 and maximum values 912.84. Correlation analysis has been performed in order to evaluate whether multicollinearity exist between our quantitative variables or not. If correlation value is more than 0.90 accordance with Hair et al. (2010), this means variables have strong relationship with each other, whereas if the value is less than 0.90, this shows variables are hardly related with each other.

Since our result in table 2 value are less than threshold level 0.90, Hence, our model is free from any significant issue of multicollinearity.

Table 2. Correlation Matrix of Explanatory Variables

Heteroskedasticity refer to the variance of error term in regression model in an independent variable. If it is in the data, the variance differs across the value of the variables and contravene the results. This will make the OLS calculations un-reliable. It is therefore important to check the heteroscedasticity in the data and apply test to remove its presence if found. Different tests help to found heteroscedasticities in the model; in our model we have performed Modified Wald test for groupwise heteroskedasticity in fixed effect regression model. The null hypothesis said that the data is homoscedasticity whereas alternate hypothesis said that there is an issue of heteroskedasticity. If the test value is greater than 0.05 that means null hypothesis is accepted but if the value is less than 0.05 that mean alternate hypothesis is accepted. In our model there is no issue of heteroskedasticity as the p-value of less than 0.05 which is 0.000. So, we can say that there is no issue of heteroskedasticity detect in our model.

Further, autocorrelation occur if two or more error term correlate with each other. Autocorrelation alludes to the degree of relationship between the values of the same variables over different observations within the data. If the model is wrongly specified, autocorrelation

Variables	Human capital	Income diversification	Liquidity	Asset quality	Capitalization	interaction var
Human capital	1.000					
Income diversification	0.2431	1.000				
Liquidity	0.0848	-0.0356	1.000			
Asset quality	0.1336	0.2857	0.2050	1.000		
Capitalization	-0.0892	-0.0453	-0.1611	-02135	1.000	
interaction var	-0.5594	-0.8796	0.1046	0.2551	0.0139	1.000

of the regression residuals occurs in regression model. To detect the issue to autocorrelation Wooldridge test for autocorrelation test used. The null hypothesis of the test is there is no auto correlation issue in the model whereas the alternate hypothesis of the test is there is an issue of autocorrelation found in the data. If the f-value is greater than 0.05 than the null hypothesis is accepted whereas if the f-value is less than 0.05, the alternate hypothesis is accepted and null hypothesis is rejected. We applied Wooldridge test for autocorrelation in our panel data to find out the issue of autocorrelation in our model. The results f-value is 0.0604 which is greater than 0.05. this means null hypothesis is accepted. So, we can say that there is the issue of autocorrelation detected in our model. Robust standard errors are used to handle heteroskedasticity and autocorrelation issues. Reed and Ye (2011) conclude that robust panel model is preferable to avoid the issue of autocorrelation from the model. In addition we applied Breusch and Pagan Lagrangian multiplier test to decide in between pooled OLS and random effect model. The null hypothesis of test is pooled OLS better for our model and the alternate hypothesis is random effect is better for our model. If the p-value is greater than 0.05 we accept null hypothesis but if it is less than 0.05 alternated hypothesis is accepted. Our p-value of Breusch and Pagan Lagrangian multiplier test is 0.0852 which is greater than 0.05 so we accept null hypothesis which said pooled OLS is better for our model. We further applied Hausman test to confirm which test is better for our model in between random effect and fixed effect

test. The null hypothesis of Hausman test says random effect is better for our model whereas, alternative hypothesis says fixed effect is better for our model. If the p-value is greater than 0.05 we accept null hypothesis but if the value is less than 0.05, we accept alternate hypothesis and reject null hypothesis. Our Hausman test p-value is less than 0.05 which is 0.0040 which means fixed effect is better for our model. Lastly, fixed effect test was performed after Hausman test to decide in between pooled OLS and fixed effect test. The null hypothesis of fixed effect is fixed effect model is better whereas the alternate hypothesis is pooled OLS is better for the model. If the p-value is greater than 0.05 we accept null hypothesis but if the p-value is less than 0.05 so we reject null hypothesis and alternate accepted. Our results F-value of fixed effect test show the p-value 0.0000 which is less than 0.05, that mean we reject null hypothesis and alternate accepted. Pool OLS is better for our model. Robust test is perform to eliminate the issue of multicollinearity, heteroskedasticity and autocorrelation if found. We performed regression analysis to test the impact of human capital on Islamic and conventional banks performance in Pakistan. Results of hypothesis test are shown in Table 3 as follows.

Table 3 Robustness Results

Bank Performance	Coef.	Robust Std. Err.	z	P>|z|
Human capital	-.0904647	.0411402	-2.20	0.028
Income diversification	-.0349124	.0142218	-2.45	0.014
Liquidity	-12.84092	5.320221	-2.41	0.016
Asset quality	- .140826	.0331812	-4.24	0.000
Capitalization	-1.191927	.483612	-2.46	0.0014
Interaction var	-.0057488	.0018594	-3.09	0.002
Dummy var	-.5402709	.4025186	-1.34	0.180
_cons	13.87035	5.03596	2.75	0.006

Number of obs   =   100
Number of groups   =   10
R-sq: overall = 0.5359

Column 1 reported the regression results of bank performance, moderating effect of income diversification on human capital and control variables (liquidity, asset quality, bank capitalization), we also included dummy variable to check whether results are same for both Islamic bank and conventional bank or not. Second, third and fourth column reported the results of coefficients, robust standard error, z and p-value respectively. However, results of robust regression of Islamic and conventional banks in table 3 shows that Bank performance have significantly negative effect with human capital as p−value 0.028 is less than 0.05 therefore we reject Ho which said human capital has a positive and significant effect on bank performance our results are consistence with studied by Scafarto (2016) suggested that human capital and bank performance has indirect relationship. It means well organized utilization of human capital will negatively impact bank performance. Similarly, income diversification shows significantly negative effect on bank performance as its p-value is also less than 0.05 which is 0.014 but coefficient value is -0.349, therefore Ho rejected which said income diversification has positive and significant effect on bank performance. The results are consistent with (Stiroh and Rumble, 2006; Berger et al., 2010) results. Likewise, studied results shows that all control variables (bank capitalization, liquidity, asset quality) also have the significantly negative effect on bank performance as their p-values are less than 0.05 which are 0.0014, 0.016, 0.000 respectively but their coefficient values are -1.191, -12.840, -.1408 respectively therefore our

null hypothesis of all control variables are rejected and alternate hypothesis accepted. Secondly, moderating variable p-value is less than 0.05 which is 0.002 which means that income diversification moderate human capital, this shows that moderating variable plays the interacting role. If moderating variable is included the impact of human capital on bank performance increases. We include dummy variable in the model. Dummy variable has value as 1 it means a sample bank belongs to an Islamic banking group, and 0 value means a bank belongs to conventional banks group. The results in table 3 shows that probability value of dummy variable is 0.180 which is greater than 0.05, it means the result is insignificant. Base on insignificant result we determine that result of both Islamic banks and conventional banks are same.

Table 4 Hypothesis assessment summary:

Alternate Hypothesis (H1)	Coefficient	Sig-value	Accept/Reject
Human capital has a negative effect on bank performance	-.0904647	0.028	Accepted
Income diversification has a negative effect on bank performance	-.0349124	0.014	Accepted
Asset Quality has a negative effect on bank performance	-12.84092	0.016	Accepted
Asset Quality has a positive and significant effect on bank performance	- .140826	0.000	Accepted
Bank Capitalization has a negative effect on bank performance	-1.191927	0.0014	Accepted

Conclusion & Recommendations

This is the last chapter of study at hand which is to investigate the impact of Human Capital on Islamic and Conventional Bank Performance in Pakistan. In this chapter the topic is introduced by stating the summary of findings with conclusion and policies implication and lastly, recommendation for future research will be stated Financial deregulation and liberalization have converted the main traditional banking business system to hard competition and reduce interest income encouraging bank to invest into non-traditional activities to recover their lost. In developing countries, operational activities are not very competent hence they are being derived by external market forces towards diversification. Being an intangible asset human capital have an important value and effect on performance of the firms. In banking industry, finance is being made to enhance the quality of human capital as it helps to achieve goals of the bank on big level. Pakistani banking sector is expanding and has become an established industry where the role and importance of human capital cannot be denied. This study takes upon the task of filling this research gap in Pakistani by exploring the impact of human capital on bank performance in conventional and Islamic banking system with income diversification as intermediary. The study objective is to investigate the moderating effect of income diversification between human capital and performance of the Islamic and conventional banks operating in Pakistan as well as individual impact of human capital, bank capitalization, asset quality, and liquidity and income diversification on the performance of Islamic and conventional banking system of Pakistan. Inductive approach used by collect quantitative panel data of 10 Islamic and conventional banks worked in Pakistan over the period 2011-2020. To test the study hypothesis, the study used random effect test estimation based on the Hausman test. The findings disclosed that human capital had a negative effect on bank performance. On the other hand, income diversification had also a significantly negative effect on bank performance. Therefore, study concluded that focused banks are high

profitable than diversified banks. Finally, study also shows that income diversification significantly had negative moderating effect on the relation between human capital and bank performance. This means support intellectual capital through non-traditional banking activities less the impact of human capital on bank performance. On practical side, this study is also going to help the managers to focuses the human capital and its negative impact on bank performance. As study noted that human capital had a negative impact on bank performance, which should be the concern for governments and banks to make additional investments policies in human capital development. Similarly, study also serve as a helping hand for the policy makers and practitioners regulating the banking industry in Pakistan as it will give them an in-depth insight and understanding of the moderating effect of income diversification on human capital as well as individual impact of human capital, bank capitalization, asset quality, and liquidity and income diversification on the performance of Islamic and conventional banking system of Pakistan. Along with that the results of this study would serve as a literary support to regulatory bodies to make future policies and how they can further imply income diversification strategies to enhance the relationship of human capital and bank performance in Pakistan. Despite all efforts no research is free of limitations that can be discoursed in future studies. This study measures the variable human capital as HEC, directed by Pulic's VIAC^{TM}, which only allows the use of quantitative measures of human capital that is why study relied on secondary data whereas future studies can be conducted incorporating primary research to attain specific results. Second, Time constraints were present while conducting the research therefore the study was based on selected number of Islamic and conventional banks operating in Pakistan, future studies can involve further banks to expand the findings. Lastly, additional variable can be taken to expand the findings of the study.

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