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Abstract

Forecasting financial performance is an essential part of business planning and decision making that uses past financial performance and current conditions to analyze financial statement such as income statement, balance sheet and cash flow of a company. The objective of this study is to demonstrate the relationship between net profit and return on investment (ROI) with sales revenue, operating expenses, income tax and investment using time series data. This is important because net profit and return on investment gives more information for forecasting financial performance of a company. This paper uses some forecasting tools and techniques such as simple and multiple regression model to interpret financial performance of a company and prospects of the business. In order to achieve this objective, "Excel Data Analysis" is used as an analytical tool to analyze the data of the study represented by the actual data taken from the relevant renowned companies such as Unilever and Nestle for the period (2005 - 2020). In this analysis, it is observed that the correlation between dependent variable and independent variable is medium and poor for using simple regression technique. It also interprets that the correlation is positively high for Unilever whereas it is positively medium for Nestle company if multiple regression analysis is applied instead of simple regression. The hypothesis of this analysis shows that there is a statistically significant relationship between net profit and return on investment with sales revenue, operating expenses, income tax and investment using multiple regression technique.

Keywords: Forecasting, Financial performance, Net profit, ROI, Regression analysis.

1. Introduction

Every business organization prepares financial statements such as income statement, balance sheet and cash flow every year to know profitability and financial condition of the business. But these statements alone do not provide any information for decision making and planning of business in present or future. In order to ascertain decision making regarding different aspects as sales revenue, operating expenses, income tax, net profit, investment and ROI of the business it is required to analyze financial statements. Company uses income statement, balance sheet and cash flow statements to examine their financial performance. Income statement or profit and loss statement includes gross profit, cost of goods sold (COGS), operating profit, and net profit. When the production cost is subtracted from revenue made from sales, gross profit is found. Whereas net profit is calculated by deducting operating expenses, interests and taxes from revenue generated. In other words, the statement that provides a summary of operations for the entire year is called income statement which starts with sales and ends with net income. A company's assets, liabilities and shareholder's equity at a given time are reported in a balance sheet. It provides the basis for computation of rate of return and evaluation of company's capital structure. Cash inflows that a firm receives from its ongoing operations, sales or maturity of assets and cash outflows that are spent for investing, purchasing, and paying business activities are incorporated in cash flow statement. This statement provides aggregate data that act as a bridge between balance sheet and income statement to show the amount of money moved in and out of the business.

Considering the historical performance data, a financial prognosis predicts the comparative position in relation to other firms of similar kind of activities by comparing sales, expenses, profits, and ROI. Different tools and techniques are used to identify efficiency and financial performance of an organization and prospects of the business. Some of these important tools are comparative financial statement analysis, common size statements, trend analysis, ratio analysis, funds flow analysis and cash flow analysis. A business organization can be considered a financial success when it turns a profit and produces a good return on investment for its shareholders by applying some analytical tools and techniques.

This paper focuses on forecasting financial performance of business decision making to analyze the financial statements by utilizing past and present data.

In financial planning process forecasting financial performance is the initial step that helps to predict net profit and return on investment and have remarkable impact on business and its success and failure. In forecasting the financial performance, net profit, return on investment, sales revenue, income tax of a company plays an important role. These data are taken from two renowned multinational companies as Unilever and Nestle from their annual financial statements for the year 2005-2020. Nestlé is the world's largest food and beverage company, in terms of revenue that has more than 2000 brands and is present in 187 countries around the world. *Unilever* is also a multinational consumer goods *company* that has over 400 brands and is present around 190 countries worldwide. Unilever and Nestle companies are chosen for this analysis because of their strong financial performances over the years. Simple and Multiple regression analysis is conducted to analyze the data of sales revenue, operating expenses, income tax and investment which are considered as independent variable and net profit and return on investment are considered as dependent variables in this paper.

The profitability of a company can be represented by net profit. Once all expenses and costs such as, taxes, operating expenses, preferred stock dividends, and interests are deducted from the total revenue, net profit is found. The formula of net profit is total revenue minus total expenses. Whereas return on investment (ROI) is a performance measure which is used to assess the efficiency and profitability of an investment, the amount of return on a particular investment relative to investor's cost is sized by ROI. It is expressed in percentage and can be computed using the formula: that is ROI equal to net profit before tax and interest divided by total capital (shareholder equity + long term debt) where shareholder equity equal to total asset minus total liability.

The objectives of this study are to

1. identify whether forecasting financial performance plays an important role in taking decisions about a company's growth and future prospect,

2. evaluate the importance of impact of sales revenue, operating expenses, income tax and investment on net profit and return on investment,
3. conduct both simple and multiple regressions to analyze the impact of independent variables on dependent and how does it vary,
4. observe which independent variable/s has/have strong correlations with dependent variables,
5. compare financial performance of Unilever and Nestle based on excel data analysis and
6. provide a guideline for investors and shareholders in which company to invest based on their financial performance.

The remaining of this paper is organized as follows. Section 2 presents the existing literature on this study. Section 3 gives a detailed description of the methodology where data collection, analyzing methods and variables selectin are explained. The research findings are analyzed in Section 4. The last section of the paper, which is Section 5, concludes the whole study with some recommendations.

2. Literature Review

This study has been linked to many previous studies in terms of its association with some variables, but not all of them. This study has benefited from previous studies in enriching some analytical aspects and taking advantage of some common tools and techniques between this study and previous studies. Although the previous studies applied simple and multiple regression analysis for financial statements but this study shows different interpretation of different dependent and independent variables for forecasting financial performance of a business organization using simple and multiple regression techniques.

Dream for all the organizations is to maximize profit. Organizations make products or services according to the customers need and they make profit (Pandey, 2000). A company's financial performance depends on different aspects like net profit, ROI, sales revenue, advertisement expenditure, financial ratios and many more. A large number of researches emphasized on

the impact of advertising on sales volume. (Verdon, et al., 1968) studied the affiliation between advertisement expenses and aggregate demand and identified a positive and significant relationship in between of them. On the other hand, [Ekelund, et al., 1969] observed the association between advertising and aggregate consumption and recognized that there is no positive relationship between the examined variables.

According to (Taylor, et al., 1972), Advertising expenditure influences aggregate consumption and aggregate consumption influences advertising, that is showing a bi-directional causal relationship between the variables. (Abdullahi, D.,2015) studied on a Nigerian food and beverage firm and observed the effectiveness of advertising on the sales income and profitability. (Elliot, 2001) has studied the impact of advertising on sales for the food industry and identified that advertising expenses has a positive and significant influence on foods sale for this particular industry. Some study identified the correlation between sales and advertising expenditure which varied with the size of the company (Sharma, et al., 2014). During recessions, company struggles a lot for maintaining stability if a company can control its size and past sales, it can find a measurable relationship in between advertising expenditure and sales (Kamber, T. 2002). One study used bivariate Vector Autoregression (VAR) Model for measuring the effectiveness of Advertising expenses on sales volume (Pagan, et al., 2001).

(Al- Kassar, et al., 2014) said that, if you want to measure the financial performance mathematically, you have to understand the components like external and internal indicators. Among different financial ratio analysis, there are seven ratio's whose are most prominent, strong for analyzing the values of financial performance, namely: Sales/working capital, Sales/accounts receivable, Current assets /total liabilities, Current assets/current liabilities, Current liabilities/Total assets, Cash/current liabilities and Profit before tax/Current Liabilities, (Al-Kassar ,et al., 2012).

According to past studies, it was shown the relationships between different variables exists but here this study has tried to show the relationship between net profit and ROI with sales revenue, operating expenses, income tax and

investment. Moreover, it has been tried to measure financial performance of two reputed organization that is stable in their business sector. Some ideas have taken from past studies and tried to find the gap between us.

If it is thought about operating expenses, net profit, cost of goods sold, taxes, operating cash flows, they have significant relationship with each other which affect financial performance of any organization. (Khalid, W., et al., 2017) believe that operating expenses are significant to explain sales revenue and because of that the company must need to increase its advertising expenditures to increase the sales of the company. Researchers are concern about profit before expenses, like taxes and interest after all expenses. Profits can be categorized like gross profit, operating profit, and net profit (Al Hayek, 2018). (Jordan et al. ,2007) studied "An Analysis of the Comparative Predictive Abilities of Operating Cash Flows, Earnings, and Sales" and it showed that the operating cash flows provided the weakest clarifying power; both the earnings and sales models produced statistically significant outputs. Revenue reflects the growth of the assets (Al Qashi , et al., 2015). According to (Ball et al., 2016), The cost of goods sold is one of the largest expenses to be conducted from revenue. As it is huge, it draws the attention of the management and analysts (Foerster et al., 2016). Income which we get through main operation is a key indicator of the overall operating performance of the company, (Ball et al., 2016). Net Profit is a general indicator of the company's profitability performance (Heikal et al., 2014). The aim of these companies is investing more on assets and to get maximum profitability so that they can increase their share in market (Ajanthan, 2013). (Fida et al., 2016) said that, income is closely related to the cash flow of the project.

Regression is an influential statistical method used in education, finance, investing and other disciplines that allow assessing the relationships between one dependent variable and one or more independent variable (Nguyen, J. 2021). That study also verified that Simple linear regression uses one independent variable to predict the outcome of the dependent variable whereas multiple linear regressions use two or more independent variables to predict the outcome of the dependent variable. (Khalid, W., et al., 2017) used linear regression model to inspect the impact of operating and financial

expenses on sales revenue of the Fauji Fertilizer Company Limited in Pakistan and they used a time series data set which covered from the period 2002-2015. Multiple regressions is a powerful technique used for foreseeing the unidentified value of a variable from the identified value of two or more variables- also called the predictors (Khaing, Y. M. et al., 2019).

In this study, single and multiple regression analysis are used for both companies and it is observed that the correlation between dependent variable and independent variable is medium and poor for using simple regression technique. It also has been identified that the correlation is positively high for Unilever whereas it is positively medium for Nestle Company if multiple regression analysis is applied instead of simple regression. Results of this study is significant but for more validity hypothesis analysis has been done and it shows that there is a statistically significant relationship between net profit and return on investment with sales revenue, operating expenses, income tax and investment using multiple regression technique.

3. Methodology of this Research

This study adopts the analytical approach through addressing the concept of the relationship of net profit and return on investment with sales revenue, operating expenses, income tax and investment, using the necessary scientific knowledge about the various aspects of the study by reference to previous studies and scientific references. The statistical regression techniques are used to analyze the data of the study based on the data of the relevant companies Unilever and Nestle for the period (2005-2020). Using the hypothesis test the analytical technique is validated of this research. In this section, data collection method and methods and variables selection are discussed for research findings.

3.1. Data Collection Method

The data used in this paper for the empirical investigation is collected from online secondary data sources. Data is obtained for 2 renowned multinational food companies such as Unilever and Nestle of the world for the time period 2005 to 2020. The collected dataset has been taken from the company's annual financial statements and accounts reported on the last day of the month

of December every year. The links of online data sources are https://www.macrotrends.net/stocks/charts/UL/unilever/financial-statements and https://www.macrotrends.net/stocks/charts/NSRGY/nestle-sa/financial-statements. The value of data is considered in million dollar for both companies.

3.2. Methods and variables selection

Data is analyzed using two techniques such as simple regression analysis and multiple regression analysis. The available dataset used in this paper for the empirical analysis consists of the annual observations on net profit, return on investment, sales revenue, operating expenses, income tax and investment of Unilever and Nestle Company Limited over the period 2005-2020. In this study, data is gathered in respect of 6 variables out of which 4 are taken as financial performance determinants and 2 as financial performance indicators. The financial performance determinants are considered as independent variables included sales revenue, operating expenses, income tax and investment while the financial performance indicators are considered as dependent variables included net profit and return on investment in this analysis. When using regression techniques to forecast financial performance, it is important to determine the appropriate mathematical model that explains the relationship between or among the variables of interest.

3.2.1. Simple regression analysis

The pattern of the functional nature of the relationship that exists between two variables as dependent and independent variable is shown in simple regression analysis. In such analysis, six variables are taken for calculation in which net profit is the dependent variable (Y), while sales revenue or operating expenses or, income tax or investment is the independent variable (X) individually. The same relationship is followed when return on investment is dependent variable as like as net profit. The linear relationship between two variables Y and X at period t is expressed by the following straight line:

$$Y_t = a + bX_t + \varepsilon_t$$

Where a and b are denoted as regression constant and coefficient respectively. The term ε_t is representing as an error at period t in the equation.

3.2.2. Multiple regression analysis

The advantage of multiple regression over simple regression analysis is in enhancing our research findings to use more available information in forecasting the dependent variable considering more than one independent variables. In such analysis, six variables at period *t* are taken for the empirical investigation in which net profit or return on investment is the dependent variable (Y_t), while sales revenue (X_{1t}), operating expenses (X_{2t}), income tax (X_{3t}) and investment (X_{4t}) are the independent variables. The multiple regression equation at period *t* is expressed as:

$$Y_t = a + b_1X_{1t} + b_2X_{2t} + b_3X_{3t} + b_4X_{4t} + \varepsilon_t$$

Where regression constant and regression coefficients are denoted as a and (b_1, b_2, b_3, b_4). The term ε_t is representing as an error at period t in the equation.

For validity of the analysis, a hypothesis test is performed to determine whether there is a significant relationship among the dependent variable Y and the independent variables X_1, X_2, X_3 and X_4. The F test that is stated to determine whether there is a significant relationship between the dependent and independent variables does not specify which variable is significant. While it performs that at least one of the regression coefficients is not equal to zero, it does not indicate which coefficient is statistically significant. Business analysts are usually interested in knowing whether the individual regression coefficients are significant. In that case, the *t* test allows us to perform a test of significance on each individual regression coefficient.

4. Research Findings

Regression analysis is a powerful statistical method used in business to forecast the financial performance of a company that allows estimating the relationships between one dependent variable and one or more independent variables. Forecasting the financial performance of a company it is important to analyze the effects of sales revenue, operating expenses, income tax and investment on profit and return on investment. To perform this analysis, the correlation coefficient, ANOVA and hypothesis test are shown using regressions techniques such as simple regression and multiple regression in this section.

4.1. Forecasting Financial Performance using simple regression for Unilever

By regressing the company's net profit as dependent variable (*Y*) with its independent variable (*X*) individually as sales revenue or operating expenses or income tax or investment using the collected data, it yields the expected value of parameters estimated. All the coefficients of independent variable individually have a positive sign except investment of Unilever. This means that an increase in the sales revenue or operating expenses or income tax has an increase in net profit of a company but investment has an negative impact on net profit in a result.

Independent variable	R	R^2	Intercept	Coefficient	Standard error	t value	F value	P value
Sales /Revenue	0.52	0.27	-3183	0.16	1377	2.3	5.2	0.039
Operating Expenses	0.14	0.019	3806	0.052	1597	0.52	0.27	0.61
Income tax	0.83	0.69	384	2.77	892	5.63	31.7	6.20E-05
Investment	0.14	0.02	7268	-0.037	1596	-0.54	0.29	0.59

Table 1: Net Profit as dependent variable

It is seen from Table 1, the value of R^2 is found to be .0.69 which shows that the model is moderately fit for net profit and income tax because correlation of this range (25% to 70%) between dependent and independent variable is considered a moderate correlation. The result shows that the calculated t-

statistic value is (5.63) of income tax as independent variable and is statistically significant at 1% and 5% level of significance. The significance of the p-value is 0.000 which indicates that the model is statistically significant at 1% and 5% level of significance only for income tax.

It is also seen from Table 1, the value of R^2 of sales revenue or operating expenses or investment with net profit interprets poor correlation between independent and dependent variable. The F-value and t-static value is less than significant value and null hypothesis is accepted which indicates that the model is not statistically significant at 1% and 5% level of significance.

Independent variable	R	R^2	Intercept	Coefficient	Standard error	t value	F value	P value
Sales /Revenue	0.022	0.0005	34.8	-7.04E-05	16.2	-0.08	0.007	0.93
Operating Expenses	0.39	0.16	106.1	-0.0015	14.8	-1.6	2.6	0.12
Income tax	0.45	0.2	-2.1	0.015	14.4	1.9	3.6	0.079
Investment	0.75	0.57	76.5	-0.002	10.6	-4.3	18.3	0.00076

Table 2: Return on investment as dependent variable

Table 2 tests the value of R^2 is found to be .0.57 which shows that the model is moderately fit for return on investment and company investment because correlation of this range (25% to 70%) between dependent and independent variable is considered a moderate correlation. The result shows that the calculated t-Statistic value is (-4.3) in investment as independent variable and is statistically significant at 1% and 5% level of significant. The estimated F-value is larger than significant F-value and P- value is very small which indicates that the model is statistically significant at 1% and 5% level of significance only for investment of Unilever.

It is also observed from Table 2, the value of R^2 of sales revenue or operating expenses or income tax with return on investment interprets poor correlation between independent and dependent variables. The estimated F-value and t-static value are less than significant value respectively and null hypothesis is

accepted which indicates that the model is not statistically significant at 1% and 5% level of significance.

	Sales /Revenue	Operating Expenses	Income tax	Investment
Sales /Revenue	1			
Operating Expenses	0.91	1		
Income tax	0.67	0.37	1	
Investment	0.46	0.67	0.0035	1

Table 3: Correlation Matrix of independent variables

A correlation of more than (70%) between two independent variables is considered a high correlation. It is observed from above Table 3 that the correlation coefficient values between the independent variables are 91% and it interprets high correlation between sales revenue and operating expenses. This also indicates that there is no high correlation between other independent variables in the results of the regression analysis.

4.2. Forecasting Financial Performance using simple regression for Nestle

By regressing the company's net profit as dependent variable (*Y*) with its independent variable (*X*) individually as sales revenue or operating expenses or income tax or investment using the collected data, it yields the expected value of parameter estimated. All the coefficients of independent variables individually have a positive sign of Nestle Company. This means that an increase in the sales revenue or operating expenses or income tax or investment has an increase in net profit of the company in a result.

Independent variable	R	R^2	Intercept	Coefficient	Standard error	t value	F value	P value
Sales /Revenue	0.64	0.4	-33983	0.5	5172	3.1	9.4	0.008
Operating Expenses	0.6	0.36	-31396	0.55	5361	2.8	7.8	0.014
Income tax	0.24	0.055	5267	3.25	6502	0.91	0.82	0.34
Investment	0.065	0.0042	10221	0.03	6676	0.24	0.06	0.81

Table 4: Net Profit as dependent variable

It is seen from Table 4, the value of R^2 is found to be 0.4 and 0.36 for independent variables as sales revenue and operating expenses respectively which shows that the model is moderately fit with dependent variable as net profit because correlation of this range (25% to 70%) between independent and dependent variable is considered a moderate correlation. The result shows that the calculated t-Statistic value is (3.1) of sales revenue as independent variable and is statistically significant at 1% and 5% level of significance. The calculated F-value, 9.4 and 7.8 are larger than significant F-value and estimated p-value is small for independent variable as sales revenue and operating expenses respectively which indicates that the model is statistically significant at 5% level of significance.

It is also seen from Table 4, the value of R^2 of income tax or investment with net profit interprets poor correlation between independent and dependent variable. The F-value and t-static value is less than significant vale and null hypothesis is accepted which indicates that the model is not statistically significant at 1% and 5% level of significance.

Independent variables	R	R^2	Intercept	Coefficient	Standard error	t value	F value	p value
Sales /Revenue	0.22	0.045	3.5	0.00013	4.7	0.85	0.72	0.41
Operating Expenses	0.19	0.037	5	0.00013	4.9	0.74	0.54	0.47
Income tax	0.24	0.058	10.1	0.0025	4.8	0.93	0.86	0.36
Investment	0.34	0.12	23.9	-0.00012	4.7	-1.4	1.9	0.19

Table 5: Return on investment as dependent variable

It is also observed from Table 5, the value of R^2 of sales revenue or operating expenses or income tax or investment with return on investment interprets poor correlation between independent and dependent variable. The estimated F-value and t-static value of independent variable individually are less than significant value respectively and null hypothesis is accepted which indicates

that the model is not statistically significant at 1% and 5% level of significance.

	Sales /Revenue	Operating Expenses	Income tax	Investment
Sales /Revenue	1			
Operating Expenses	0.97	1		
Income tax	0.58	0.54	1	
Investment	0.47	0.46	0.72	1

Table 6: Correlation Matrix of independent variables

A correlation of more than (70%) between two independent variables or more is considered a high correlation. The above Table 6 shows that the correlation coefficient values between the independent variables are more than 70% for sales revenue and operating expenses. This also indicates that there is no high correlation between other independent variables in the results of the regression analysis.

While dealing with the multiple regression analysis, one of the main assumptions is that there is no perfect linear relationship between or among the independent variables in the model. For such a reason, a correlation matrix is obtained which reveals the strength of the relationship between different pairs of variables included in the model. Table 3 and table 6 report that all the variables are positively correlated with each other. Though, it can be depicted that only sales revenue is highly correlated with the operating expenses of Unilever and Nestle companies. It is also observed that simple regression analysis is not applicable to forecast the financial performance of both companies and for this reason multiple regression analysis is glimpsed in the next section.

4.3. Forecasting Financial Performance using Multiple Regression for Unilever

The model of the study measures the relationship between independent (Sales Revenues, operating expenses, income tax and investment) and dependent variables (net profit or return on investment), since the relationship between a set of independent variables and the dependent variable, the appropriate regression model for measuring this relationship is multiple Regression model. Having verified the suitability of the data for statistical analysis, a hypothesis test, is done. In order to estimate the relationship between the financial performance determinants as independent variables and financial performance indicator as dependent variable for forecasting financial performance of Unilever, excel data analysis is used. The following table shows the analysis of this research:

Regression Statistics	
Multiple R	0.9812392
R Square	0.9628304
Adjusted R Square	0.9493142
Standard Error	350.72831
Observations	16

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	35050656	8762664	71.2352	8.6E-08
Residual	11	1353114	123010		
Total	15	36403769			

	Coefficients	*Standard error*	*t Statistic*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	2340.4141	1240.857	1.88613	0.08594	-390.69	5071.5224	-1513.448	6194.276
X Variable 1	0.8699464	0.104129	8.35452	4.3E-06	0.64076	1.0991324	0.5465425	1.19335
X Variable 2	-0.966183	0.112795	-8.5659	3.4E-06	-1.2144	-0.717924	-1.316501	-0.61587
X Variable 3	-0.372835	0.460102	-0.8103	0.43493	-1.3855	0.6398425	-1.801822	1.056152
X Variable 4	0.0759423	0.024163	3.14286	0.00936	0.02276	0.1291257	0.0008955	0.150989

Table 7: Regression statistics, ANOVA, coefficient and significance value for net profit as dependent variable

Table 7 shows a statistically significant correlation at 1% and 5% level of significant between the independent variables combined with the net profit. The correlation coefficient (98%) is statistically significant and indicates a strong correlation. The adjusted R Square interprets 95% of the variance in the dependent variable, which means that (95%) of changes in net profit to the change in the independent variables such as Sales Revenues, operating expenses, income tax and investment. The p-value of the F-statistic is 0.00%, which is less than 1% and 5% level of significant, confirming that all independent variables jointly can influence the net profit of the company. Consequently, this result performs the null hypothesis is rejected and the alternative hypothesis is accepted because of significant correlation. The interpretations of these results suggest that for each one million dollar increase in sales revenue and investment, the net profit of the company increase by 0.87 million dollar and 0.076 million dollar, correspondingly. The other coefficient values indicate that for one million dollar increase in operating expenses and income tax, the net profit of the company decrease by 0.97 million dollar and 0.37 million dollar respectively because of negative coefficient.

The hypothesis test shows that the calculated t-Statistic values of X_1, X_2 and X_4 variables are larger than significant t-value which are statistically significant at 1% and 5% significant level. Moreover, the probability (p) values of X_1, X_2 and X_4 variables are very small which are less than 1% and 5%, meaning that these X_1, X_2 and X_4 are highly significant variables to influence the dependent variable as net profit. In exceptional case of X_3 variable, the p-value is 43.5%, which is more than 1% and 5%, showing that this X_3 as income tax is not significant to influence net profit of Unilever. At

last, it confirms the significance of the model and indicates a statistically significant relation between the independent variables as sales revenue, operating expenses, investment and the dependent variable (net profit). Another independent variable, income tax, will be dropped from the analysis.

Regression Statistics	
Multiple R	0.966316087
R Square	0.933766779
Adjusted R Square	0.909681971
Standard Error	4.700863811
Observations	16

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	3426.9721	856.743	38.7699	2E-06
Residual	11	243.07933	22.09812		
Total	15	3670.0514			

	Coefficients	*Standard error*	*t Statistic*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	51.920173	16.631393	3.121	0.00972	15.3147	88.5256	0.2662837	103.57406
X Variable 1	0.00713699	0.0013957	5.113	0.00034	0.00407	0.01021	0.0028024	0.0114716
X Variable 2	-0.00789602	0.0015118	-5.222	0.00028	-0.0112	-0.0046	-0.012591	-0.003201
X Variable 3	-0.01087655	0.0061668	-1.763	0.1055	-0.0244	0.0027	-0.030029	0.0082764
X Variable 4	-0.00107089	0.0003239	-3.306	0.007	-0.0018	-0.0004	-0.002077	-6.5E-05

Table 8: Regression statistics, ANOVA, coefficient and significance value for return on investment as dependent variable

Table 8 shows a statistically significant correlation at 1% and 5% level of significant between the independent variables combined with the net profit. The correlation coefficient (96%) is statistically significant and indicates a strong correlation. The adjusted R Square interprets 91% of the variance in the dependent variable, which means that (91%) of changes in return on investment to the change in the independent variables such as Sales Revenues,

operating expenses, income tax and investment. The p-value of the F-statistic is 0.00%, which is less than 1% and 5% level of significant, confirming that all independent variables jointly can influence return on investment of the company. Consequently, it can be concluded that the null hypothesis is rejected because there is a significant correlation among the dependent variable and the independent variables so the alternative hypothesis is accepted.

The interpretations of these results suggest that for each one million dollar increase in sales revenue, return on investment of the company increase by 0.0071 million dollar. The other coefficient values indicate that for one million dollar increase in operating expenses income tax and investment, return on investment of the company decrease by 0.0079, 0.011 million dollar and 0.0011 million dollar respectively because of negative coefficient.

The hypothesis test shows that the calculated t-Statistic values X_1, X_2 and X_4 variables are larger than statistically significant at 1% and 5% significant level. Moreover, the probability values of X_1, X_2 and X_4 variables are very small which are less than 1% and 5%, meaning that these X_1, X_2 and X_4 are highly significant variables to influence the dependent variable as return on investment. Exceptionally, the p-value of X_3 variable is 10.5%, which is more than 5%, showing that this X_3 as income tax is not significant variable to influence the dependent variable. At last, It confirms the significance of the model and indicates a statistically significant relation between the independent variables as sales revenue, operating expenses, investment and the dependent variable (return on investment). Another independent variable, income tax, will be dropped from the analysis.

4.4. Forecasting Financial Performance using Multiple Regression for Nestle

In order to analyze the relationship between the financial performance determinants Sales Revenues, operating expenses, income tax and investment as independent variables and financial performance indicator (net profit or return on investment) as dependent variable for forecasting financial performance of nestle, excel data analysis is used. The following table glimpses the results of this study:

Regression Statistics	
Multiple R	0.6957213
R Square	0.48402812
Adjusted R Square	0.29640199
Standard Error	5422.10736
Observations	16

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	303370590.7	75842648	2.579748	0.09620106
Residual	11	323391730.3	29399248		
Total	15	626762321			

	Coefficients	Standard error	t Statistic	P-value	Lower 95%	Upper 95%	Lower 99.0%	Upper 99.0%
Intercept	-34016.8344	16371.69	-2.07778	0.06193	-70050.68	2017.0	-84864	16830.4773
X Variable 1	1.00232236	0.848527	1.1812	0.26241	-0.865273	2.8699	-1.633	3.63768438
X Variable 2	-0.4660018	0.964048	-0.4833	0.63830	-2.587856	1.6558	-3.4601	2.52814331
X Variable 3	-0.32961478	4.827214	-0.0682	0.94678	-10.95424	10.295	-15.322	14.6627781
X Variable 4	-0.13167659	0.146678	-0.8977	0.38856	-0.454513	0.1911	-0.5872	0.32387798

Table 9: Regression statistics, ANOVA, coefficient and significance value for net profit as dependent variable

Although Table 9 shows moderate correlation between dependent variable as net profit and independent variables combined, the p-value of the F-statistic is 0.096 which is larger at 5% level of significance and confirming that all independent variables jointly do not influence the net profit of the company. To summarize the findings in Table 9, it can be interpreted that the null hypothesis is accepted because the dependent variable and independent variables are not significantly correlated.

Regression Statistics	
Multiple R	0.81453537
R Square	0.66346787
Adjusted R Square	0.54109256

Standard Error	3.26692462
Observations	16

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	231.4538	57.86345	5.421582	0.01164159
Residual	11	117.4008	10.6728		
Total	15	348.8545			

	Coefficients	*Standard error*	*t Statistic*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	10.451164	9.864262	1.059	0.312084	-11.2599	32.162	-20.185	41.087653
X Variable 1	0.00010154	0.000511	0.198	0.846186	-0.00102	0.0012	-0.0015	0.001689
X Variable 2	2.2167E-05	0.000581	0.038	0.970241	-0.00125	0.0013	-0.0018	0.0018261
X Variable 3	0.00971943	0.002908	3.341	0.006573	0.003317	0.0161	0.00069	0.0187526
X Variable 4	-0.00038699	8.84E-05	-4.378	0.001101	-0.00058	-0.0002	-0.0007	-0.0001125

Table 10: Regression statistics, ANOVA, coefficient and significance value for return on investment as dependent variable

Table 10 shows a statistically significant correlation at 5% level of significant between the independent variables combined with return on investment. The correlation coefficient (81%) is statistically significant and indicates a strong correlation. The adjusted R Square interprets 54% of the variance in the dependent variable, which means that (54%) of changes in return on investment to the change in the independent variables such as Sales Revenues, operating expenses, income tax and investment. The p-value of the F-statistic is 0.00%, which is less 5% level of significant, confirming that all independent variables jointly can influence return on investment of the company. Therefore, the null hypothesis is rejected that means there is a significant correlation among the dependent and independent variables so the alternative hypothesis is accepted.

The interpretations of these results suggest that sales revenue, operating expenses and income tax, has positive impact on return on investment of the company. The other coefficient value indicates that investment has negative effect on return on investment because of negative coefficient.

The hypothesis test shows that the calculated t-Statistic values X_3 and X_4 variables are larger than statistically significant at 1% and 5% significant level. Moreover, the probability values of X_3 and X_4 variables are very small which are less than 1% and 5%, meaning that these X_3 and X_4 are highly significant variables to influence the dependent variable as return on investment. Similarly, the p-value of X_1 and X_3 variables are larger than 5%, showing that this X_1 and X_3 are not significant to influence the dependent variable. So sales revenue and income tax will be dropped from the forecasting.

4.5. A Comparative Financial Performance Analysis of Unilever and Nestle

In reviewing the above results of regression coefficients for Unilever, the estimated t- static values of all variables except income tax are less than at 1% and 5% level of significant. This confirms the significance of the regression coefficients and indicates that the financial performance determinants have the effects on forecasting financial performance indicator. This analysis also established that the correlation between financial performance indicator and financial performance determinants is positively high. Hence, the estimated multiple regression equation can be configured to forecast net profit of Unilever as follows:

$$(\text{Net profit})_t = 2340.4 + 0.87(\text{sales revenue})_t - 0.97(\text{Operating expenses})_t - 0.37(\text{income tax})_t + 0.076(\text{Investment})_t + 1240 \quad \text{[Unilever company]}$$

In case of Nestle company, the above result shows moderate correlation between dependent variable as net profit and independent variables combined, the p-value of the F-statistic is 0.096 which is larger at 5% level of significance and confirming that all independent variables jointly do not influence the net profit of Nestle for forecasting financial performance. The

estimated multiple regression equation which is not applicable to forecast net profit of Nestle as follows:

$(\text{Net profit})_t = -34016.8 + 1.002(\text{sales revenue})_t - 0.47(\text{Operating expenses})_t - 0.33(\text{income tax})_t + 0.13(\text{Investment})_t + 16371.7$ [Nestle company]

The above findings of regression analysis indicate the high correlation between the performance determinants and return on investment of Unilever. The p-value of the F-statistic is 0.00%, which is less than 1% and 5% level of significant, confirming that all financial performance determinants jointly can influence to forecast return on investment of Unilever.

$(\text{Return on investment})_t = 51.9 + 0.007(\text{sales revenue})_t - 0.0079(\text{Operating expenses})_t - 0.0108(\text{income tax})_t - 0.0107(\text{Investment})_t + 16.6$ [Unilever]

In case of return on investment of Nestle company, the above result relates moderate correlation between dependent variable return on investment and independent variables combined. The p-value of the F-statistic is 0.011%, which is less than at 5% level of significant, and confirming that all independent variables jointly influence return on investment of Nestle for forecasting financial performance. The estimated multiple regression equation of Nestle which is suggested to forecast return on investment of Nestle as follows:

$(\text{Return on investment})_t = 10.45 + 0.0001(\text{sales revenue})_t + 0.00002(\text{Operating expenses})_t + 0\ .0097(\text{income tax})_t - 0.00004(\text{Investment})_t + 9.8$ [Nestle]

Except investment all financial performance determinants sales revenue, operating expenses and income tax have positive effects on return on investment of Nestle company. On the other hand, it is glimpsed that except sales revenue all financial performance determinants operating expenses, income tax and investment have negative effects on return on investment of Unilever.

5. Conclusions

In this research work, regression techniques as simple and multiple regression model have been considered to inspect the impact of sales revenue, operating expenses, income tax and investment on net profit and return on investment of Unilever and Nestle Company Limited using a time series dataset covering the period 2005-2020. After analyzing both techniques it has been interpreted that multiple regression model has been well fitted instead of simple regression model in case of both companies. The multiple regression model has been used to estimate regression statistics, ANOVA, coefficient and significance of financial performance determinants and its effects on financial performance indicator to forecast net profit and return on investment of Unilever and Nestle.

This analysis also established that the correlation between financial performance indicator and financial performance determinants has been found positively high for Unilever whereas the medium correlation has been observed for Nestle company. The p-value of the F-statistic has been satisfied at 1% and 5% level of significant, confirming that all financial performance determinants jointly have influenced to forecast net profit and return on investment of Unilever. In case of Nestle, the p-value of the F-statistic has been accepted at 5% level of significant, confirming that all independent variables jointly have influenced return on investment of the company but for net profit the F- static has been not significant.

Over this time series analysis, some results have been documented by means of empirical implications. First, the interpretations of these results have been suggested that for each one million dollar increase in sales revenue and investment, the net profit of the company has been increased by 0.87 million dollar and 0.076 million dollar, correspondingly in case of Unilever. The other coefficient values have been indicated that for one million dollar increase in operating expenses and income tax, the net profit of the company has been decreased by 0.97 million dollar and 0.37 million dollar respectively because of negative coefficient. Second, the estimated multiple regression equation which is not applicable to forecast net profit of Nestle. Third, except investment all financial performance determinants sales revenue, operating

expenses and income tax have positive effects on return on investment of Nestle company. On the other hand, it has been glimpsed that except sales revenue all financial performance determinants operating expenses, income tax and investment have negative effects on return on investment of Unilever.

Although assessment of financial performance indicators, net profit and return on investment of a company is critical but it is important to make decision about the financial statements as like as forecasting financial performance of that company because this gives the general direction of a firm in assessing its strength and weakness in comparison to other peers in the industry. In the above discussion about multiple regression analysis of forecasting financial performance it has been observed that net profit of Unilever has been increased by increasing of sales revenue and investment and decreasing of operating and other expenses that has indicated the strength of Unilever whereas it has showed weakness of Nestle. It has been also examined that investment has negative effects and sales revenue has positive effects on return on investment of both companies that has shown the weakness and strength in case of investment and sales revenue of that companies. Finally, it has been suggested for future research extending this study that the exponential smoothing forecasting technique can be applied in case of Nestle company instead of regression analysis.

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