Research Article

Impact of Bank-Specific Variables on Financial Performance of Joint Venture Banks in Nepal

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ABSTRACT

Banks play an important role not only in the growth of the financial system but also in the development of the overall economy of a nation. Therefore, the determinants of bank performance have attracted the interest of academic research, bank management, and financial markets as well as of bank regulatory bodies. This paper examines the impact of bank-specific variables on the financial performance of joint venture banks in Nepal. The data are collected from the supervision report of Nepal Rastra Bank and annual reports of the sample banks for 10 years from the fiscal year 2009/10 to 2018/19. Based on the results of the Breusch-Pagan LM test and Hausman Test, fixed effects regression models are applied to examine the effects of bank-specific variables on the financial performance of Nepalese joint venture banks. The result shows that there is a significant positive impact of size and employee expenses on the performance of banks measured in terms of return on assets, return on equity and net interest margin. Management efficiency has also a positive impact on the performance of banks but it is significant only on net interest margin. Similarly, there is a significant negative impact of liquidity on return on equity and net interest margin and a significant negative impact of operating expenses on the net interest margin of the banks.

Keywords: Capital adequacy; credit risk; efficiency; financial performance; liquidity; management

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INTRODUCTION

The banking sector has well-recognized worldwide in its role in the major transformations in the economy in many ways (Athanasoglou et al., 2008). Specifically, the banking sector acts as the lifeblood of modern trade and economic development. Commercial banks play a major role in the economy through financial intermediation that performs both a brokerage and a risk transformation function (Hara, 1983). Commercial banks are financial intermediaries that mobilize savings from surplus economic units to deficit economic units. How well banks perform this intermediary function has a direct linkage with their profitability and economic health of a nation. Research studies reveal that commercial banks play a very crucial role in the allocation of economic resources of countries by helping to channel funds from depositors to investors in a continuous manner (Ongore & Kusa, 2013). After the liberalization in the mid-1980s, the government of Nepal permitted the opening of commercial banks in a joint venture with foreign banks. Since then, the Nepalese financial system has undergone rapid structural changes, with a large number of financial institutions expose and display of financial products and services (Baral, 2005). The financial performance of any business organization is normally evaluated by analyzing its profitability.

The concept of profitability is very important both for the non-financial institutions as well as financial institutions, and commercial banks are considered to be the major constituents of the financial institutions. The success and growth of commercial banks are mainly dependent on the competitive marketing strategy that their marketing department adopts to help them compete with others in the market (Swarnapali, 2014). The profitability of banks has relationships with the growth and development of an economy (Wainaina, 2013). This concern is closely related to the significant impact of the profitability of the banks on the potential growth of the economy of the country. This has resulted in significant changes in the banking environment in terms of operations to improve their financial performance (Hussain & Bhatti, 2010).

The performance of commercial banks can be affected by internal and external factors (Hassan Al-Tamimi, 2010). These factors can be classified into bank-specific (internal) and macroeconomic variables. The internal factors are individual bank characteristics that affect the bank's performance. These factors are influenced by the internal decisions of management and the board. The external factors are sector-wide or country-wide factors that are beyond the control of the company and affect the profitability of banks (Ongore, 2011). In this background, the paper attempts to address two major issues. The first one is, how is the financial performance

of joint venture banks of Nepal? And the second one is to what extend bank-specific variables make an influence on the financial performance of joint venture banks?

The objectives of this paper are to analyze the financial performance of joint venture banks and to identify the impact of bank-specific variables on the performance of joint venture commercial banks of Nepal. It focuses on the examination of the performance of joint venture commercial banks through the internal variables of capital adequacy ratio, asset quality, management efficiency, liquidity, employee expenses, other operating expenses and credit risk.

The two key indicators were advocated to measure the performance of banks in economic and financial literature. They are about the profitability of the assets viz return on assets and return on equity, and the net margin interest (Nouaili et al., 2015). However, organized studies of bank financial performance began in the late 1980s with the application of the market power and efficiency structure theories (Athanasoglou et al., 2008). The market power and efficiency structure theories explain the relationship between the bank size and profitability of the firms (Obamuyi, 2013).

The market power (MP) theory which is sometimes also referred to as the structure-conduct-performance hypothesis, asserts that increased power yields monopoly profits (Athanasoglou et al., 2008). A special case of the MP hypothesis is the relative-market-power hypothesis, which suggests that only firms with large market shares and well-differentiated products can exercise MP and earn non-competitive profits. As per the economic concept of perfect competition, all firms in a market are assumed to have zero MP. Thus, each firm has to accept the current market price without being able to exercise any control over it (Kamande, 2016). Olweny and Shipho (2011) argued that MP theory assumes the profitability of a firm is a function of external market factors. Thus the increased external market forces result in better financial operations and profitability of firms.

Likewise, the efficiency structure (ES) theory proposes that increased managerial and scale efficiency leads to higher concentration and then to higher profits. This is a clear indication of the desirable financial performance of firms especially commercial banks (Kamande, 2016). Obamuyi (2013) asserts that the balanced portfolio theory added a different dimension to the study of bank performance. The theory suggests that the portfolio composition of a commercial bank, its profit and the return to shareholders is the result of the decisions made by the management and the overall bank's policy decisions. As argued by Olweny and Shipho (2011), ES assumes the bank profitability is influenced by internal efficiencies. As such, the

present study is related to the internal factors of the bank also known as bank-specific factors.

Other theories like signaling theory state that management sends distinctive signals increasing the capital of the bank to the market (Ommeren, 2011). It indicated that a decrease in leverage ratio means that banks' performance is better than their rivals who cannot enhance their equity without further decreasing their profits. The risk-return hypothesis asserts that the relationship between capital and profitability will be negative (Dietrich & Wanzenrid, 2009; Saona, 2011; Sharma & Gounder, 2012). However, this hypothesis suggests that increasing risks, by increasing the leverage of the firm, leads to higher expected returns. DuPont analysis is another way of evaluating a bank's earning power. It states that the combined effect of operating efficiency, financing efficiency, and retention leads to a steady improvement in performance and growth in equity of firms (Pandey, 2010). Padake and Soni (2015) argued that performance of the bank cannot be judged by the profit or some ratios alone. DuPont analysis helped in capturing the efficiency of the banks. The banks that made more profits were not really efficient. Highest profit is mere reflection of more capital but there is no efficiency in utilizing all the capital.

Sufian and Chong (2008) examined the financial performance of Philipino banks for the period 1990-2005 in which they found that bank-specific factors such as capital adequacy, asset quality and management efficiency affect profitability. Using panel data of 38 Kenyan banks Olweny and Shipho (2011) found that commercial banks can achieve profitability by improving assets quality or by reducing the rate of non-performing loans. Similarly, Nakarmi (2010) reported that an increase in profitability in terms of return on assets is affected by the amount of non-performing assets in Nepal. Jha and Hui (2012) documented that return on assets was significantly influenced by capital adequacy ratio, interest expenses to total loan and net interest margin, while capital adequacy ratio has a substantial effect on return on equity of commercial banks in Nepal. An extensive study by Okoth and Gemechu (2013) also found that bank-specific variables like capital adequacy, asset quality, management efficiency, liquidity management, GDP growth rate and inflation have a significant impact on the financial performance in terms of return on investment (ROA), return on equity (ROE), and net interest margin (NIM) of Kenyan commercial banks. Kassem and Sakr (2018) found that loan ratio against NIM is shown to be negative and significant. In addition, the relationship between deposit ratio and NIM appears to be insignificantly positive. Bank size has a positive significant effect on NIM. Similarly, capital ratio appears to have a significant and positive relationship with bank's NIM in Egypt.

Jha (2014) found that capital adequacy ratio, interest expenses to total loan and net interest margin were a significant negative effect on return on assets (ROA) while the capital adequacy ratio has a positive significant influence on return on equity (ROE). One of the studies carried out by Pradhan and Shrestha (2016) including both bank-specific and macroeconomic variables documented that management efficiency has a very strong and positive relationship with bank performance in Nepal whereas the macroeconomic variables like the growth of gross domestic product and inflation have not significant and hence there is no evidence that external forces have impact over commercial bank performance. Using the data of 20 commercial banks for the period of 2009/10 to 2014/15 leading to a total of 120 observations, Pradhan and Parajuli (2017) also reported that there is a positive relationship of bank size with return on asset (ROA) implying that larger the banks, higher would be the ROA while there is a negative relationship of capital adequacy, equity capital with ROA. Similarly, this study found that capital adequacy, bank size and debt to equity ratio are positively related to ROE.

Duca and McLaughlin (1990) reported that variations in bank profitability are largely attributable to variations in credit risk since increased exposure to credit risk is normally associated with decreased firm profitability. Bhattarai (2017) revealed that credit risk indicators like default risk are significantly positively associated with banks' profitability while the capital adequacy ratio is negatively associated with profitability. Further, the effect of cost per loan assets seems minimal in explaining the variation of commercial banks' profitability. Gautam (2018) found that there is a positive relationship of return on assets with capital adequacy ratio, management efficiency and gross domestic product whereas negative with assets quality and liquidity management. Using pooled OLS, Ranabhat (2019) revealed that there is a significant positive impact of interest rate spread on ROA and ROE of the banks. Similarly, there is a significant negative impact of asset size on ROA and a significant negative impact of liquidity and loan ratio on ROE of the joint venture banks in Nepal. Bourke (1989) argued that a bank holding a high proportion of liquid assets is unlikely to earn high profits, but is also less exposed to risk. A proxy for liquidity could be the ratio of liquid assets to total assets having an inverse relationship with bank profitability (Molyneux & Thornton, 1992).

Many empirical studies include operational efficiency as a bank-specific factor affecting their profitability. Molyneux and Thornton (1992) provide evidence that bank's expenses affect positively the European banking profitability. It is attributed to the notion of efficiency wage models as suggested by Katz (1986) in which they argued that in equilibrium firms may find it profitable to pay wages above market-clearing. However, Athanasoglou at al. (2008) and

Goddard et al. (2004) found a negative relationship between operational efficiency, measured by the cost-income ratio, and bank's profitability. Using seven years panel data from 2012 to 2018 of 16 commercial banks, Hakuduwal (2021) found that the total assets and total loan and advance have positive significant impact on profitability of Nepalese commercial banks. The study also revealed that the total deposit has negative significant impact on profitability of commercial banks. Rahman and Mia (2018), using DuPont model, found that Dhaka Bank performed best in all aspects securing highest average return on equity. The study also suggested that a firm can have high return on equity, if it has high operating margin, lower interest, efficient use of assets and high use of debt in its capital structure.

The empirical reviews revealed that there are similarities and differences across the various economies in the studies undertaken by the previous researchers concerning the bank-specific factors and financial performance of commercial banks. Therefore, this study has been conducted to analyze the impact of bank-specific factors on the financial performance of commercial banks in Nepal. More specifically, it examines the impact of capital adequacy ratio, asset quality, management efficiency, liquidity, employee expenses, other operating expenses and credit risk on the financial performance of joint venture commercial banks in Nepal.

DATA AND METHODS

This paper includes all the seven joint venture banks in its sample that are operating in Nepal. The seven joint venture banks taken for the sample are Everest Bank Ltd, Himalayan Bank Ltd, Nabil Bank Ltd, Nepal Bangladesh Bank Ltd, Nepal SBI Bank Ltd, NMB Bank Ltd, and Standard Chartered Bank Nepal Ltd. Therefore, it is a census study.

The nature of data used in this paper is quantitative and it is based on secondary data of sampled banks. The data employed in the study is panel data of 10 years with total 70 observations. Data have been extracted from the financial reports of sampled banks that are obtained from the website of respective banks.

Regression models have been used to examine the effect of bank-specific variables on the performance of joint venture banks. EViews software program was used to execute the regression models. As the EViews requires the data to appear in a particular order, the data taken from the annual reports of the banks were first put into an Excel sheet on the computer. Following the requirements of the EViews program, data were listed in the Excel sheet. In the first column of the Excel sheet, the name of each bank is entered repeatedly in 10 rows and

this is followed for each sample bank. In the second column, the years of observation (from 2010 to 2019) are entered chronologically, and in the subsequent columns, the dependent and independent variables of the respective banks for the respective years are entered. To make the panel balanced, all firms were observed all periods of 10 years. Finally, data were transferred to a non-panel work-file created in the EViews program. Next, the non-panel work-file structure of EViews was changed to a panel data structure to execute the regression models. The outputs of the regression models were imported into an Excel sheet for further manipulation into tables.

To investigate the influence of internal factors on bank performance, the study selects 11 variables, three of them are dependent and the others are explanatory variables. The operational definitions of each variable are presented below.

Operational Definition of the Variables and Hypotheses

Dependent Variables

The important aspect of this paper is to analyze the impact of the bank-specific variable on financial performance. For this, bank performance is used as the dependent variable. Three profitability ratios, (i) return on asset, (ii) return on equity, and (iii) net interest margin are considered as the proxies of bank performance. The operational definitions of these variables are given below.

Return on Assets (ROA): ROA is the ratio of net income after tax to the total assets of the bank. It is an indicator of how profitable a bank is, and is compared with other banks to assess the profitability of the bank. It reflects a bank's ability to mobilize assets to generate profits.

Return on Equity (ROE): ROE is the ratio of net income after tax to the total equity of the bank. The ROE shows the extent to which a bank is successful to mobilize its equity. It is one of the measuring rods of profitability. A high ratio indicates the success of the bank in mobilizing its equity capital and vice-versa.

Net Interest Margin (NIM): NIM is a measure of the difference between the interest income generated by banks and the amount of interest paid out to their lenders (for example, deposits), relative to the amount of their interest-earning assets. In this paper, the NIM variable is expressed as the net interest income divided by total earnings assets. The higher the net interest margin, the higher the bank's profit and the more stable the bank is. Thus, it is one of the key measures of bank profitability.

Independent Variable

This paper considers bank-specific variables (i.e. capital adequacy, asset quality, management efficiency, liquidity, bank size, employee expenses, operating expenses and credit risk) as independent variables. The operational definitions of these variables are described below.

Capital Adequacy Ratio (CAR): Adequate capital protects depositors and promotes the stability and efficiency of the financial system. The capital adequacy ratio (CAR) refers to the ratio of a bank's available capital fund and the bank's risk-weighted credit exposures. Thus, it is calculated by dividing the sum of the capital fund by the aggregate of risk-weighted assets (RWA). A high ratio indicates lower risk and lower returns. So, it is expected a negative (-) sign to this variable. It is in this background that the study develops the following hypothesis:

H1: Increase in capital adequacy ratio decreases the financial performance of banks.

Asset Quality (AQ): AQ is measured as non-performing assets divided by total loans and advances. It is also called the non-performing assets ratio. The higher this ratio, the lower will be the financial performance and vice versa. It is expected a negative (-) sign to this variable. Based on this information, the study formulates the following hypothesis:

H2: Increase in the non-performing assets ratio decreases the financial performance of banks.

Management Efficiency (ME): It is measured by operating income to total assets. A higher ratio indicates the better financial performance of joint venture banks. It is expected a positive (+) sign to this variable. As a result, the following hypothesis has been developed:

H3: There is a positive impact of management efficiency on the financial performance of banks.

Liquidity (LQ): Liquidity is another factor that determines the level of bank performance. Liquidity refers to the ability of the bank to fulfill its obligations, mainly of depositors. It is measured by liquid assets to total assets ratio. It is expected that this ratio has an inverse relation with the bank's profitability. Therefore, the study develops the following hypothesis:

H4: Increase in liquidity decreases the financial performance of banks.

Bank Size (SIZE): The size of the bank is measured by the log value of total assets. The larger the banks, the more the profit due to the economies of scale as compared to small size banks. So a positive (+) sign is expected to this variable. Hence, the following hypothesis has been developed.

H5: There is a positive impact of size on the financial performance of banks.

Employees' Expenses (EE): EE includes salary, allowances, contribution to provident

fund, training expenses, uniform, medical, insurance, pension and gratuity contribution and others expenses such as post-employment and termination benefits. This paper uses the natural log value of EE as one of the independent variables. A positive relationship between EE and the bank's performance is expected because salary, bonus and other incentives may serve as a form of motivation to the employees (Calvin, 2017). In this background, the study formulates the following hypothesis:

H6: There is a positive impact of employees' expenses on the financial performance of banks.

Operating Expenses (OE): Operating expenses are the sums of total interest expenses and total non-interest expenses. Total non-interest expenses: includes staff expenses, other overhead expenses, exchange fluctuation loss, and non-operating loss. Provision for loan losses, loss from extraordinary activities (loan written-off, etc.) are not included in the non-interest expenses. This paper uses the natural log value of operating expenses as one of the independent variables. This variable is expected to influence the financial performance of the bank negatively. Considering this, the following hypothesis has been formulated:

H7: There is a negative impact of operating expenses on the financial performance of banks.

Credit Risk (CR): Credit risk is the probability that credit capital becomes bad debt. Loan loss provision to total loan and advance is used as credit risk indicators. A lower ratio indicates the better financial performance of joint venture banks. A negative (-) sign is expected for this variable. To test the effect of banks size on their performance, the study formulates the following hypothesis:

H8: There is a negative impact of credit risk on the financial performance of banks.

The Regression Models

Breusch-Pagan LM test has been used to decide between random effects regression and a pooled OLS regression models. The null hypothesis is that ''there is no significant difference across cross-sectional units.'' That is to say, 'no panel effect,' implying that, random effect model is inappropriate. The p-value of the Breusch-Pagan LM test resulted in less than 0.05, so the null hypothesis that there is no significant difference across cross-sectional units is rejected. It means there is a panel effect in the data. This indicates that Pooled OLS cannot be used. Next, Hausman Test was run to decide either to use a fixed-effect model or a random effect model. The null hypothesis is: "Random effect regression model is appropriate." If the null hypothesis is rejected, the fixed effects model should be used, otherwise, the random-

effects model should be used. For this study, the *p*-value of the Hausman test resulted to be less than 0.05, so the null hypothesis is rejected. Therefore, the fixed effects model was used to examine the impact of the bank-specific variable on the financial performance of joint venture commercial banks. This study estimates three models where the bank-specific variables have been regressed on bank performance. Bank performance has been measured in terms of return on assets, return on equity and net interest margin. Hence, the regression models take the following forms:

Model 1

$$ROA=\beta_0+\beta_1CAR+\beta_2AQ+\beta_3ME+\beta_4LQ+\beta_5SIZE+\beta_6EE+\beta_7OE+\beta_8CR+\epsilon \quad \ldots\ldots\ldots \quad (1)$$

Model 2

$$ROE=\beta_0+\beta_1CAR+\beta_2AQ+\beta_3ME+\beta_4LQ+\beta_5SIZE+\beta_6EE+\beta_7OE+\beta_8 CR+\epsilon \quad \ldots\ldots\ldots \quad (2)$$

Model 3

$$NIM = \beta_0+\beta_1CAR+\beta_2AQ+\beta_3ME+\beta_4LQ+\beta_5SIZE+\beta_6EE+\beta_7OE+\beta_8CR+\epsilon \quad \ldots\ldots \quad (3)$$

Where,

ROA = return on assets
ROE = return on equity
NIM = net interest margin
CAR = capital adequacy ratio
AQ = asset quality
ME = management efficiency
LQ = liquidity
SIZE = bank size
EE = employees' expenses.
OE = operating expenses of the banks
CR =credit risk
β_0 = constant term also called Y-intercept
ϵ = error term

β_1, β_2, β_3, β_4, β_5, β_6, β_7, and β_8 are parameters of the independent variables also known as regression coefficients for the independent variables

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 presents the descriptive statistics of dependent and independent variables used in this study. The data were obtained from seven selected joint venture commercial banks for the period of 2009/10-2018/19. The dependent variables are ROA (return on asset defined as the ratio of net income after tax to the total assets, in percentage); ROE (return on equity defined as the ratio of net income after tax to the total equity, in percentage), and NIM (net interest margin defined as the ratio of net interest income to total assets, in percentage). Similarly,

the independent variables are CAR (capital adequacy ratio defined as the bank's total capital to risk-weighted assets, in percentage), CR (credit risk defined as loan loss provision to total loan and advance, in percentage), LQ (liquidity defined as liquid assets to total assets ratio, in percentage), SIZE (size defined as the natural logarithm of total assets), AQ (assets quality defined as non-performing assets divided by total loans and advance, in percentage), ME (management efficiency defined as operating profit to total assets, in percentage), OE (operating expenses defined as the natural logarithm of operating expenses), and EE (employee expenses defined as the natural logarithm of employee expenses).

Table 1

Descriptive Statistics of the Selected Variables

Variables	Mean	Median	Standard deviation	Minimum	Maximum
ROA (%)	1.99	1.94	1.03	-0.99	8.15
ROE (%)	19.7	18.17	7.99	-6.14	47.87
NIM (%)	3.4	3.43	0.72	1.72	5.51
CAR (%)	13.38	12.54	2.94	10.19	22.99
CR (%)	2.91	1.54	4.5	0.13	23.07
LQ (%)	15.98	15.37	6.69	6.35	36.73
SIZE (log)	10.79	10.81	0.27	10.1	11.3
AQ (%)	1.1	0.78	0.93	0.1	4.22
ME (%)	8.34	8.21	1.65	5.24	12.37
OE (log)	9.47	9.51	0.29	8.45	10.04
EE (log)	8.7	8.71	0.34	7.75	9.29

Source: Annual reports of sample banks

Table 1 provides details in the form of maximum, minimum, mean, median and the standard deviation for the dependent variable and its explanatory variables. The results demonstrate the trend of efficiency measurements: ROA, ROE and NIM, over the period 2009/10–2018/19. Similarly, the results show the descriptive statistics for bank-specific variables for the same period. The results reveal that ROA, ROE and NIM each range between minimum values of −0.99, -6.14 and 1.72 and maximum values of 8.15, 47.87 and 5.51 with a mean of 1.99, 19.70 and 3.40 respectively. Mean value tells the central location of observations and standard deviation describes the variability. The mean value of ROA is 1.99 percent with

a range from -0.99 percent to 8.15 percent, suggesting that the majority of firms have high performance. The mean value of NIM is 3.40 percent with a range from 1.72 percent to 5.51 percent, indicating that the majority of firms have average performance in terms of NIM.

Relationship among Variables

In order to identify the relationship among variables, Pearson's correlation coefficients are calculated and the results are presented in Table 2.

Table 2

Correlation Matrix for the Dependent and Independent Variables

	ROA	ROE	NIM	CAR	AQ	ME	LQ	SIZE	EE	OE	CR
ROA	1.00										
ROE	0.75**	1.00									
NIM	0.45**	0.48**	1.00								
CAR	0.02	0.34**	-0.23*	1.00							
AQ	-0.02	-0.03	-0.08	0.34**	1.00						
ME	0.12	0.03	0.43**	-0.21	0.31**	1.00					
LQ	0.16	-0.08	-0.07	0.33**	0.40**	-0.23	1.00				
SIZE	0.11	0.01	0.07	0.19	-0.19	.33**	0.14	1.00			
EE	0.03	0.01	.277*	0.18	-0.13	-0.14	0.07	0.92**	1.00		
OE	-0.12	-0.11	-0.16	0.13	-0.05	0.03	0.22	0.82**	0.86**	1.00	
CR	-0.17	0.10	.31**	-0.07	0.09	0.16	0.01	-0.19	-0.12	-0.19	1.00

**p < .01. *p < .05.

Source: Annual reports of sample banks and results are drawn from SPSS version 20

Table 2 shows that there is an insignificant relationship between all types of independent variables and return on assets (ROA). It indicates that the explanatory variables under consideration have a weaker impact on financial performance in terms of ROA of joint venture banks in Nepal. However, there is a positive significant relationship between capital adequacy ratio (CAR) and return on equity (ROE) at a one percent level. This indicates that the higher the CAR, the higher would be the ROE. The results also show that CAR has significant negative relations with net interest margin (NIM) implying higher CAR would lead to lower NIM. On the other hand, management efficiency (ME), credit risk (CR) and employee expenses (EE) have a positive significant relationship with NIM. It indicates that an increase in ME, CR and EE will lead to an increase in NIM. The results also show that there is a negative relationship between asset quality (AQ) and CAR. A positive relationship exists between ME and AQ indicating better the ME, the lower the non-performing assets in the joint venture banks.

Similarly, the size of the firm proxied by the natural logarithm of total assets is positively related to ME. It implies that an increase in firm size leads to an increase in ME of sample banks. There is a high correlation of both operating expenses (OE) and employee expenses (EE) with firm size having a statistically significant relationship at one percent level.

Impact of Bank-Specific Variables on Performance of Joint Venture Banks

The banks in Nepal became more exposed to different kinds of problems and opportunities particularly as a result of remarkable change over the years concerning the number of institutions, ownership structure and control, and the degree of operations. The deregulation of the financial sector influences the changes in the sector, which provides numerous opportunities too. With the change in the bank-specific variables, there might be a change in the performance of banks. Hence, an attempt has been made here to investigate the magnitude of the impact of bank-specific variables on the performance of joint venture banks. ROA, ROE and NIM have been used as proxies of performance measures. The regression analysis result is presented by using separate tables for each model. Table 3 shows the regression analysis for ROA. The first model is:

$$ROA=\beta_0+\beta_1 CAR+\beta_2 AQ+\beta_3 ME+\beta_4 LQ+\beta_5 SIZE+\beta_6 EE+\beta_7 OE+\beta_8 CR+\epsilon \quad \ldots\ldots\ldots\ldots (1)$$

Table 3

Impact of Bank-Specific Variables on ROA

Variables	Coefficient	Std. Error	*t*-statistic	*p*-value
C	34.9389	12.5378	2.7867	0.0073
CAR	0.0880	0.0675	1.3034	0.1979
AQ	-0.0013	0.1834	-0.0070	0.9944
ME	0.0699	0.1035	0.6752	0.5024
LQ	-0.0225	0.0277	-0.8120	0.4203
SIZE	5.6259	2.2341	2.5182	0.0147
EE	4.8813	1.9919	2.4507	0.0175
OE	-1.5704	1.1428	-1.3741	0.1750
CR	-0.0268	0.0292	-0.9184	0.3624
R- squared	0.3587	*F*-statistic	2.1974	
Adjusted *R*- Squared	0.1955	Prob. (*F*-statistic)	0.0196	
S.E. of regression	0.9198	Durbin-Watson stat	2.6926	

Source: Annual reports of sample banks

Table 3 shows that the value of *R*-square is 0.3587 or 35.87 percent which means 35.87 percent of the variation in return on assets is explained by the independent variables included

in the model. The *p*-value of the *F*-statistic is significant at a five percent level which indicates that the model fits well. The results show that the increase in the independent variables, CAR, ME, SIZE and EE would increase the ROA of commercial banks. Conversely, the increase in AQ, LQ, OE and CR would decrease ROA. However, only the beta coefficients of SIZE and EE are found to be significant at a five percent level of significance. The beta coefficient for CAR is positive. From this result, it is clear that bank performance tends to increase when the capital base of a bank is increased. The result rejects the first hypothesis that capital adequacy has a negative influence on the financial performance of banks. The result is consistent with the finding of the study by Naceur (2003) who has found profitability tends to be associated with banks that hold a relatively high amount of capital.

The beta coefficient for EE is positive but statistically not significant. From this result, it is clear that bank performance tends to increase when the employees' expenses of a bank are increased. The level of ROA is negatively affected by the asset quality (AQ) ratio, measured by the ratio of non-performing assets to loans and advances, which is also as per a priori expectation. However, the influence is not very strong, because the p-value is greater than 0.05. Thus, the second hypothesis that the assets quality ratio significantly influences the ROA is rejected. This result is supported by Bilal et al. (2013) who found that the nonperforming loans to total advances ratio has a negative impact on ROAs.

The management efficiency (ME) has a positive influence on ROA, which indicates that the rise in ME increases the bank performance. The result is also as per a priori expectation. However, the influence is not very strong (p-value > 0.05), so the third hypothesis that there is a significant positive impact of ME on the financial performance of banks is rejected. Liquidity (LQ) has a negative relationship with the ROA. However, this relationship is statistically not significant (p-value > 0.05). Therefore, the fourth hypothesis that the increase in liquidity significantly decreases the financial performance of banks is also rejected.

The size of the banks (SIZE) and employee expenses (EE) have positive and significant impact on the ROA of commercial banks. Thus, the fourth hypothesis that an increase in liquidity significantly decreases the financial performance of banks and the fifth hypothesis that there is a significant positive impact of size on the financial performance of banks are accepted. These results are in line with a priori expectations. As the size of the banks has a significant positive influence on ROAs, this supports the *too big to fail theory*. And this result is consistent with the finding of the study by Louzis et al. (2012), and Koju et al. (2018) but the contrast with the findings of Espinoza and Prasad (2010). Similarly, the result that the

EE positively influences performance is also consistent with the result of Gruzauskas and Grmanova (2018). On the other hand, operating expenses (OE) and credit risk (CR) have a negative but statistically insignificant impact on the ROA. This outcome is inconsistent with the findings of Riaz, and Mehar (2013) who have reported that credit risk has a significant impact on ROA. Table 4 shows the regression analysis for ROE. The second model is:

$$ROE=\beta_0+\beta_1 CAR+\beta_2 AQ+\beta_3 ME+\beta_4 LQ+\beta_5 SIZE+\beta_6 EE+\beta_7 OE+\beta_8 CR+\epsilon \quad \ldots\ldots\ldots\ldots (2)$$

Table 4 shows that the value of *R*-square is 0.4691 or 46.91 percent which means 46.91 percent of the variation in return on equity is explained by the independent variables included in the model. The *p*-value of the *F*-statistic is significant at a one percent level, which indicates that the model fits well.

Table 4

Impact of Bank-Specific Variables on ROE

Variables	Coefficient	Std. Error	t-statistic	p-value
C	245.8283	88.9407	2.7640	0.0078
CAR	-0.3380	0.4788	-0.7059	0.4833
AQ	-0.6286	1.3007	-0.4833	0.6308
ME	0.7703	0.7339	1.0497	0.2984
LQ	-0.3859	0.1964	-1.9645	0.0487
SIZE	33.6034	15.8484	2.1203	0.0385
EE	27.2763	14.1298	1.9304	0.0476
OE	-8.8657	8.1066	-1.0936	0.2789
CR	0.1711	0.2074	0.8252	0.4128
R- squared	0.4691	F-statistic		3.4711
Adjusted R- Squared	0.3340	Prob. (F-statistic)		0.0005
S.E. of regression	6.5248	Durbin-Watson stat		2.3579

Source: Annual reports of sample banks

The beta coefficients of SIZE and EE are positive and significant at a five percent level of significance, indicating a strong positive influence on the profitability of banks measured in terms of the ROE. This finding is consistent with the findings of Pradhan and Parajuli (2017). But, the beta coefficient of LQ is significantly negative, indicating a strong negative influence on the ROE. This suggests that keeping too high liquidity affects negatively the performance of banks in terms of ROE. This finding is consistent with Molyneux and Thornton (1992) in which they found that the ratio of liquid assets to total assets have an inverse relationship with bank profitability in term of ROE. ME and CR have a very weak positive impact on ROE as

their beta coefficient are statistically insignificant. On the other hand, CAR, AQ and OE have a negative but weak influence on ROE as their coefficients are statistically insignificant at a five percent level. The result of variable CAR consistent with the findings of Pradhan and Parajuli (2017) but it is inconsistent with the finding of Jha (2014). Thus, with the increase in the ME, SIZE, EE and CR of commercial banks, their ROE would also increase. Similarly, the ROE of banks would decrease if their CAR, AQ, LQ and OE increased. Table 5 shows the regression analysis for NIM. The third model is:

$$NIM = \beta_0+\beta_1 CAR+\beta_2 AQ+\beta_3 ME+\beta_4 LQ+\beta_5 SIZE+\beta_6 EE+\beta_7 OE+\beta_8 CR+\epsilon \quad \ldots\ldots\ldots (3)$$

Table 5 presents the results of regression Model 3. The results reveal that the *R*-square for Model 3 is 0.8061. This indicates that about 80 percent of the variability in NIM is explained by the eight bank-specific factors included in Model 3. The *p*-value of the *F*-statistic is significant at a one percent level, which indicates that the model fits well.

Table 5

Impact of Bank-Specific Variables on NIM

Variables	Coefficient	Std. Error	t-statistic	p-value
C	27.2021	4.8691	5.5867	0.0000
CAR	-0.0388	0.0262	-1.4818	0.1441
AQ	-0.1119	0.0712	-1.5710	0.1219
ME	0.1141	0.0402	2.8401	0.0063
LQ	-0.0259	0.0108	-2.4087	0.0194
SIZE	5.5507	0.8676	6.3975	0.0000
EE	5.4335	0.7735	7.0242	0.0000
OE	-1.1733	0.4438	-2.6438	0.0107
CR	0.0119	0.0114	1.0525	0.2972
R- squared	0.8061	F-statistic		16.3312
Adjusted R- Squared	0.7567	Prob. (F-statistic)		0.0000
S.E. of regression	0.3572	Durbin-Watson stat		1.6515

Source: Annual reports of sample banks

As shown in Table 5 the beta coefficients for ME, SIZE, and EE are positive and statistically significant at a five percent level of significance, which indicates a positive influence on NIM. The beta coefficients of LQ and OE are negative and statistically significant at a five percent level, indicating a negative effect on the dependent variable NIM. The beta coefficient for CR is positive but statistically not significant. Similarly, the negative beta coefficients of CAR and AQ are also statistically not significant, which is inconsistent with the

findings of Sufian and Chong (2008) and Okoth and Gemechu (2013).

Among bank-specific factors, only ME, LQ, SIZE, EE and OE significantly impact NIM. Among these variables, ME, SIZE, and EE make a statistically significant positive impact on NIM. The result of variable SIZE is consistent with the Kassem and Sakr (2018), where they found a positive significant effect of bank size on NIM in Egypt. However, LQ and OE have negative coefficients suggesting that NIM is negatively affected by liquidity and operating expenses. Other three bank-specific variables viz. CAR, AQ, and CR are found to have a statistically insignificant impact on NIM. The coefficient of CAR and AQ are found to be negative and that of CR to have positive.

To sum up, except CAR and CR, all of the bank-specific variables included in the models and presented in tables 3–5 have similar positive or negative impacts on the financial performance of banks as measured by ROA, ROE, and NIM. That is, ME, SIZE, and EE positively influence the performance of banks while AQ, LQ and OE negatively influence the performance. CAR has a positive influence on ROA but a negative on ROE and NIM. On the other hand, CR has a negative influence on ROA but a positive influence on ROE and NIM.

CONCLUSIONS

The paper assesses the financial performance, and examines how the internal factors influence the financial performance of the joint venture banks. The financial performance of joint venture banks during the last 10 years keeps fluctuating and has not increased significantly. This implies that the joint venture banks in Nepal have not been able to utilize their resources very efficiently. This could be attributed to the several challenges witnessed by the banks during this period, including the earthquake of 2015, liquidity crunches, large increments made in the capital-base of banks within a short period and weak corporate governance cases. However, Nepalese joint venture banks are well-capitalized and do not have solvency problems. Because of maintaining an adequate capital adequacy ratio, they can absorb unexpected losses and safeguard the depositors, investors and creditors. By reducing the non-performing assets, banks have reduced their credit risk, too. The size of the joint venture banks has grown considerably, which shows joint venture banks have been expanding their businesses. This is attributed to the regulatory imposed of paid-up capital increment provision, which ultimately increased the total assets of the banks. However, the banks have not been able to achieve economies of scale as employee expenses and operating expenses have also been increased along with the increase in size. Though the banks had experienced a hard time during the liquidity crunch

period, in the rest period, they have been able to manage comfortable liquidity.

The result of this research provides an opportunity to assess the performance of Nepalese joint venture banks and to identify the major bank-specific variables that influence the performance of the banks. More specifically, the focus of management is needed on these bank-specific factors: ME, LQ, SIZE, EE and OE as they influence significantly the performance of Nepalese joint venture banks. This study has used only bank-specific variables to assess the impact on the financial performance of banks. Inclusion of macro-economic variables like GDP, inflation, exchange rate, remittance and broad money supply, and industry level variables like concentration and banking sector development may provide an important insight to identify the determinants of financial performance. Therefore, future studies are recommended to include these variables as well. This study can be extended further by including development banks in the sample and using the bank-specific variables over a longer period. It would be equally useful to examine other underdeveloped and least developed countries to generalize the empirical results found in this study.

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