Determinants of Profitability in Nepalese Insurance Companies

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Abstract

This study examines the determinants of profitability in Nepalese insurance companies. Return on assets (ROA) and return on equity (ROE) are the dependent variables. The selected independent variables are firm size, liquidity, tangibility, firm age, premium growth and total capital. The study is based on secondary data of 27 insurance companies with 108 observations for the study period from 2018/19 to 2021/22. The data were collected from the annual reports of selected Nepalese insurance companies. The regression models are estimated to test the significance and effect of firm specific factors on the profitability of Nepalese insurance companies.

The study showed that liquidity ratio has a negative impact on return on assets and return on equity. It means that increase in liquidity ratio leads to decrease in return on assets and return on equity. In contrast, assets tangibility has a positive impact on return on assets and return on equity. It shows that higher the assets tangibility, higher would be the return on assets and return on equity. Similarly, firm age has a positive impact on return on assets and return on equity. It means that increase in firm age leads to increase in return on assets and return on equity. Furthermore, premium growth has a positive impact on return on equity. It means that higher the premium growth, higher would be the return on equity. In addition, total capital has the positive impact on return on assets. It indicates that higher the total capital, higher would be the return on assets and return on equity.

Keywords: return on asset, return on equity, firm size, liquidity, tangibility, firm age, premium growth, total capital

1. Introduction

Financial institutions are vital contributor to the overall performance of an economy in any country by serving the economy as intermediary as well as risk taker. Financial institutions serve as a medium of exchange and facilitate business activities, support mobilization of resources through savings and allocate resources to activities with highest returns, follow up investments and exert corporate governance, and offer a diversity of financial instruments. According to Lindmark (2006), profitability serves as a measure of evaluating overall business performance. Profitability is the standard to

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measure management's performance or efficiency. Insurance companies are not only providing the mechanism of risk transfer but also helps to channelizing the funds in an appropriate way to support the business activities in the economy. A well developed and evolved insurance sector is a benefit for economic development as it provides long-term funds for infrastructure development at the same time strengthening the risk-taking ability of the country (Gnatzy and Moser, 2012). According to Chen and Wong (2004), a strong and healthy insurance sector is of utmost importance for all groups and sectors of the economy. Insurance serves a number of valuable economic functions that are similar and largely distinct from other types of financial intermediaries. Insurance plays a crucial role in development commercial and infrastructural businesses (Ward and Zurbruegg, 2000). From the latter perspective, it promotes financial and social stability; mobilizes and channels savings; supports trade, commerce and entrepreneurial activity and improves the quality of the lives of individuals and the overall wellbeing in a country.

Insurance business plays a significant role in the growth of the financial services which ultimately leads to the overall success of the economy. Berhe and Kaur (2017) assessed the key factors that affect profitability of insurance companies in Ethiopia. The study revealed that size of insurance, capital adequacy, liquidity ratio and growth rate of GDP were the major factors that significantly affect the profitability of insurance companies. On the other hand, leverage ratio, loss ratio, market share and inflation rate were found to have insignificant effect on insurance companies' profitability. Hifza (2011) analyzed the various factors affecting profitability of insurance companies in Pakistan. The study specifically examined the effects of firm specific factors such as age of company, size of company, volume of capital, leverage ratio and loss ratio on profitability. The findings of the study showed that there was no relationship between profitability and age of the company but there was positive association between size of the company and profitability. The study also showed that the volume of capital was positively related to profitability. However, loss ratio and leverage ratio indicated negative relationship with profitability. Ngunguni et al. (2020) investigated the effects of financial factors on profitability of general insurance companies in Kenya. The results showed that variables such as leverage ratio, liquidity, size of company, and management competence have a positive statistical effect on the financial performance of insurance companies. However, age of the company has no influence on their performance that encourages new entrants into insurance industry. Furthermore, Mwangi and Murigu (2015) analyzed the determinants

of financial performance in general insurance companies in Kenya. The study aimed to establish the factors that affect the profitability of general insurers in the country by employing multiple linear regression analysis. The study found that the profitability was positively related to leverage, equity capital, management competence index and negatively related to size and ownership structure.

Strong financial institution system such as banks and nonbank financial institutions, insurance companies play a vital role in the development of a given country. Insurance companies, enhances the firms and individuals saving mobilizations and transferring risk, which is minimizing the companies` financial and non-financial worries in future. Boadi *et al.* (2013) stated that the insurance companies' profitability is affected by the organizational specific factors such as leverage ratio, tangibility ratio, size, liquidity ratio, risk and growth rate of the firm. Similarly, Lee (2014) measured insurance company profitability by using operating ratio and return on assets (ROA) for the two kinds of profitability indicators to measure insurers' profitability. The results showed that underwriting risk, reinsurance usage, input cost, return on investment (ROI) and financial holding group have significant influence on profitability in both operating ratio and ROA models. Moreover, Burca and Batrinca (2012) assessed the determinants of financial performance in the Romanian Insurance market. The study attempted to analyze the determining factors of insurance industry financial performance in terms of return on asset. The study concluded that financial leverage, growth of gross written premiums and underwriting risk have negative impact on insurance financial performance whereas size of company, retained risk, and solvency margin have a positive linkage with financial performances. In addition, Jibran *et al.* (2016) stated the profitability of non-life insurance companies in Pakistan is prejudiced by working capital management, other firm's specific variables coupled with the macroeconomic variables like inflation and GDP.

Insurance plays a crucial role in fostering commercial and infrastructural businesses. Ezirim et al. (2017) investigated the key determinants of insurance profitability in Nigeria using least squares and associated diagnostic tests, cointegration and the fully modified Phillips-Hansen estimation procedures. The results indicated that five variables namely premium ratio, level of economic activity (or simply, state of the economy), and investments ratio, and profitability in previous periods significantly and positively influenced current profitability of insurance companies in Nigeria. The study also showed that only financial market conditions and claims ratio were found to

exert significant but negative influence on current profitability. Staikouras and Wood (2003) examined the effect of internal and external factors on the profitability of banks operating in 13 different European countries using panel data methodology. The study found that internal factors exerted the strongest influence the performance of the banks than the external factor. Moreover, banks with greater levels of equity were found to be more profitable than those with greater levels of debt. Externally, GDP growth and interest rates were inversely related while with profitability of banks. Similarly, Ahmed et al. (2011) investigated the determinants of performance in life insurance sector of Pakistan by using panel data of five insurance companies from 2001-2007. The results showed that leverage, size of the firm and risk were the most important arguments in explaining insurance corporate performance while growth, tangibility, age of the firm, and liquidity did not associate significantly with performance of life insurance firms. Further, Amal et al. (2012) assessed twenty-five insurance companies in Jordan from 2002/03 to 2007/08. The study that found leverage, liquidity, firm, and managerial competence are positively and significantly related to financial performance of the companies. Moreover, Berhe and Kaur (2017) examined the internal or firm specific variables (firm size, capital adequacy, leverage, liquidity, and loss ratio) and external or macro variables (market share, growth rate of GDP and inflation) in a bid to identify the key factors influencing insurance profitability in Ethiopia using the fixed effect model against panel data from 2005-06 to 2014-15 for seventeen (17) insurance companies. The findings showed that firm size, capital adequacy, liquidity ratio and growth rate of GDP were the major factors that significantly impacted the profitability of insurance companies. Conversely, leverage, loss ratio, market share and inflation were insignificant in their impact.

In the context of Nepal, Wosti and Pradhan (2023) showed that firm size and liquidity have a negative impact on return on assets and return on equity. Similarly, the study showed that net claim ratio and net commission ratio have a negative impact on return on assets and return on equity. It means that increase in net claim ratio and net commission ratio leads to decrease in return on assets and return on equity of insurance companies in Nepal. Moreover, the study also showed that assets tangibility and ratio of ceded reinsurance have a positive impact on return on assets and return on equity. The study also concluded that ratio of ceded reinsurance followed by net commission ratio is the most influencing factor that explains the changes in the return on assets of selected Nepalese insurance companies. Similarly, the study also concluded

that assets tangibility is the most influencing factor that explains the changes in the return on equity in context of selected Nepalese insurance companies. Risal (2020) assessed the relationship between financial performances with company size, liquidity, leverage and underwriting risk of non-life insurance companies in Nepal. The study concluded that the sizes of the non-life insurance companies have significant positive impact on non-life insurances' profitability. The liquidity fluctuations don't have impact on the performance of non-life insurance companies in Nepal. The non-life insurance companies with upper leverage have lower financial performance. The study further concluded that whatever changes in benefits paid and net premium, non-life insurance companies ROA would haven't any changes. Moreover, Khadka and Pradhan (2023) showed that firm size, liquidity rate, inflation and money supply have negative impact on return on assets (ROA). However, tangibility, dividend per share, premium growth and gross domestic product has positive impact on return on assets (ROA). Likewise, firm size, liquidity rate, inflation and money supply have negative impact on return on equity (ROE). However, tangibility, dividend per share, premium growth and gross domestic product has positive impact on return on equity (ROE).

The above discussion shows that empirical evidences vary greatly across the studies on the determinants of insurance companies' profitability. Though there are above mentioned empirical evidences in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The major objective of the study is to examine the determinants of profitability of Nepalese insurance companies. More specifically, it examines the impact of liquidity, firm size, firm age, total capital, tangibility and premium growth on return on asset and return on equity of Nepalese insurance companies.

The remainder of this study is organized as follows: Section two describes the sample, data and methodology. Section three presents the empirical results and the final section draws the conclusion.

2. Methodological aspects

The study is based on the secondary data which were gathered from 27 insurance companies for the study period from 2018/19 to 2021/22, leading to a total of 108 observations. The study employed purposive sampling method. The main sources of data include annual report of respective insurance

companies. This study is based on descriptive as well as causal comparative research designs. Table 1 shows the list of insurance companies selected for the study along with the study period and number of observations.

Table 1

List of insurance companies selected for the study along with the study period and number of observations

S.N.	Name of insurance companies	Study period	Observations
1	Nepal Insurance Company Limited	2018/19-2021/22	4
2	The Oriental Insurance Company Limited	2018/19-2021/22	4
3	Himalayan Everest Insurance Company Limited	2018/19-2021/22	4
4	United Ajod Insurance Company Limited	2018/19-2021/22	4
5	Neco Insurance Limited	2018/19-2021/22	4
6	Sagarmatha Lumbini Insurance Company Limited	2018/19-2021/22	4
7	Prabhu Insurance Limited	2018/19-2021/22	4
8	IGI Prudential Insurance Limited	2018/19-2021/22	4
9	Shikhar Insurance Company Limited	2018/19-2021/22	4
10	NLG Insurance Limited	2018/19-2021/22	4
11	Siddhartha Premier Insurance Limited	2018/19-2021/22	4
12	Rastriya Beema Company Limited	2018/19-2021/22	4
13	Sanima GIC Insurance Limited	2018/19-2021/22	4
14	Life Insurance Corporation (Nepal) Limited	2018/19-2021/22	4
15	Rastriya Beema Sansthan	2018/19-2021/22	4
16	National Life Insurance Company Limited	2018/19-2021/22	4
17	Nepal Life Insurance Company Limited	2018/19-2021/22	4
18	MetLife Insurance Company Limited	2018/19-2021/22	4
19	Surya Jyoti Life Insurance Company Limited	2018/19-2021/22	4
20	Himalayan Life Insurance Limited	2018/19-2021/22	4
21	Asian Life Insurance Company Limited	2018/19-2021/22	4
22	IME Life Insurance Company Limited	2018/19-2021/22	4
23	Reliable Nepal Life Insurance Company Limited	2018/19-2021/22	4
24	Sanima Reliance Life Insurance Limited	2018/19-2021/22	4
25	Citizen Life Insurance Limited	2018/19-2021/22	4
26	Sun Nepal Life Insurance Company Limited	2018/19-2021/22	4
27	Prabhu Mahalaxmi Life Insurance Limited	2018/19-2021/22	4
Total number of observations			**108**

Thus, the study is based on 108 observations.

The model

The model used in this study assumes that the insurance companies' profitability depends upon different firm specific factors. The dependent

variables selected for the study are return on assets and return on equity. Similarly, the selected independent variables are firm size, liquidity, tangibility, firm age, premium growth, and total capital. Therefore, the model takes the following form:

$$ROA = \beta_0 + \beta_1 LIQ + \beta_2 FS + \beta_3 FA + \beta_4 TG + \beta_5 PG + \beta_6 VC + e_{it}$$

$$ROE = \beta_0 + \beta_1 LIQ + \beta_2 FS + \beta_3 FA + \beta_4 TG + \beta_5 PG + \beta_6 VC + e_{it}$$

ROA = Return on assets as measured by the ratio of net income to total assets, in percentage.

ROE = Return on equity as measured by the ratio of net income to total equity, in percentage.

FS = Firm size of insurance company measured by total assets, Rs in millions

LIQ = Liquidity ratio as measured by the ratio of current assets to current liabilities, in times.

TG = Tangibility as measured by the ratio of total fixed assets to total assets, in percentage.

AF = Firm age as measured by the number of years from the date of establishment, in years.

PG = Premium growth rate is the percentage increase in gross written premiums, in percentage.

VC = Total capital as measured by the ratio of total capital to total assets, in percentage.

The following section describes the independent variables used in this study along with the hypothesis formulation:

Firm size

Alomari and Azzam (2017) examined the effect of micro and macro factors on the performance of the listed Jordanian insurance companies. The study found that the company size has a positive relationship with the financial performance of life insurance companies. Similarly, Banerjee and Majumdar (2015) assessed the impact of firm specific and macroeconomic factors on financial performance of the UAE insurance sector. The study revealed that there is a positive relationship between financial performance and the size of insurance companies. In addition, Lee (2014) analyzed the effects of firm specific factors and macroeconomics on profitability of property-liability insurance industry in Taiwan. The results asserted that increase in company size leads to increase in the performance of the bank. Based on it, this study

develops the following hypothesis:

H_1: There is a positive relationship between firm size and firm profitability.

Liquidity

The performance of the company plays a leading role towards the growth of the industry which ultimately leads to the overall success of the economy. Bawa and Chattha (2013) examined the financial performance of Indian life insurers on the basis of liquidity, solvency, profitability and leverage of the insurance players. The results of the study revealed that profitability of life insurers is negatively influenced by liquidity and capital. Kripa and Ajasllari (2016) examined the impact of growth rate, liabilities, liquidity, fixed assets, volume of capital and company size on the profitability of insurance companies in Albania. The results of the study showed that factors such as growth rate, liabilities, liquidity and fixed assets are the main factors affecting the profitability of insurers, where the growth rate is positively associated with profitability, while liabilities, liquidity and fixed assets are negatively correlated. Eljelly (2004) examined the association between profitability and liquidity of joint stock companies in Saudi Arabia using correlation and regression analysis. The study revealed that there is a negative relationship between liquidity and profitability of Saudi companies. Based on it, this study develops the following hypothesis:

H_2: There is a negative relationship between liquidity and firm profitability.

Firm age

Rahman and Yilun (2021) found that there is a positive relationship between companies' age and profitability in the context of China. Pervan et al. (2012) assessed the factors affecting the profitability of the insurance companies between 2005 and 2010. The study found that there is a positive relationship between firm age and profitability. Moreover, Sorensen and Stuart (2000) argued that companies' age affects the firm's performance. Further, the study argued that organizational inertia operating in old firms tends to make them more efficient and profitable. In addition, Liargovas and Skandalis (2008) reported that older firms are more skilled since they have enjoyed the benefits of learning and are not prone to the liabilities of newness, hence they have a superior performance. Based on it, this study develops the following hypothesis:

H_3: There is a positive relationship between firm age and firm profitability.

Total capital

Dogan (2013) investigate the effect of firm size on profitability of 200 companies which were active in Istanbul Stock Exchange (ISE) between the years 2008-2011. The study found a positive association between capital and firm profitability. If a company invests its capital wisely and generates a higher return on investment (ROI), then profitability is likely to increase. However, if capital is misallocated or not effectively utilized, it can lead to lower profitability. Gill et al. (2011) assessed the effect of capital structure on profitability in United States. The result revealed that capital is positively related to firm profitability. Moreover, Babalola (2013) found a significant positive effect of capital ratio on firm's profitability in Nigeria.

H_4: There is a positive relationship between total capital and firm profitability.

Tangibility

Tangibility refers to the proportion of tangible assets within a company's total assets. It encompasses physical assets like property, plants, equipment, and real estate. Mehari and Aemiro (2013) examined the impact of the Ethiopian insurance companies' characteristics on their performance. The study included 9 insurance companies which are analyzed through panel data technique during 2005–2010. The results showed that company size, tangibility and leverage have significant positive impact on the insurance companies' profitability. Likewise, Ben Dhiab (2021) concluded that the growth rate of written premium and the tangibility ratio are the main factors that positively influence the profitability of Saudi insurance companies. Furthermore, Shahi and Agnihotri (2022) found that tangibility of insurance company has a significant positive effect on the life insurance companies' profitability in India. Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship between tangibility and firm profitability.

Premium growth

Rapid premium growth can indicate successful marketing strategies, effective customer acquisition, and increased market demand. It suggests that the insurer is attracting more policyholders and underwriting more policies. Cummins, Doherty, and Lo (2002) explored the relationship between firm performance and premium growth in the property-liability insurance industry. The study found a positive association between premium growth and measures of financial performance, indicating that premium growth can contribute to firm profitability. Higher premium growth can lead to increased revenue for insurance companies. As more policies are underwritten, the company collects more premiums. This potential revenue growth can contribute to profitability,

assuming the underwriting and claims management processes are efficiently managed. Weiss et al. (2010) revealed that premium growth can positively impact the financial performance of insurers. The higher premium growth indicates increased market demand and successful business expansion, which could contribute to higher revenues and, consequently, better financial performance. Kramaric et al. (2017) showed a positive relationship between premium growth and profitability of insurance markets in selected central and eastern European countries. Based on it, this study develops the following hypothesis:

H_6: There is a positive relationship between premium growth and firm profitability.

3. Results and discussion

Descriptive statistics

Table 2 presents the descriptive statistics of the selected dependent and independent variables during the period 2018/19 to 2021/22.

Table 2

Descriptive statistics

This table shows the descriptive statistics of dependent and independent variables of 27 Nepalese insurance companies for the study period from 2018/19 to 2021/22. The dependent variables are ROA (Return on assets as measured by the ratio of net profit to total asset, in percentage) and ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are FS (Firm size of insurance company measured by total assets, Rs in millions), LIQ (Liquidity ratio as measured by the ratio of current assets to current liabilities, in times), TG (Tangibility ratio as measured by the total fixed assets to total assets, in percentage), PG (Premium growth rate is the percentage increase in gross written premiums, in percentage), AF (Firm age as measured by the number of years from the date of establishment, in years), and VC (Total capital as measured by the ratio of total capital to total assets, in percentage).

Variables	Minimum	Maximum	Mean	Std. Deviation
ROE	-2.63	11.79	4.49	2.54
ROA	-4.55	22.01	7.32	4.01
LIQ	0.18	10.50	2.56	1.30
FS	18.63	25.20	22.42	1.15
VC	0.69	4.32	2.61	0.78
AF	17.11	22.57	21.37	0.73
TG	0.05	11.18	2.26	2.41
PG	-17.09	91.43	25.17	21.30

Source: SPSS output

Correlation analysis

Having indicated the descriptive statistics, Pearson's correlation coefficients are computed and the results are presented in Table 3.

Table 3

Pearson's correlation coefficients matrix

This table shows the bivariate Pearson's correlation coefficients of dependent and independent variables of 27 Nepalese insurance companies for the study period from 2018/19 to 2021/22. The dependent variables are ROA (Return on assets as measured by the ratio of net profit to total asset, in percentage) and ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are FS (Firm size of insurance company measured by total assets, Rs in millions), LIQ (Liquidity ratio as measured by the ratio of current assets to current liabilities, in times), TG (Tangibility ratio as measured by the total fixed assets to total assets, in percentage), PG (Premium growth rate is the percentage increase in gross written premiums, in percentage), AF (Firm age as measured by the number of years from the date of establishment, in years), and VC (Total capital as measured by the ratio of total capital to total assets, in percentage).

Variables	ROE	ROA	LIQ	FS	VC	AF	TG	PG
ROE	1							
ROA	0.773**	1						
LIQ	-0.034	-0.034	1					
FS	-0.003	0.059	-0.540**	1				
VC	0.187	0.191*	-0.334**	-0.425**	1			
AF	0.325**	0.035	0.446**	-0.423**	-0.029	1		
TG	0.212*	0.171	-0.209*	0.219*	-0.004	-0.378**	1	
PG	0.224	-0.046	0.488**	-0.455**	0.04628	0.643**	-0.513**	1

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent levels respectively.

Table 3 shows that firm size has a positive relationship with return on assets. It means that increase in firm size leads to increase in return on assets. Likewise, there is a negative relationship between liquidity ratio and return on assets. It means that increase in liquidity ratio leads to decrease in return on assets. Moreover, assets tangibility has a positive relationship with return on assets. It shows that higher the assets tangibility, higher would be the return on assets. Similarly, the firm age has the positive relationship with return on assets. It shows that higher the age of insurance companies, higher would be the return on assets. Furthermore, premium growth has a negative relationship with return on assets. It means that higher the premium growth,

lower would be the return on assets. In addition, total capital has a positive relationship with return on assets. It indicates that higher the total capital ratio, higher would be the return on assets.

Similarly, the result also shows that firm size has a negative relationship with return on equity. It means that increase in firm size leads to decrease in return on equity. Likewise, there is a negative relationship between liquidity ratio and return on equity. It shows that increase in liquidity ratio leads to decrease in return on equity. In contrast, assets tangibility has a positive relationship with return on equity. It indicates that higher the assets tangibility, higher would be the return on equity. Similarly, firm age has the positive relationship with return on equity. It shows that higher the age of insurance companies, higher would be the return on equity. Furthermore, premium growth has a positive relationship with return on equity. It shows that higher the premium growth, higher would be the return on equity. In addition, total capital has a positive relationship with return on equity. It indicates that higher the total capital ratio, higher would be the return on equity.

Regression analysis

Having indicated the Pearson's correlation coefficients, the regression analysis has been carried out and results are presented in Table 4 and Table 5. More specifically, Table 4 shows the regression results of firm size, liquidity, tangibility, firm age, premium growth, and total capital with return on equity of Nepalese insurance companies.

Table 4

Estimated regression results of firm size, liquidity, tangibility, firm age, premium growth, and total capital on return on equity

The results are based on panel data of 27 insurance companies with 108 observations for the period from 2018/19 to 2021/22by using the linear regression model and the model ROE $=\beta_0 + \beta_1$ LIQ $+ \beta_2$ FS $+ \beta_3$ FA $+ \beta_4$ TG $+ \beta_5$ PG $+\beta_6$ VC $+ e_{it}$ where, the dependent variable is ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are FS (Firm size of insurance company measured by total assets, Rs in millions), LIQ (Liquidity ratio as measured by the ratio of current assets to current liabilities, in times), TG (Tangibility ratio as measured by the total fixed assets to total assets, in percentage), PG (Premium growth rate is the percentage increase in gross written premiums, in percentage), AF (Firm age as measured by the number of years from the date of establishment, in years), and VC (Total capital as measured by the ratio of total capital to total assets, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		LIQ	FS	VC	AF	TG	PG			
1	3.185 (4.211)**	-0.015 (2.125)*						0.031	0.512	4.516
2	1.531 (10.540)**		-0.008 (0.369)					0.008	0.522	0.136
3	1.453 (18.481)**			0.03 (2.064)*				0.029	0.513	4.258
4	1.576 (4.183)**				0.001 (0.015)			0.009	0.522	0.001
5	1.771 (34.676)**					0.111 (6.512)**		0.272	0.444	42.402
6	1.666 (3.442)**						0.001 (0.176)	0.009	0.522	0.031
7	4.403 (6.970)**	-0.024 (4.179)**				0.125 (7.701)**		0.366	0.414	33.107
8	4.506 (7.091)**	-0.021 (3.323)**			0.034 (1.252)	0.132 (7.707)**		0.37	0.413	22.709
9	5.417 (6.440)**	-0.018 (2.635)**	-0.018 (0.837)			0.151 (8.383)**	0.018 (3.050)**	0.406	0.401	19.997
10	5.417 (6.395)**	-0.018 (2.597)**	-0.018 (0.828)		0.001 (0.009)	0.150 (8.313)**	0.018 (2.722)**	0.401	0.403	15.848
11	3.384 (2.642)**	-0.003 (0.286)	-0.032 (1.020)	0.044 (2.091)*	0.008 (0.257)	0.153 (8.568)**	0.021 (3.065)**	0.419	0.396	14.356

Notes:

i. Figures in parenthesis are t-values.

ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.

iii. Return on equity is the dependent variable.

Table 4 shows that the beta coefficients for firm size are negative with return on equity. It indicates that firm size has a negative impact on return on equity. This finding contradicts with the findings of Alomari and Azzam (2017). The beta coefficients for liquidity are negative with return on equity. It shows that liquidity ratio has a negative impact on return on equity. This finding is inconsistent with the findings of Kripa and Ajasllari (2016). Likewise, the beta coefficients for tangibility are positive with return on equity. It indicates that tangibility has a positive impact on return on equity. This finding is similar to the findings of Ben Dhiab (2021). Furthermore, the beta coefficients for premium growth are positive with return on equity. It indicates that premium growth has a positive impact on return on equity. This finding is similar with the findings of Kramaric et al. (2017).

Table 5 shows the regression results of firm size, liquidity, tangibility, firm age, premium growth, and total capital with return on assets of Nepalese insurance companies.

Table 5

Estimated regression results of firm size, liquidity, tangibility, firm age, premium growth, and total capital on return on assets

The results are based on panel data of 27 insurance companies with 108 observations for the period from 2018/19 to 2021/22by using the linear regression model and the model ROA = $\beta_0 + \beta_1 LIQ + \beta_2 FS + \beta_3 FA + \beta_4 TG + \beta_5 PG + \beta_6 VC + e_{it}$ where, the dependent variable is ROA (Return on assets as measured by the ratio of net income to total assets, in percentage). The independent variables are FS (Firm size of insurance company measured by total assets, Rs in millions), LIQ (Liquidity ratio as measured by the ratio of current assets to current liabilities, in times), TG (Tangibility ratio as measured by the total fixed assets to total assets, in percentage), PG (Premium growth rate is the percentage increase in gross written premiums, in percentage), AF (Firm age as measured by the number of years from the date of establishment, in years), and VC (Total capital as measured by the ratio of total capital to total assets, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		LIQ	FS	VC	AF	TG	PG			
1	33.861 (3.749)**	-0.157 (1.882)						0.022	6.113	3.541
2	12.55 (7.514)**		0.707 (2.767)**					0.057	6.006	7.658
3	17.312 (18.197)**			0.098 (0.553)				0.006	6.202	0.306
4	33.063 (7.874)**				1.261 (3.883)**			0.113	5.824	15.079
5	17.824 (25.552)**					0.541 (2.328)*		0.038	6.064	5.418
6	38.726 (7.225)0**						-0.266 (4.094)**	0.124	5.786	16.761
7	57.913 (10.314)**					1.365 (6.096)**	-0.471 (7.178)**	0.341	5.019	29.713
8	53.264 (7.808)**		0.286 (1.195)			1.36 (6.084)**	-0.436 (6.074)**	0.344	5.009	20.363
9	57.256 (8.259)**		0.183 (0.763)		0.818 (2.235)*	1.399 (6.353)**	-0.348 (4.319)**	0.367	4.919	17.086
10	47.56 (4.608)**	-0.108 (1.265)	0.309 (1.193)		0.882 (2.394)*	1.417 (6.438)**	-0.371 (4.502)**	0.370	4.906	14.065
11	34.51 (2.178)*	-0.206 (1.658)	0.630 (1.603)	0.255 (1.085)	0.831 (2.238)*	1.434 (6.503)**	-0.385 (4.622)**	0.372	4.901	11.937

Notes:

i. Figures in parenthesis are t-values.

ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.

iii. Return on assets is the dependent variable.

Table 5 shows that the beta coefficients for firm size are positive with return on assets. It indicates that firm size has a positive impact on return on assets. This finding is consisitent with the findings of Banerjee and Majumdar (2015). Similarly, the beta coefficients for liquidity are negative with return on assets. It shows that liquidity ratio has a negative impact on return on assets. This finding is inconsistent with the findings of Eljelly (2004). Similarly, the

beta coefficients for tangibility are positive with return on assets. It means that tangibility has a positive impact on return on assets. This finding is similar to the findings of Shahi and Agnihotri (2022). Likewise, the beta coefficients for firm age are positive with return on assets. It reveals that firm age has a positive impact on return on assets. This finding is consistent with the findings of Rahman and Yilun (2021). Furthermore, the beta coefficients for premium growths are negative with return on assets. It indicates that premium growth has a negative impact on return on assets. This finding contradicts with the findings of Weiss et al. (2010).

4. Summary and conclusion

The insurance sector plays important role in the financial services industry in almost developed and developing countries. It contributes to economic growth, efficient resource allocation, reduction of transaction costs, creation of liquidity, facilitation of economics of scale in investment, and spread of financial losses. Insurance plays a significant role in a country's economic growth and offers financial protection to an individual or firm against monetary losses suffered from unforeseen circumstances. This is because the world is characterized by risks and uncertainties and insurance has evolved as a way of providing security against the risks and uncertainties. The insurance companies, at large, play a critical role in ensuring overall financial and economic stability in the nation and provide a wide range of benefits from ensuring individual financial security to facilitating large scale social security

This study attempts to examine the determinants of profitability of Nepalese insurance companies. The study is based on secondary data of 27 insurance companies with 108 observations for the period from 2018/19 to 2021/22.

The study showed that liquidity and premium growth have a negative impact on return on assets. However, firm size, tangibility, firm age, and total capital have a positive impact on return on assets. Likewise, firm size and liquidity have a negative impact on return on equity. However, tangibility, firm age, premium growth, and total capital has a positive impact on return on equity. Likewise, the study concluded that premium growth is the most influencing factor that explains the changes in the profitability in terms of return on assets. Likewise, the study also concluded that the most dominant factor that determines the return on equity is tangibility in the context of Nepalese insurance companies.

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