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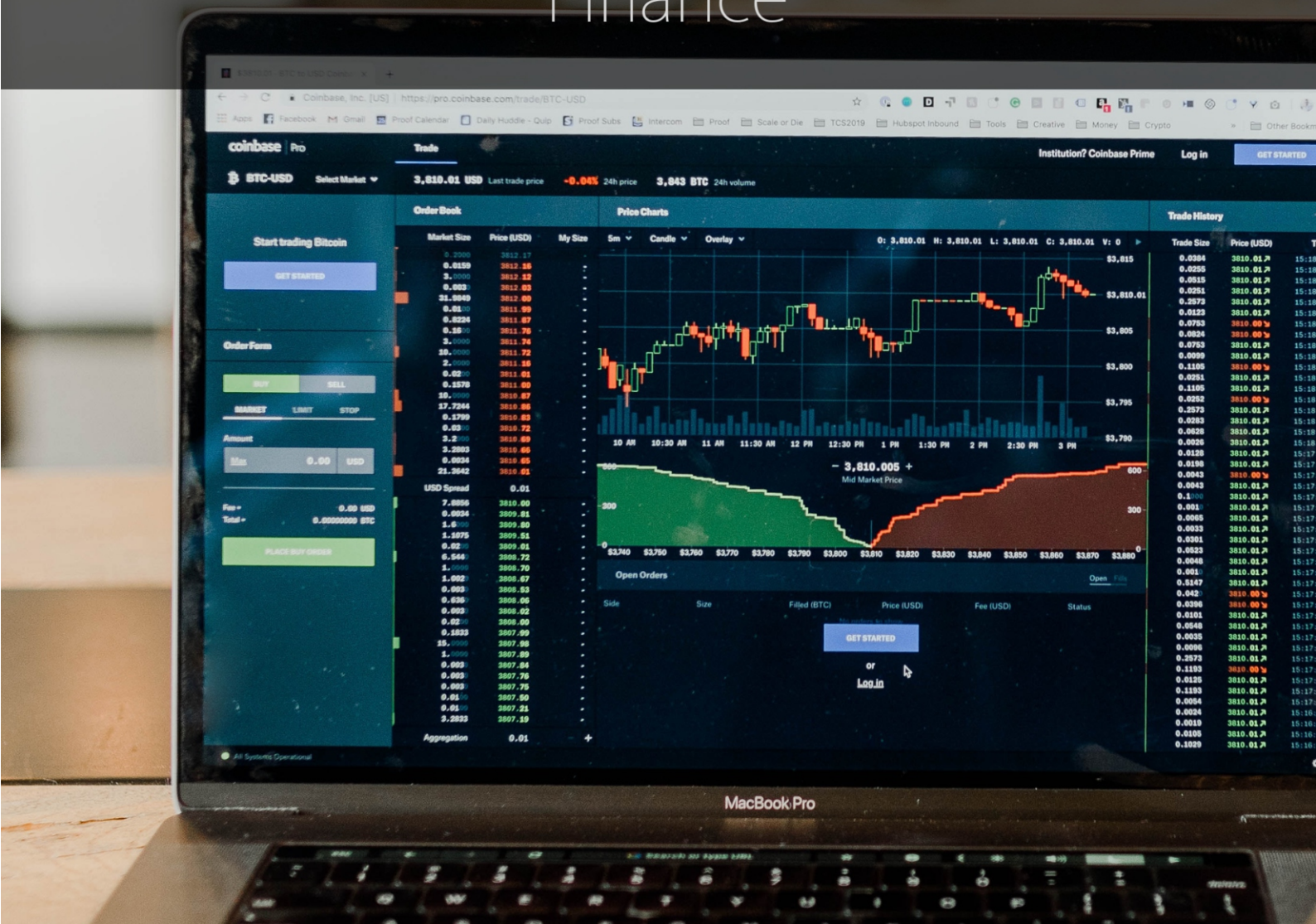

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Financing Constraints, Earning Quality and Investment Efficiency: Evidence from Africa

By Abdurahman Aliyi Ibrahim, Man Wang, Mussie Tesfaye & Lili Sugeng Wiyantoro
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Abstract- This study investigates the effect of financing constraints on investment efficiency in developing countries and how this relationship is conditional to the earning quality. We use the non-financial firms from 15 Africa countries from 2009 to 2018. We employed panel data analysis and classified the sample into a financially constrained and unconstrained firm to analyze this relationship. The results show that financing constraints affect investment efficiency; this effect is more pronounced in constrained firms than unconstrained firms. We evidenced that investment efficiency is more sensitive to cash flows for the financially constrained firm than the unconstrained firms. Our findings also posit that constrained firms are more likely to overinvest than unconstrained firms because of their internal cash flows. In contrast, unconstrained firms are more likely to under invest than constrained firms.

Keywords: Financial constraints, earning quality, investment efficiency, overinvestment, and underinvestment.

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Financing Constraints, Earning Quality and Investment Efficiency: Evidence from Africa

Abdurahman Aliyi Ibrahim [α], Man Wang [σ], Mussie Tesfaye [ρ] & Lili Sugeng Wiyantoro [ω]

Abstract- This study investigates the effect of financing constraints on investment efficiency in developing countries and how this relationship is conditional to the earning quality. We use the non-financial firms from 15 Africa countries from 2009 to 2018. We employed panel data analysis and classified the sample into a financially constrained and unconstrained firm to analyze this relationship. The results show that financing constraints affect investment efficiency; this effect is more pronounced in constrained firms than unconstrained firms. We evidenced that investment efficiency is more sensitive to cash flows for the financially constrained firm than the unconstrained firms. Our findings also posit that constrained firms are more likely to overinvest than unconstrained firms because of their internal cash flows. In contrast, unconstrained firms are more likely to under invest than constrained firms. Further, the results reveal that earning quality has a reducing effect on the relationship between financing constraints and investment efficiency—the firm with high earning quality can avoid financing constraints to finance their projects by avoiding overinvestment and underinvestment of both constrained and unconstrained firms. The result is robust to the alternative estimation techniques and different proxies. The findings suggest that financing constraints determine investment efficiency and signal that earning quality can avoid financing constraints and improve investment efficiency as a corporate governance tool. Hence, the financial policymakers and financial reporting regulators should give due attention to uphold the firm's reporting quality; thereby, firms can secure finance for their investment projects. We contribute to the corporate finance and corporate governance literature in three ways. First, it evidenced that firm investment efficiency level determined by its access to finance. Second, the study contributes to the literature by exposing that earning quality's governance role determines the effect of financing constraint on investment efficiency. Third, since the first to study a data set from Africa, we believe it has a valuable contribution to the literature by showing that financing constraints on the firm's investment efficiency and the conditional effect of the firm's earnings quality.

Keywords: Financial constraints, earning quality, investment efficiency, overinvestment, and underinvestment.

I. Introduction

The importance of investment has two folds; first, at the macroeconomic level, investment is a crucial factor in the growth of the economy, its fluctuations drive much of the business cycle in the marketplace, and the aggregate business investment is a component of real GDP (Rudiger et al., 2011). Second, at the microeconomic-level, the investment decision facilitates allocating the firm resources to the available projects efficiently. These implied that investment decision is a crucial factor in allocating the firm's resources in growth opportunities.

In accounting and corporate governance research, efficient investment decisions have received scholars' attention since the inception of modern corporate finance (Modigliani and Miller, 1958). Many theoretical and empirical research carried out and continued investigating the allocation of resources in business firms. Under the theory of investment, Modigliani and Miller (1958) argue that firms are expected to invest in projects that create positive net present value. They postulated that capital projects with positive net present value (hereafter NPV) funded projects with negative NPV rejected.

The neoclassical investment theory model also assumes capital investment decisions determined by marginal q ratios (Abel, 1983, Hayashi, 1982, Yoshikawa, 1980). Yoshikawa (1980) noted that the neoclassical theory of corporate investment based on the assumption that the management seeks to maximize the present net worth of the company, the market value of the outstanding common shares, and an investment project should be undertaken if and only if it increased the value of the shares. Ferracuti and Stubben (2019) also noted, in the frictionless world (Modigliani and Miller, 1958), a firm investment decision is influenced only by the profitability of its investment opportunities.

However, in the contemporary-world variety of factors prevent this outcome, and many researchers linked different variables to firm investment efficiency (Stein, 2003, Hubbard, 1998). Such as; financing constraints (Hirth and Viswanatha, 2011, Cleary *et al*., 2007, Alti, 2003, Cleary, 1999, Fazzari *et al*., 1988, Whited and Wu, 2006, Guariglia, 2008), board characteristics (Agyei-Mensah, 2021a), and board diversity (Ullah *et al*., 2020), information friction (Stein, 2003), firm's earning quality or financial reporting quality (Chen *et al*., 2011, Li and Wang, 2010, Biddle *et al*., 2009, Verdi, 2006, Graham *et al*., 2005, Bushman and Smith, 2001), corporate disclosure (Östberg, 2006, Kanodia and Lee, 1998), and gender diversity (Ullah *et al*., 2020).

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Researchers have shown that financing constraints are the essential factors that impair the efficiency of investment. Mainly, but perhaps the most pervasive and essential factors influencing corporate investment decisions' efficiency arise from informational asymmetries and agency problems (Stein, 2003), resulting in financing constraints. Because of information asymmetry, the firm faces a lack of finance to the available investment projects, which results in two investment inefficiency scenarios, namely overinvestment and underinvestment. We also argue that financing constraints affect firm investment efficiency.

On the other hand, earning quality (along with financial reporting quality attributes) as a corporate governance mechanism mitigates the information asymmetries and resolve agency problem (Muttakin *et al*., 2020, Mansali *et al*., 2019, Cherkasova and Rasadi, 2017, Lin *et al*., 2016, Wang *et al*., 2015, Li, 2011, Chen *et al*., 2011, Biddle et al., 2009, Verdi, 2006, Biddle and Hilary, 2006, Nasr and Ntim, 2018, Ebaid, 2013, Asghar *et al*., 2020). Firms with high earning quality could mitigate financing constraints and increase their external finance access to fund their investment opportunities. In this case, we argue that earning quality could act as a moderating variable in the relation between firms financing constraints and investment efficiency.

Despite several studies investigating the relationship between financial constraint and investment decision, there are limited studies conducted on African firms. We rarely see studies investigating how the firm's earning quality can mitigate financing constraints on investment efficiency, especially for the African data set. Thus, this study analyzes the relation between firm financing constraints and investment efficiency among African firms. We also investigate the influence of financial constraints on the two inefficient investment scenarios: overinvestment and underinvestment. In further, we examine how the earning quality of the firm determines this relationship. We investigate the earning quality as a moderating variable on the relationship between financing constraints and investment efficiency.

Using samples of non-financial firms from 15 African countries, we evidenced that financing constraints affect investment efficiency in both overinvestment and underinvestment scenarios, and investment efficiency is strongly sensitive to internal cash flow. The findings also indicate that investment efficiency is sensitive to cash flow when the firms are externally constrained, and they use internal cash flow to make their investment. The result is more pronounced in financially constrained firms than unconstrained firms. The evidence showed that financially constrained firms showed highly inefficient investment while the unconstrained firms are more efficient. In further, the results reveal that the relationship between financing constraints conditional to the earning quality. A firm with high earning quality can reduce financing constraints and manage in getting finance for their investment opportunities, whereas firms with low earning quality could not.

Moreover, the sensitivity of investment efficiency is conditional to the earning quality. The firm with high earning quality less sensitive to internal cash flow because they would get external finance than firms with low earning quality. These results hold for the two inefficient investment scenarios, overinvestment and underinvestment.

We contribute to the literature in four ways; first, this study links corporate finance and corporate governance theories by showing how corporate governance tools, namely corporate financial disclosure (earning quality), could play a role in easing financing constraint effects on firm investment decisions. Second, we contributed to the literature by showing how financial constraints and accounting quality impact the two investment inefficiency scenarios, overinvestment, and underinvestment using the Africa data set where prior studies were overlooked to investigate. Third, the study gives a signal showing that earning quality, as a corporate governance tool, can avoid financing constraints and improve investment efficiency. We believe this crucial addition to the literature shows evidence from the developing world where prior studies concluded that the value relevance of financial reporting quality is non-existent. Fourth, since the first to study a data set from Africa, we believe it has a valuable contribution to the literature by showing that the effect of financing constraints is conditional to the firm's earning quality. We contribute to the literature by evidencing that earning quality could mitigate overinvestment and underinvestment using data set from developing countries. We break this conclusion by showing that accounting information has excellent relevance in firm economic (investment) decisions in developing countries as it does for advanced nations. The result is robust to the alternative measurement of investment efficiency using Chen et al. (2011) and Chen and Lin (2013).

The paper's remaining part is organized as follows; Section 2 discusses literature review and hypotheses development. Section 3 describes the research methodology. Then, section 4 presents the results and discussion. Finally, section 5 is conclusions.

II. Review of Literature and Hypothesis Development

a) *Financing constraints and investment efficiency*

Prior studies explored that financing constraints affect firm investment behavior (Schauer *et al*., 2019, Cleary, 1999, Whited, 1992, Fazzari *et al*., 1988). In their pioneered work, Fazzari *et al*. (1988) point out that the

firm's financial status determines the investment. They found firms with limited external finance use internal cash flows to finance their investment projects.

Modigliani and Miller (1958) assumed that investment only depends on its profitability in the frictionless world. Their model assumes that external and internal finance entirely substitute. When firms face difficulty in raising external finance, they use internal funds to finance their investment project. However, Fazzari *et al*. (1988) showed that internal and external capital is not entirely substituted. In their view, investment depends on internal finance availability, access to external finance, or credit markets' functioning. They measure a firm's financial constraints based on the dividend payout, age, size, and credit as eternal financial constraints proxies. Guariglia (2008) also points out that firm age, size, and dividend payout are proxies for the degree of external financial constraints faced by the firms.

The effects of financial status on investment vary with the accessibility to external finance and internal funds available for investment opportunities. For instance, (Guariglia, 2008, Cleary *et al*., 2007, Lu, 2017) showed that firms' investment responds differently to internal and external financing constraints. Guariglia (2008) studied the extent to which the sensitivity of investment to cash flow using the panel data of UK firms over the period 1993–2003 and found that the response of investment to internal funds is different from that of external finance.

Bond *et al*. (2003) empirically investigated the effect of financial factors on investment in four European countries. They found that financial constraints on investment are severe in the more market-oriented company. They concluded that internal finance availability appears to have been a more significant constraint on company investment in the more market-oriented country. Mulier *et al*. (2016) noted that a firm is financially constrained if its internal fund's generation limits its investment because it cannot obtain sufficient external funds. These imply that when firms unable to raise external capital because of associated costs, they look internally to finance their investment and uses internal cash flows. Since the internal fund might not be good enough to fund the investment opportunities, they forego the available investment projects.

On the other hand, agency theory argues that firms with ample funds could deviate from their optimal investment efficiency level due to information asymmetry by overinvesting in unprofitable projects (Myers, 1977). As a result, firms face underinvestment or overinvestment in their investment decision. Hovakimian and Hovakimian (2009) have also shown that the limited accessibility of external funds intensifies the sensitivity of investment to the cash flow. So, based on the above analysis, we propose the following hypotheses;

H1: The relationship between cash flow and investment efficiency level is positive for the total sample and the constrained and unconstrained firm.

Since we also need to investigate that the effect of financing constraints the two suboptimal investment efficiency, as an extension of the central hypothesis, we posit the following hypothesis

H1a: Sensitivity of investment efficiency to cash flow is positive for both underinvestment and overinvesting firms.

Based on the above analysis, we also posit the following hypothesis to investigate the financial constraint effect on investment efficiency.

H2: Financing constraints and investment efficiency have a positive relationship for the total sample and constrained firms but negative for unconstrained firms.

As an extension of the H2, we framed the following hypothesis concerning overinvestment and underinvestment scenarios

H2a: There is a negative relationship between financing constraint and investment inefficiency in both underinvestment and overinvestment scenarios for constrained and uncontained firms but negative for the overall data.

b) The moderating effect of earning quality

Agency theory suggests that owners and their management are separate (Jensen and Meckling, 1979). Due to this separation of role raise agency friction among the stakeholders. The theory also suggested that financial reporting as corporate governance tools can mitigate agency problems from agency frictions (Graham *et al*., 2005, Bushman and Smith, 2001). Roychowdhury *et al*. (2019) have discussed two scenarios in which earning quality matters for an investment decision. First, information asymmetry gives rise to agency frictions, such as adverse selection and moral hazard costs. Second, the existence of uncertainty about growth opportunities. They framed that the earning quality of the firm influences investment efficiency by facilitating external finance and monitor managers and thus reduce managerial incentives to over-invest.

Salehi *et al*. (2018) found a positive relationship between earnings quality and managerial access to bank debt financing. They also indicated that a negative relationship between earnings quality and managerial access to internal debt financing. Kurt (2018) also noted that accruals are likely to offer more significant perceived benefits and have lower expected costs for constrained firms than unconstrained firms, constrained firms are expected to report higher income-increasing accruals

Kardan *et al*. (2016) claim a positive relationship between the quality of financial reporting and debt

financing. Ding *et al*. (2016), using a sample consisting of privately held firms, found that better earnings quality increases private firms' access to debt financing and lowers their cost of debt. Li and Wang (2010) suggest that financial reporting and disclosure can mitigate both under- and overinvestment problems, increasing overall investment efficiency. The above analysis shows that earning quality influences investment efficiency by providing access to external capital.

The constrained firm cannot raise external funds from capital providers, which leads to inefficient investment. Under such situations earning quality plays a crucial role in solving this problem. High earning quality would help the firm to reduce the cost of external finance. On the other hand, the manager also invests in unprofitable projects for the sake of their benefit, which raises the issue of inefficient investment decisions (over investment). Earning quality could curb this problem by disciplining managers not to invest in unprofitable projects. Moreover, (Leonel Carvalho and Elie Guimarães Kalatzis, 2018) noted that better-earning quality improves investment efficiency decisions decreasing investment-cash flow and information asymmetry. Another study also showed how the corporate governance components like board independence and board size use accounting conservatism (accounting reporting) to monitor the manager's economic decisions (Nasr and Ntim, 2018).

Based on the above analysis and arguments, earning quality affects the relationship between financing constraints and investment efficiency through reducing to cost of external finance and enabling managers to invest in visible projects. So, we posit the following hypothesis;

H3: The sensitivity of investment efficiency and both (underinvestment and overinvestment) to cash flow is conditional to the earning quality.

H4: The relationship between financing constraints and investment inefficiency, and both underinvestment and overinvestment conditional to Earning quality.

III. Research Design

a) Data sources and sample selection

We collect firm-level and country-level data from the OSIRIS databases, respectively. We employed the multi-stage sampling determination following prior studies (Nasr and Ntim, 2018, Gomariz and Ballesta, 2014, Bacha and Ajina, 2019, Guariglia, 2008, Waweru *et al*., 2019). Our initial sample is 1211 non-financial firms from 31 countries listed on the database. First, we extract all African firms listed on the stock market of each country in the database. Second, we eliminate financial firms, including banks and insurance institutions. Third, exclude firms that do not have ten years of data. Fourth, we eliminate Firms with missing data of financing constraints, investment, and earning quality variables. Finally, we extract 690 among 1211 firms for the year 2009 to 2018 from 15 African countries.

We categorize the firm into an overall sample, financially constrained and unconstrained firms. We separately regress for both with and without moderating variables to see the effect of earning quality in the relationship between financing constraints and investment efficiency. We applied ordinary least squares to estimate the baseline analysis. We then employed a general method of moment (GMM) to deal with endogeneity issues and the robustness check purpose.

Table I presents the sample distribution by country and economic sector of the firm. We categorized industries into ten industry groups based on the Global Industry Classification Standard (GICS). The largest number of firms engaged in the consumer staple sector, followed by the industrial sector. The lowest share is taken by firms providing different utilities. South Africa and Egypt share the largest number of the sample firm, while Uganda takes the lowest share of the sample. Panel C reports the sample distribution based on the firm's financial status. The subsample that comprises financially constrained firms are 584, and financially unconstrained firms are 106 in number. In percentage, 84.64% and 15.36% of the firms are constrained and unconstrained, respectively.

Table 1: Sample data distribution

Panel A: Sample distribution by industry			Panel B: Sample distribution by country			Panel C: Distribution by financial status			
						Constrained firms		Unconstrained firms	
Industry	Freq.	%	Country	Samples	%	Samples	%	Samples	%
Communication Services	280	4.08	Botswana	10	1.45				
Consumer Discretionary	975	14.2	Cote'DViore	22	3.19				
Consumer Staples	1,400	20.39	Egypt	161	23.33				
Energy	250	3.64	Ghana	16	2.32				
Health Care	297	4.33	Kenya	33	4.78				
Industrials	1,243	18.1	Morocco	44	6.38				
Information Technology	250	3.64	Mauritius	46	6.67				
Materials	1,353	19.7	Malawi	6	0.87				
Real Estate	729	10.62	Nigeria	89	12.89				
Utilities	90	1.31	Tunisia	39	5.65				
			Tanzania	7	1.01				
			Uganda	4	0.58				
			South Africa	163	23.62				
			Zambia	12	1.74				
			Zimbabwe	38	5.51				
Total	6,867	100		690	100	584	84.64	106	15.36

b) Variables definitions and measurements

i. *Dependent variables*

Investment efficiency, overinvestment, and underinvestment: Under the investment theory, Modigliani and Miller (1958) postulated that the firm would invest in capital projects with positive net present value (hereafter NPV) and reject projects with negative NPV. Accordingly, following prior studies (Ullah *et al*., 2020b, Guariglia and Yang, 2016, García Lara *et al*., 2016, Li, 2011, Hirth and Viswanatha, 2011, Bassetto and Kalatzis, 2011, Li and Wang, 2010, Biddle *et al*., 2009, Agyei-Mensah, 2021b, Ullah *et al*., 2020a), we define our investment efficiency variable as a function of firm growth opportunities and firms investing in positive NPV is efficient in their investment efficiency. A deviation from this expected investment level is considered an inefficient investment, either underinvestment or overinvestment.

For measuring investment efficiency, previous studies applied different proxies to calculate investment efficiency based on investment-q sensitivity, growth opportunities, average Tobin's q ratio, cost of capital, and the cost of capital rate divided by the return of investment(Li and Wang, 2010).

Considering the data on hand, we use two investment models (e.i, one for the baseline analysis and the other for robustness checks). First, we apply Biddle *et al*. (2009), which considers the investment as a firm's sales growth opportunities in a given year for baseline analysis. Many studies use this model to measure investment efficiency (Gomariz and Ballesta, 2014, Naeem and Li, 2019, Ullah *et al*., 2020b, Ullah et al., 2020a). For robustness analysis, we employed a model developed by Chen *et al*. (2011)to measure investment as a revenue growth function. To calculate the investment efficiency variable, we first regress the following model to estimate the residual value.

$$\mathrm{Inv}_{i,t} = \beta_0 + \beta_1 \mathrm{Sales\ growth}_{i,t} + \varepsilon_{i,t} \ldots\ldots\ldots\ldots eqn \quad (1)$$

Where $Inv_{i,t}$-is the total capital expenditure on fixed assets of the firm in period t, and $SalesGrowth_{i,t}$-percentage change sales from year t-1 to year t. Using this model, we estimate the residual value industry-wise for industries with at least ten observations and consider the residual's absolute value as an overall investment efficiency variable. Following prior studies, we classify the firm into two groups based on the residual value estimated from the model. We consider firms as overinvesting if their investment level is a positive deviation from the predicted residual value—the firms with a negative residual value regarded as underinvesting. Finally, we use the estimated underinvestment and overinvestment as dependent variables in our investment model.

c) Independent variables

Financing constraints: To analyze the impact of financing constraints on investment efficiency, following prior studies (Mansali *et al*., 2019, Laghari and Chengang, 2019, Leonel Carvalho and Elie Guimarães Kalatzis, 2018, Schauer *et al*., 2019), we adopt the financing constraints indexes (FIN_CONS) as developed by (Schauer et al., 2019). Then we use the value to classify the firm as constrained and unconstrained, and then we employ it as an explanatory variable in the primary investment efficiency model. To compute the index, we adopt the same variable definition (Schauer *et al*., 2019, Baker *et al*., 2003). We measure FCP as follows;

$$\text{Fin\_Cons}_{i.t} = -0.123 * \text{Size}_{i,t-1} - 0.024 * Interest\ coverage_{i,t-1} - 4.404 * ROA_{i,t-1} - 1.716 * Cash\ holding_{i.t-1} \dots\dots\dots\dots\dots\dots\dots. eqn \quad (2)$$

Where $\text{Size}_{i,t-1}$ is the natural log of the firm's lagged total asset, $Interest\ coverage_{i,t-1}, is$ EBIT over interest expenses of firm *i* at year t-1 calculated. $ROA_{i,t-1}$is net income over total assets, and $Cash\ holding_{i.t-1}$ is cash holding over the beginning-of-year total.

Cash flow: We use the operating cash flow as the second independent variable to analyze the cash flow's investment efficiency sensitivity. We measure it as net cash flow from operating activities scaled by the total asset.

i. *Moderating variable*

Earning quality: In the literature, there is no commonly agreed approach to measure earning quality. Due to the unobservable behavior of accounting information, it is not easy to measure financial reporting quality. Several methodological research develops an approach to measure the earning quality of the firm, includes performance-based discretionary accruals (Kothari *et al*., 2005), revenue-based measure (Stubben, 2010, McNichols and Stubben, 2008), earning smoothness (Francis *et al*., 2005), accruals (Dechow and Dichev, 2002), value relevance, earnings persistence (Lev, 1983, Ali and Zarowin, 1992), earnings management(Jones, 1991), and readability (Li, 2008).

Considering the data in our data set, we use performance-based discretionary accruals or revenue discretionary of the firm developed by(Kothari *et al*., 2005). The extent of literature used this method to measure the accounting or earning quality (Lourenço *et al*., 2018, Gomariz and Ballesta, 2014, Chen *et al*., 2011). Following their steps earning quality is measured as follows.

$$\Delta ARec_{i,t} = \alpha_0 + \alpha_1 \Delta Rev_{i,t} + \varepsilon_{i,t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\text{eqn} \quad (3)$$

Where $\Delta ARec_{i,t}$ An annual change of account receivable of firm i at year t divided by the lagged total asset is an annual change of account receivable. $\Delta Rev_{i,t}$ is the annual change in revenue of firm *I* at year *t* scaled by lagged total asset and $\varepsilon_{i,t}$ represent a random error term. Following Chen *et al*. (2011), estimate the residual value from equation 3 to determine discretionary revenue. Discretionary value estimated cross-sectional for each industry group in a year that has at least eight observations. Then we multiply the absolute value of discretionary revenues by -1. The higher the value, the higher-earning quality.

ii. *Control variables*

Under the neoclassical investment model, the theory assumes that capital investment decisions are determined only by marginal q ratios (Abel, 1983, Hayashi, 1982, Yoshikawa, 1980). However, there are a variety of factors affecting efficient investment decisions. Many researchers included controlling variables in their investment model *(Chen et al., 2011, Li and Wang, 2010, Biddle et al.*, 2009, Verdi, 2006, Biddle and Hilary, 2006). Following prior studies, we include asset tangibility, leverage, firm size, firm age, interest coverage ratio, and dividend payout ratio as control variables in our investment models. We also control the year to control year variability. To address omitted country-level specific variables, we include country as a dummy variable.

d) *Model specification*

i. *Financing constraints and cash flow sensitivity of investment efficiency*

To investigate the effect of financial constraints and cash flow on investment efficiency, we estimate the following model;

$$Inv\_Eff_{i,t} = \beta_0 + \beta_1 Fin\_Cons_{i,t} + \beta_2 CashFlow_{i,t} + \beta_3 Controls_{i,t} + \beta_4 YearDummy_t + \beta_5 CountryDumm + \varepsilon_{i,t} \dots\dots\dots\dots\dots\dots\dots\text{eqn} \quad (4)$$

Where $In\ v\_Eff_{i,t}$ an overall investment inefficiency, measured as the absolute residuals of investment efficiency from Biddle et al. (2009) model. $FinCons_{i,t}$ is the financing constraint index of firm *i* at year *t*. $CashFlow_{i,t}$ *, represent net cashflow scaled by lagged total asset,* $Controls_{i,t}$ represents the list of control variables, including tangibility, leverage, firm size, firm age, interest coverage ratio, dividend payout ratio, etc. $YearDummy_t$ and $CountryDumm$ represents year, and country dummies respectively. In this model β_1 and β_2 measure the financing constraint effects and the cash flow sensitivity of the investment efficiency.

To estimate the impact of financing constraints and cash flow on the two inefficient investment scenarios (overinvestment and underinvestment), we apply the same model only by changing the dependent variable to underinvestment *(Under_Inv)* or overinvestment (*Over_Inv)*.

ii. *The moderating role of earning quality*

This study investigates the moderating role of earning quality on the relationship between financing constraints and investment efficiency. To investigate the moderating role of earning quality, we include the interaction terms in the prior models from eqn(4) as follows;

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To investigate the role of earning quality in the relationship between financing constraints and investment efficiency, we estimate the following model by adding the interaction variable.

$$Inv\_Eff_{i,t} = \beta_0 + \beta_1 Fin\_Cons_{i,t} + \beta_2 CashFlow_{i,t} + \beta_3 EQ_{i,t} + \beta_4 Fin\_Cons_{i,t} * EQ_{i,t} + \beta_5 Cashflow * EQ_{i,t} + \beta_6 Controls_{i,t} + \beta_7 Year\ Dummy_t + \beta_8 CountryDumm\varepsilon_{i,t} \ldots\ldots eqn \quad (5)$$

Where $INV_{i,t}$ -is overall investment inefficiency, measured as the absolute residuals of investment efficiency from Biddle *et al*. (2009) model. $FinCons_{i,t}$ -is the financing index as developed by Schauer et al. (2019) in *I* firm at year *t*,$EQ_{i,t}$ -is the earning quality in *i* firm at year *t*.$Cashflow_{i,t}$ -is the operating cash flow in *I* firm at year *t*. $FinCons_{i,t} * EQ$ is the interaction term of financing constraints and earning quality in *i* firm at year t. $Cashflow_{i,t} * EQ$ is the interaction term of cashflow and earning quality in *i* firm at year t. $Controls_{i,t}$ It controls variables like leverage, firm size, firm age, interest coverage, and tangibility. $YearDummy_t$ and $Country\ Dumm$ represents the year, and country dummies, respectively. The same procedure applied two the overinvestment and underinvestment scenarios.

IV. Empirical Results

a) Descriptive statistics

Table II provides detailed summary statistics of all variables. Panel A, B, and C present the descriptive statistical summary of all variables for overall data and subsamples (unconstrained and constrained firms). The columns include the number of observations, mean value, standard deviation, and the minimum and maximum value of each variable for both the overall sample and subsamples. The mean of corporate investment efficiency (Inv_Eff) is 0.552, 0.550, and 0.559 for overall samples, unconstrained, and constrained firms, respectively. The minimum value of Inv_Eff is 0.383, while its maximum value approximately 0.922 across all total samples and subsamples. This value indicates there are no extreme values.

Table 2: Descriptive statistics

	Panel A: Total sample					Pane B: Constrained					Pane C: Unconstrained				
Variable	Obs	Mean	SD	Min	Max	Obs	Mean	SD	Min	Max	Obs	Mean	SD	Min	Max
Inv_Eff	5785	0.552	0.016	0.383	0.922	4855	0.550	0.55	0.383	0.922	930	0.559	0.02	0.39	0.683
Over_Inv	2562	0.563	0.015	0.552	0.922	1919	0.562	0.562	0.552	0.922	643	0.568	0.015	0.552	0.683
Under_Inv	3223	0.542	0.01	0.383	0.552	2936	0.540	0.542	0.383	0.552	287	0.539	0.017	0.39	0.552
Cashflow	6177	0.097	0.162	-3.022	5.723	5172	0.085	0.085	-3.022	1.989	1005	0.159	0.244	-1.22	5.723
Fin_Cons	6900	1.496	1.060	-1.499	2.533	4610	3.740	3.750	2.090	7.180	908	3.420	2.460	-2.800	5.040
EQ	6251	0.096	0.119	-0.284	0.554	5231	0.089	0.089	-0.251	0.535	1020	0.131	0.197	-1.992	3.233
*Cashflow*EQ*	6024	0.02	0.035	-0.009	0.223	5025	0.017	0.017	-0.007	0.206	999	0.036	0.048	-0.022	0.286
*Fin_cons*EQ*	5436	0.061	1.552	-1.444	13.092	4528	0.034	0.034	-1.41	10.558	908	0.126	2.225	-1.784	17.757
TQ	6186	1.053	1.228	0.001	6.893	5225	0.922	0.922	0.001	6.22	961	1.756	1.816	0	8.649
Firm_Grow	6546	0.038	0.415	-2.324	1	5515	6.853	6.853	-0.457	6.88	1031	3.329	0.022	2.618	3.329
Tang	6295	0.373	0.284	0	3.908	5266	0.37	0.37	0	3.908	1029	0.39	0.273	0	1.47
Size	6739	14.65	2.531	4.533	21.625	5687	14.082	14.082	4.533	21.625	1052	14.614	2.583	8.007	21.251
Inter_Cov	5920	7.972	1.057	-2.399	8.153	4894	7.117	7.117	-0.887	11.68	843	8.415	0.957	-0.693	8.561
Age	6879	3.453	0.767	1.099	4.836	5804	3.412	3.412	0	5.236	1075	3.66	0.728	0	4.883
Div	5950	-0.025	0.048	-0.27	0	4995	-0.027	-0.027	-12.053	0	955	-0.072	0.135	-2.548	0
Lev	6615	0.565	0329	0.014	1.976	5582	0.546	0.546	0.014	1.781	1033	0.764	1.231	-0.054	17.159
Reg_Q	6900	-0.282	0.653	-2.12	1.13	5825	-0.258	-0.258	2.12	1.13	1075	-0.41	0.722	-2.12	1.13

Overinvestment (Over_Inv) has a mean of 0.563, 0.562, and 0.568 for overall samples, unconstrained and constrained firms, respectively. For overall samples, the minimum and maximum values of Over_Inv are 0.552 and 0.922, respectively. However, for the unconstrained subsample, the minimum and maximum values are 0.5516 and 0.6828, while for constrained, it is 0.5515 and 0.9222, respectively. Underinvestment (Under_Inv) has a mean of 0.542, 0.540, and 0.539 for the overall data set, unconstrained and constrained, respectively. The minimum and maximum values are 0.383 and 0.552, both for the total and constrained samples. But for the unconstrained firm, it is 0.390 and 0.552. All the minimum and maximum amounts of the overinvestment and underinvestment variable shows no extreme value.

Likewise, Table II reports that cash flow (*CashFlow*) and financing constraints (*Fin_Cons*) the mean and the standard deviation of financing constraint indicators. Cash flow has a mean value of 0.097, 0.085, and 0.159 for whole samples, unconstrained and constrained subsamples, respectively. In comparison, financing constraints have a mean value of 1.496, 3.740, and 3.420 for total samples, unconstrained and constrained subsamples.

b) Correlation analysis

Table III reports the pair wise correlations among all the variables used in the study analysis. The result shows that cash flow and financing constraints positively and significantly correlate with investment efficiency, indicating investment efficiency is highly affected by firms financing constraints and sensitive to their internal cash flow. Cash flow and financing constraint indicators have a positive and significant correlation to each other. Similarly, earning quality also shows a positive and significant correlation with investment efficiency, indicating that higher-earning quality leads to efficient capital investment; the result is consistent with previous studies (Gomariz and Ballesta, 2014). Concerning earning quality and cash flow and financing constraint indicator relations, the result indicates that earning quality has a positive and significant correlation with cash flow. In contrast, it has a negative and significant correlation with financing constraint indicators.

Table 3: Correlation matrix

	Inv_Eff	Casflow	Fin_Cons	EQ	TQ	Firm_Grow	Tang	Size	Inter_Cov	Age	Div	Lev	Reg_Q
Inv_Eff	1												
Casflow	0.476***	1											
Fin_Cons	0.075***	0.022***	1										
EQ	0.061***	0.167***	-0.0474***	1									
TQ	-0.049***	0.012***	0.0131***	-0.002***	1								
Firm_Grow	-0.434	0.019***	-0.0171	0.053***	0.004***	1							
Tang	0.091***	0.126***	-0.034***	0.100***	-0.018***	0.026***	1						
Size	0.108***	0.092***	-0.033***	0.271***	-0.092	0.024*	0.148***	1					
Inter_Cov	-0.138***	-0.146***	-0.627***	0.002***	-0.018***	0.009	0.002**	0.021	1				
Age	0.030**	0.025*	-0.004*	0.007**	-0.023*	-0.005**	0.066***	0.178***	0.007	1			
Div	-0.059**	-0.177*	0.089	-0.062**	-0.006	-0.003***	-0.063	0.001**	0.015	-0.030***	1		
Lev	-0.038*	0.175**	-0.262	0.156***	0.012	0.015**	0.178**	0.071*	0.029	0.004**	-0.324***	1	
Reg_Q	0.058***	0.081***	-0.008	-0.048	0.050***	0.005	-0.126***	0.158***	0.004	0.070**	0.011***	-0.037**	1

Correlation between all independent and controlling variables is not high, showing that our data set has no collinearity problem. The correlation coefficient between the interest coverage (Inter_Cov) and financing constraint indicator is -0.627, which is relatively the highest coefficient, but it is less than the threshold value of 0.7 (Dormann*et al*., 2013). These all show that there are is no such high multicollinearity problem among the variables used for the analysis.

c) *Investment efficiency on Cash flow and financing constraints with moderating variable*

Table IV presents the estimation results of the investment efficiency on cash flow (cash flow) and financing constraints (Fin_Cons) with the effect of earning quality (EQ) as moderating variables across all total samples and subsamples. Panel A depicts the regression result without moderating variable, whereas panel B reports the regression's moderating variable. In panel A, the result indicates that both cash flow and Fin_Cons variables are significant at 1% across all the overall samples and the two subsamples (Constrained and Unconstrained firm). As predicted in hypotheses (H1) and (H2), the result confirms that Cash Flow has positively associated with investment efficiency across all samples, whereas Fin_Cons has a positive coefficient for the overall and constraint subsample except for unconstrained firms, which is negative. The positive coefficient shows that the firm's investment efficiency is sensitive to internal cash flow and their investment activities affected by the financing constraints, which is consistent with previous studies (Hovakimian and Hovakimian, 2009). It indicates when companies are externally constrained, they tend to look for internal cash flow.

However, in panel B, after we include the interaction terms (Cash Flow*EQ) between cash flow and earning quality, the strengthening of the cash flow coefficient dramatically reduced due to the moderating effect of earning quality across total, constrained, and unconstrained firms. The result proved hypothesis three (H3) that the sensitivity of investment efficiency is conditional to its earning quality. Moreover, this evidence reveals that earning quality, as a corporate governance tool, reduces investment efficiency on internal cash flow and helps the firm get external finance for their investment projects.

Table 4: Regression results of investment efficiency on Cash flow and financing constraints with moderating variable

Variables	*Panel A*			*Panel B*		
	Overall	Constrained	Unconstrained	Overall	Constrained	Unconstrained
Inv_Eff						
Cashflow	0.0936*** (0.0010)	0.0884*** (0.0011)	0.1062*** (0.0026)	0.0871*** (0.0012)	0.0181*** (0.0021)	0.1035*** (0.0030)
Fin_Cons	0.0003*** (0.0001)	0.0081*** (0.0006)	-0.0174*** (0.0013)	0.0072*** (0.0007)	0.0175*** (0.0010)	-0.0161*** (0.0013)
EQ				0.0471*** (0.0012)	0.0015*** (0.0005)	0.0126 (0.0087)
Cashflow*EQ				-0.0009 (0.0007)	0.0053** (0.0007)	0.0217*** (0.0077)
Fin_Cons*EQ				0.1367*** (0.0042)	-0.0012*** (0.0001)	-0.0017* (0.0009)
TQ	-0.0002*** (0.0001)	-0.0004*** (0.0003)	0.0013*** (0.0004)	-0.0002*** (0.0008)	-0.0004*** (0.0001)	0.0012*** (0.0004)
Firm_Grow	0.0085*** (0.0005)	0.0041*** (0.0012)	0.0015 (0.0012)	0.0008* (0.0005)	1.6174*** (0.2202)	-0.0017 (0.0020)
Tang	0.0075*** (0.0008)	0.0018*** (0.0006)	0.0110*** (0.0016)	0.0019*** (0.0007)	0.0068*** (0.0007)	0.0093*** (0.0021)
Size	0.0010*** (0.0001)	0.0012*** (0.0001)	-0.0019*** (0.0003)	0.0010*** (0.0001)	0.0004*** (0.0001)	-0.0017*** (0.0003)
Inter_Cov	0.0011*** (0.0003)	-0.0019 (0.0013)	-0.0004*** (0.0004)	0.0012*** (0.0003)	-0.0080*** (0.0010)	-0.0004*** (0.0001)
Age	-0.0002 (0.0003)	0.0003 (0.0002)	-0.0018*** (0.0006)	0.0001 (0.0002)	0.0006** (0.0003)	-0.0019*** (0.0006)
Div	-0.0112*** (0.0009)	-0.0159* (0.0096)	-0.0041 (0.0037)	-0.0043*** (0.0008)	-0.0060*** (0.0008)	-0.0041 (0.0038)
Lev	0.0012*** (0.0001)	-0.0055*** (0.0018)	0.0030 (0.0019)	-0.0108*** (0.0003)	-0.0008*** (0.0002)	0.0028 (0.0017)
Reg_Q	-0.0014 (0.0015)	-0.0009 (0.0010)	0.0019 (0.0014)	-0.0015 (0.0020)	-0.0043*** (0.0019)	0.0020 (0.0021)
Constant	0.5304*** (0.0039)	0.5141*** (0.0118)	7.7773*** (4.1611)	-0.6164*** (0.0353)	-10.4966*** (1.5085)	3.6268*** (4.4336)
CountryDummy	Yes	Yes	Yes	Yes	Yes	Yes
YearDummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,636	2,225	789	4,636	3,652	789
R-squared	0.3072	0.3193	0.7050	0.5231	0.3859	0.7092

*Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, Variable definition as given in table 2*

The result also consistent with the theory that states earning quality, as corporate governance tools, facilitate external finance for capital investment by providing relevant accounting information to an external party so as reduce the dependency of investment decisions on the internal funds(Sloan, 2001, Bushman and Smith, 2001).

Similarly, panel B also reports the interaction term, Fin_Cons* EQ, is significant and has a positive coefficient for the overall sample and constrained firms but negative for unconstrained firms. Fin_Cons' coefficient of financing constraints indicator, Fin_Cons, decreases after we employed the interaction term (Fin_Cons*EQ), proving that earning quality has a conditional effect on the relationship between financing constraints investment efficiency is expected. It implies that accounting quality as a corporate governance mechanism improves the firm's investment decision, reducing financing constraints by curbing information asymmetry. The result is consistent with the work of (Leonel Carvalho and Elie Guimarães Kalatzis, 2018, Chen *et al*., 2011, Beatty *et al*., 2009, Verdi, 2006) that earning quality mitigates investment inefficiency by curbing information asymmetry between the shareholders and managers.

d) Overinvestment on financing constraints and cash flow with moderating variable effects

Panel a of Table V presents regression results of overinvestment (inefficiency) over financing constraint and cash flow, whereas panel B shows the moderating effects of earning quality. Both Cash flow and Fin_Cons are significant at 1% across all samples. Cash flow is positively related to overinvestment across all sample sizes, whereas Fin_Cons has a positive coefficient for the total sample but negative for constrained and unconstrained firms. The result indicates that as the internal cash flow increases, the manager tends to overinvest to attract the investor. On the other hand, the estimated result proved that constrained firms more likely overinvest than unconstrained using their internal cash flow. This result aligns with previous empirical work (Naeem and Li, 2019, Laghari and Chengang, 2019, Lerskullawat, 2018).

Table 5: Regression result of overinvestment on financing constraints and cashflow sensitivity including moderating variable

Variables	Panel A			Panel B		
	Overall	Constrained	Unconstrained	Overall	Constrained	Unconstrained
Over_Inv						
CashFlow	0.1078*** (0.0018)	0.0345*** (0.0029)	0.1114*** (0.0035)	0.0913*** (0.0018)	0.0770*** (0.0013)	0.1030*** (0.0045)
Fin_Cons	0.0042*** (0.0001)	-0.0032*** (0.0002)	-0.0147*** (0.0010)	0.0011** (0.0001)	-0.0176** (0.0083)	-0.0117*** (0.0011)
EQ				0.0263*** (0.0019)	0.0047*** (0.0014)	0.0033*** (0.0005)
CashFlow*EQ				-0.0013* (0.0010)	-0.0034*** (0.0015)	0.0329*** (0.0127)
Fin_Cons*EQ				0.0582*** (0.0068)	0.0012** (0.0006)	-0.0011*** (0.0001)
TQ	0.0017*** (0.0002)	-0.0004*** (0.0001)	0.0012*** (0.0004)	0.0026*** (0.0002)	-0.0004*** (0.0001)	0.0012*** (0.0003)
Firm_Grow	0.0076*** (0.0013)	0.0142* (0.0074)	-0.0013 (0.0021)	-0.0020 (0.0012)	0.6498*** (0.1269)	-0.0098*** (0.0024)
Tang	0.0058*** (0.0011)	0.0084*** (0.0008)	0.0084*** (0.0022)	0.0013 (0.0009)	0.0015*** (0.0005)	0.0056*** (0.0022)
Size	0.0002 (0.0002)	0.0007*** (0.0001)	-0.0014*** (0.0003)	0.0002 (0.0001)	0.0011*** (0.0001)	-0.0010*** (0.0003)
Inter_Cov	0.0010** (0.0004)	-0.0097*** (0.0011)	-0.0004*** (0.0001)	0.0007** (0.0003)	-0.0016 (0.0011)	-0.0003*** (0.0001)
Age	-0.0012*** (0.0004)	0.0003 (0.0003)	-0.0027*** (0.0006)	-0.0012*** (0.0003)	0.0003 (0.0002)	-0.0030*** (0.0006)
Div	-0.0052*** (0.0009)	-0.0079*** (0.0009)	-0.0115** (0.0053)	-0.0016** (0.0007)	-0.0143*** (0.0041)	-0.0026 (0.0054)
Lev	0.0011*** (0.0002)	0.0016*** (0.0001)	0.0057*** (0.0016)	-0.0068*** (0.0005)	-0.0058*** (0.0004)	0.0030* (0.0016)
Reg_Q	-0.0064*** (0.0022)	-0.0047*** (0.0015)	-0.0058 (0.0043)	-0.0068*** (0.0018)	-0.0006 (0.0010)	-0.0050 (0.0041)
Constant	0.5363*** (0.0071)	0.5175*** (0.0512)	1.0614*** (3.4260)	0.0555 (0.0574)	-3.9725*** (0.8670)	9.1880*** (3.6240)
CountryDummy	Yes	Yes	Yes	Yes	Yes	Yes
YearDummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,148	3,774	551	2,148	2,145	551
R-squared	0.3857	0.2962	0.5567	0.5939	0.3520	0.5923

*Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, Variable definition as given in table 2*

Panel B illustrates the effects of moderating variables or the two interaction terms, Cashflow*EQ and Fin_Cons*EQ, on the relationship between cash flow and overinvestment. The results indicate that the Cashflow*EQ is significant at least 10% across all samples, whereas Fin_Cons*EQ is significant at least 5%. The coefficient of Cashflow*EQ is positive for total samples but negative for the remaining constrained and unconstrained firms. Similarly, Fin_Cons*EQ has a positive coefficient for the overall sample but negative for unconstrained firms. It indicates that earning quality has increasing power for the total sample but decreasing power for constraining and unconstrained firms. The result implies firm with high earning quality, be it constrained and unconstrained, has to reduce overinvestment the ability to avoid financing constraints to finance their projects. On the other hand, the result implies that as cash flow increases, the managers tend to underinvest for the sake of personal benefit. The result is consistent with previous studies (Roychowdhury *et al*., 2019, Lin *et al*., 2016).

e) Underinvestment on financing constraints and cash flow with moderating variable effects

Panel a of Table VI reports the regression results of underinvestment over financing constraint and cash flow. In contrast, panel B depicts moderating variables or interaction (Cashflow* EQ, and Fin_Cons* EQ) on the model's relationship. In panel A, the result demonstrates both cash flow and financing constraint significant at 1% across all samples except for financing constraints indicators(Fin_Cons) under total samples, accounting for 10%. Cashflow has a positive coefficient across all samples, whereas Fin_Cons shows negative to the subsamples but positive for the total asset. The results illustrate that underinvestment highly sensitive to internal cash flow. The Unconstrained and constrained tends to use their internal cash flow when they are underinvesting situation.

Table 6: Regression results of underinvestment on financing constraints and cash flow sensitivity, including moderating variable

Variables	*Panel A*			*Panel B*		
	Overall	Constrained	Unconstrained	Overall	Constrained	Unconstrained
Under_Inv						
CashFlow	0.0454*** (0.0012)	0.0203*** (0.0016)	0.0601*** (0.0042)	0.0419*** (0.0016)	0.0441*** (0.0036)	0.0467*** (0.0056)
Fin_Cons	0.0021* (0.0003)	-0.0018*** (0.0002)	-0.0106*** (0.0008)	0.0031** (0.0004)	0.0177*** (0.0011)	-0.0100*** (0.0009)
EQ				0.0310*** (0.0015)	-0.0123*** (0.0030)	0.0014* (0.0008)
CashFlow*EQ				-0.0198*** (0.0037)	0.0047*** (0.0022)	-0.0860*** (0.0160)
Fin_Cons*EQ				-2.7986*** (0.6347)	-0.0013*** (0.0002)	0.0005* (0.0003)
TQ	-0.0004*** (0.0001)	0.0011*** (0.0002)	-0.0029*** (0.0007)	-0.0004*** (0.0001)	0.0022*** (0.0002)	-0.0027*** (0.0007)
Firm_Grow	0.0038*** (0.0004)	7.3170*** (1.2285)	0.0028*** (0.0011)	0.0000 (0.0003)	6.0202*** (1.2556)	0.0025** (0.0011)
Tang	0.0027*** (0.0006)	0.0047*** (0.0011)	0.0042** (0.0018)	-0.0008 (0.0006)	0.0029*** (0.0010)	0.0037* (0.0019)
Size	0.0011*** (0.0001)	-0.0006*** (0.0002)	-0.0021*** (0.0004)	0.0009*** (0.0001)	-0.0007*** (0.0002)	-0.0021*** (0.0004)
Inter_Cov	0.0004** (0.0002)	-0.0197*** (0.0014)	-0.0003*** (0.0001)	-0.0005 (0.0003)	-0.0102*** (0.0014)	-0.0003*** (0.0000)
Age	0.0001 (0.0002)	0.0001 (0.0004)	0.0006 (0.0008)	0.0001 (0.0002)	-0.0001 (0.0004)	0.0008 (0.0008)
Div	-0.0041* (0.0024)	-0.0031*** (0.0008)	0.0013 (0.0022)	-0.0023 (0.0018)	-0.0021*** (0.0007)	0.0019 (0.0036)
Lev	-0.0069*** (0.0013)	0.0000 (0.0002)	-0.0030*** (0.0011)	-0.0053*** (0.0004)	-0.0023*** (0.0002)	-0.0023** (0.0011)
Reg_Q	0.0006 (0.0010)	-0.0073*** (0.0022)	0.0033 (0.0030)	0.0008 (0.0009)	-0.0093*** (0.0020)	0.0032 (0.0030)
Constant	0.5317*** (0.0027)	-9.4538*** (8.4209)	6.8726*** (2.6816)	4.0776*** (5.3400)	-2.6139*** (8.6040)	5.0395*** (2.9011)
CountryDummy	Yes	Yes	Yes	Yes	Yes	Yes
YearDummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,488	1,549	238	2,488	1,507	238
R-squared	0.3527	0.5186	0.7078	0.4586	0.6099	0.7150

*Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, Variable definition as given in table 2*

The results in Panel B confirm both interaction variables, Cashflow*EQ and Fin_Cons*EQ variables, are significant, at least 10% across all samples. Cashflow*EQ interaction is negatively related across all samples except for the constrained category, a positive coefficient. While the interaction Fin_Cons*EQ variable has a negative for the total sample and constrained but positive to unconstrained firms. It indicates that earning quality has to decrease power for the total sample but increasing power for constraining and unconstrained firms.

f) Robustness check and additional analysis

i. *Robustness check using an alternative measurement of investment efficiency*

To check our result's robustness(Chen *et al*., 2011) as an alternative measurement for investment measure.

$$Inv_{i,t} = \alpha_0 + \alpha_1 Neg_{i.t-1} + \alpha_2 \%RevGrow_{i.t-1} + \alpha_3 Neg * RevGrow_{i,t-1} + \varepsilon_{i.t}$$

Where $Inv_{i,t}$, investment computed as total capital expenditure on fixed assets of the firm in period t scaled by total asset, $Neg_{i.t-1}$ an indicator which takes one if revenue growth is negative value, 0 otherwise. $\%RevGrow_{i.t-1}$, the percentage growth of revenue.

Accordingly, we proved that the result is robust. The regression results report that all variable of interest is significant and similar to our main regression results. Tables 7, 8, and 9 reports the regression results of our analysis using the alternative measurement of investment efficiency, overinvestment, and underinvestment.

ii. *Robustness checks (Endoginty issues)*

In many corporate governments and corporate finance, variables can be affected by the previous performance. For example, in our baseline model, investment efficiency might be influenced by the firm's prior year investment performance. It raises the issue of the endogeneity problem in the model. So, to handle this problem, we employed a generalized two-step method of moments (GMM). GMM is powerful estimation technique than OLS in solving unobserved heterogeneity and endogeneity problems (Wintoki et al., 2012). Prior studies examining corporate governance variables have also proved that GMM can solve the endogeneity problem (Ullah et al., 2020b, Sewpersadh, 2019). Thus, we estimate our analysis using lagged variables for investment efficiency, overinvestment, and underinvestment in the GMM method. We find consistent results with the previous result we got using ordinary least square (OLS). We lose some observations due to the requirement of the GMM.

Tables X, XI, and XII, report the GMM estimation results for all the hypotheses we predicted in the study, and the regression results of two-step GMM confirm robust results. The results of lagged variable also significant in all cases. Thus, the two-step GMM model offers us a robust result.

Table 7: Robustness check using an alternative proxy for investment efficiency

Variables	*Panel A*			*Panel A*		
	Overall	Constrained	Unconstrained	Overall	Constrained	Unconstrained
Chen_Inv						
CashFlow	0.420*** (0.056)	0.067*** (0.007)	0.230** (0.117)	0.155*** (0.058)	0.138*** (0.020)	0.103* (0.079)
Fin_Cons	0.003* (0.002)	0.018 (0.002)	-0.060** (0.024)	0.008*** (0.003)	0.001** (0.001)	-0.009** (0.004)
EQ				-0.058*** (0.011)	0.372*** (0.027)	-0.614*** (0.125)
Cashflow*EQ				-0.325*** (0.037)	0.282*** (0.045)	0.001* (0.001)
Fin_Cons*EQ				0.875*** (0.078)	-0.004 (0.003)	-0.060*** (0.019)
TQ	-0.008 (0.001)	0.001 (0.001)	0.002 (0.006)	0.006 (0.001)	0.001 (0.001)	0.001 (0.006)
Firm_Growth	0.663*** (0.027)	0.009*** (0.002)	-0.019 (0.025)	0.552*** (0.018)	0.007*** (0.001)	0.071** (0.034)
Tang	0.049** (0.023)	0.011*** (0.003)	0.690*** (0.034)	-0.020 (0.024)	-0.020*** (0.002)	0.749*** (0.034)
Size	0.007* (0.003)	0.011* (0.004)	0.018*** (0.005)	0.005 (0.003)	0.002*** (0.001)	0.013*** (0.005)
Age	-0.002 (0.008)	0.000 (0.001)	0.001** (0.001)	-0.003 (0.008)	0.002* (0.001)	-0.031*** (0.011)
Inters_Cov	0.010** (0.005)	0.006 (0.005)	-0.033*** (0.011)	0.008* (0.005)	0.014** (0.006)	0.001 (0.001)
Div	-0.005 (0.015)	0.001 (0.003)	0.100* (0.056)	-0.035 (0.027)	-0.006 (0.004)	0.072 (0.095)
Lev	-0.014*** (0.004)	0.011*** (0.003)	0.023 (0.021)	0.032*** (0.007)	-0.007* (0.003)	0.050** (0.023)
Reg_Q	-0.098** (0.043)	-0.010* (0.005)	0.056 (0.061)	-0.086** (0.041)	0.002 (0.004)	0.061 (0.061)
Constant	-0.128 (0.109)	0.513*** (0.040)	-196.710** (77.579)	-0.133 (0.103)	0.446*** (0.041)	-0.472** (0.225)
Countrydummy	Yes	Yes	Yes	Yes	Yes	Yes
Yeardummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,636	3,774	789	4,636	3,775	765
R-squared	0.350	0.143	0.543	0.368	0.416	0.559

*Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, Variable definition as given in table 2*

Table 8: Robustness check using alternative proxy overinvestment

Variables	Panel A			Panel B		
	Overall	Constrained	Unconstrained	Overall	Constrained	Unconstrained
Chen_OverInv						
Cashflow	0.016** (0.007)	0.137*** (0.006)	0.182 (0.163)	0.017*** (0.006)	0.132*** (0.007)	0.054 (0.168)
Fin_Cons	0.031*** (0.008)	-0.021*** (0.004)	-0.098* (0.051)	0.008* (0.001)	-0.002* (0.000)	-0.030*** (0.009)
EQ				-0.054*** (0.009)	0.359*** (0.008)	-0.383** (0.170)
Cashflow*EQ				-0.025* (0.021)	0.256*** (0.023)	0.785** (0.360)
Fin_Cons*EQ				0.002*** (0.001)	0.021*** (0.004)	-0.058*** (0.021)
TQ	-0.005 (0.001)	-0.001** (0.001)	0.007 (0.009)	-0.006 (0.001)	0.011 (0.001)	0.019** (0.009)
Firm_Growth	-0.028*** (0.004)	0.001*** (0.001)	0.065 (0.055)	-0.015*** (0.003)	0.011*** (0.003)	0.032 (0.053)
Tang	0.004* (0.002)	-0.019*** (0.002)	0.271*** (0.048)	0.006*** (0.002)	-0.020*** (0.002)	0.290*** (0.048)
Size	-0.005*** (0.001)	0.002*** (0.001)	0.019* (0.010)	-0.005*** (0.001)	0.001*** (0.000)	0.005 (0.007)
Age	0.003*** (0.001)	0.002 (0.002)	0.002* (0.001)	0.002*** (0.001)	0.002 (0.002)	0.006 (0.001)
Inters_Cov	-0.001 (0.000)	0.001* (0.001)	-0.015 (0.015)	0.001 (0.001)	0.001* (0.001)	-0.020 (0.016)
Div	0.043*** (0.015)	-0.005*** (0.002)	0.142 (0.116)	0.041*** (0.011)	-0.004** (0.002)	-0.073 (0.141)
Lev	-0.004** (0.002)	-0.007*** (0.002)	0.133*** (0.030)	-0.000 (0.002)	-0.004** (0.002)	0.225*** (0.039)
Reg_Q	-0.002 (0.004)	0.003 (0.004)	-0.034 (0.090)	-0.001 (0.003)	0.001 (0.004)	-0.035 (0.089)
Constant	0.390*** (0.009)	0.522*** (0.016)	-6.617* (167.403)	0.375*** (0.011)	0.516*** (0.016)	-0.908 (7.755)
Countrydummy	yes	yes	yes	yes	yes	yes
Yeardummy	yes	yes	yes	yes	yes	yes
Observations	3,228	3,772	381	3,205	3,635	381
R-squared	0.330	0.433	0.279	0.380	0.451	0.307

*Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1, Variable definition as given in table 2*

Table 9: Robustness check using alternative proxy underinvestment

Variables	Panel A			Panel B		
	Overall	Constrained	Unconstrained	Overall	Constrained	Unconstrained
Chen_UI						
Cashflow	0.041* (0.023)	0.018*** (0.002)	0.125** (0.062)	0.056*** (0.013)	0.015*** (0.002)	0.130* (0.078)
Fin_Cons	0.010** (0.002)	-0.005*** (0.001)	-0.023* (0.012)	-0.012** (0.002)	-0.004*** (0.001)	0.022* (0.012)
EQ				-0.003** (0.001)	-0.049*** (0.009)	0.118*** (0.017)
Cashflow*EQ				0.002*** (0.000)	-0.023** (0.004)	0.485*** (0.049)
Fin_Cons*EQ				-0.119** (0.050)	-0.009*** (0.003)	0.003*** (0.001)
TQ	-0.001 (0.001)	-0.002*** (0.003)	-0.010*** (0.003)	-0.001 (0.001)	-0.002*** (0.001)	-0.003*** (0.001)
FirmGrow	0.006** (0.003)	-0.004 (0.001)	-0.028** (0.014)	-0.002 (0.003)	-0.006 (0.001)	-0.002 (0.002)
Tang	0.007 (0.008)	0.002*** (0.001)	0.760*** (0.036)	-0.009 (0.012)	0.001** (0.001)	-0.011** (0.005)
Size	0.002** (0.001)	0.001*** (0.001)	0.009** (0.004)	0.001 (0.001)	0.011*** (0.002)	0.001 (0.001)
Age	-0.004* (0.002)	-0.001 (0.001)	0.001* (0.000)	-0.004* (0.002)	-0.001 (0.001)	-0.004** (0.002)
Inters_Cov	-0.002* (0.001)	0.011 (0.001)	-0.007 (0.007)	-0.004** (0.001)	0.003 (0.001)	-0.004** (0.002)
Div	-0.083* (0.049)	-0.211*** (0.017)	0.006 (0.023)	-0.079 (0.051)	-0.196*** (0.018)	-0.044 (0.033)
Lev	0.011* (0.006)	0.011*** (0.001)	-0.035*** (0.012)	0.016** (0.007)	0.010*** (0.001)	0.007* (0.004)
Reg_Q	-0.008* (0.005)	-0.001 (0.001)	-0.038 (0.028)	-0.009* (0.005)	-0.001 (0.001)	-0.008 (0.007)
Constant	-0.690*** (0.013)	0.534*** (0.006)	-76.072* (40.428)	-0.664*** (0.016)	0.541*** (0.006)	-0.725*** (0.044)
Countrydummy	yes	yes	yes	yes	yes	yes
Yeardummy	yes	yes	yes	yes	yes	yes
Observations	1,432	1,946	408	1,434	1,890	408
R-squared	0.128	0.342	0.695	0.161	0.362	0.696

Table 10: Ro bustness check using two-step system GMM for investment efficiency

	Panel A			Panel B		
Variables	Overall	Constrained	Unconstrained	Overall	Constrained	Unconstrained
Inv_Eff						
L_Inv	0.5375*** (0.0622)	0.5514*** (0.1004)	0.1834** (0.0743)	0.2453*** (0.0902)	0.2148*** (0.0649)	0.4122*** (0.0883)
CashFlow	0.0906*** (0.0039)	0.0793*** (0.0021)	0.0898*** (0.0008)	0.0865*** (0.0018)	0.0865*** (0.0018)	0.0538*** (0.0109)
Fin_Cons	0.0002*** (0.0001)	0.0001 (0.0001)	-0.0220*** (0.0039)	0.0001* (0.0001)	0.0002*** (0.0001)	-0.0088*** (0.0018)
EQ				0.0193*** (0.0047)	0.0246* (0.0146)	0.0180 (0.0129)
CashFlow*EQ				0.0100*** (0.0011)	-0.0157*** (0.0020)	0.0737*** (0.0209)
Fin_Cons*EQ				0.0021** (0.0003)	0.0017** (0.0007)	-0.0011 (0.0001)
TQ	-0.0002 (0.0002)	-0.0004*** (0.0001)	-0.0013 (0.0011)	-0.0001 (0.0002)	-0.0001*** (0.0001)	0.0006 (0.0006)
FirmGrow	0.0068*** (0.0009)	0.0003*** (0.0001)	0.0006 (0.0019)	0.0049*** (0.0011)	0.0444*** (0.0158)	0.0012 (0.0013)
Tang	0.0233** (0.0093)	0.0419* (0.0230)	0.0183*** (0.0051)	0.0068*** (0.0024)	-0.0012 (0.0017)	0.0054** (0.0025)
Size	-0.0002 (0.0004)	-0.0013** (0.0005)	-0.0031*** (0.0006)	0.0010** (0.0004)	0.0007* (0.0004)	-0.0015*** (0.0003)
Inters_Cov	0.0004 (0.0004)	-0.0043 (0.0051)	-0.0005*** (0.0001)	0.0006 (0.0004)	0.0056*** (0.0020)	-0.0002*** (0.0001)
Age	-0.0006 (0.0006)	-0.0014 (0.0016)	-0.0004 (0.0013)	-0.0001 (0.0005)	-0.0003 (0.0003)	-0.0010 (0.0008)
Div	-0.0065 (0.0060)	-0.0034 (0.0022)	-0.0001 (0.0041)	-0.0053 (0.0034)	-0.0104 (0.0087)	-0.0091 (0.0099)
Lev	0.0034* (0.0019)	0.0062*** (0.0020)	0.0060** (0.0024)	-0.0052*** (0.0016)	-0.0018 (0.0046)	0.0010 (0.0013)
Reg_Q	0.0027 (0.0059)	0.0163** (0.0079)	0.0075 (0.0051)	-0.0041* (0.0024)	-0.0004 (0.0007)	0.0009 (0.0007)
Constant	0.2465*** (0.0341)	0.2859*** (0.0712)	2.9900*** (3.0309)	0.3964*** (0.0475)	0.0734 (0.1428)	29.2086*** (5.9850)
CountryDummy	Yes	Yes	Yes	Yes	Yes	Yes
YearDummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,062	3,305	692	4,062	3,305	692
AR(2)	0.119	0.332	0.223	0.142	0.185	0.232
Hansen test	0.394	0.219	0.268	0.113	0.5	0.105

Table 11: Robustness check using two-step system GMM for overinvestment

Variables	Panel A			Panel B		
	Overall	Constrained	Unconstrained	Overall	Constrained	Unconstrained
Over_Inv						
L_ Over_Inv	0.1215*** (0.0040)	0.0865*** (0.0048)	0.1355*** (0.0218)	0.1196*** (0.0041)	0.0871** (0.0410)	0.1094*** (0.0290)
CashFlow	0.0970*** (0.0009)	0.0858*** (0.0009)	0.1022*** (0.0033)	0.0962*** (0.0009)	0.1160*** (0.0304)	0.1033*** (0.0077)
Fin_Cons	0.0002** (0.0001)	-0.0020 (0.0004)	-0.0350*** (0.0105)	0.0001* (0.0001)	-0.0002 (0.0002)	0.0018** (0.0007)
EQ				0.0040*** (0.0006)	0.0050 (0.0118)	-0.0197*** (0.0064)
CashFlow*EQ				-0.0022*** (0.0003)	-0.0237 (0.0792)	0.0591** (0.0288)
Fin_Cons*E				0.0030*** (0.0005)	0.0004** (0.0002)	-0.0029*** (0.0011)
TQ	0.0001*** (0.0001)	0.0007*** (0.0001)	-0.0009*** (0.0003)	0.0001*** (0.0001)	-0.0003 (0.0006)	-0.0010*** (0.0004)
FirmGrow	0.0035*** (0.0002)	0.0038*** (0.0002)	0.0067*** (0.0007)	0.0013*** (0.0004)	0.0020 (0.0031)	0.0078*** (0.0027)
Tang		0.0013*** (0.0002)	0.0065** (0.0032)	0.0004 (0.0004)	0.0014 (0.0016)	0.0031 (0.0039)
Size	0.0001 (0.0001)	0.0002*** (0.0001)	0.0001 (0.0003)	0.0010 (0.0002)	-0.0030 (0.0002)	0.0002 (0.0003)
Inters_Cov	-0.0021 (0.0004)	0.0005*** (0.0002)	0.0236 (0.0264)	-0.0020 (0.0003)	0.0006 (0.0007)	-0.0344 (0.0423)
Age	-0.0002 (0.0002)	-0.0003** (0.0002)	0.0005 (0.0007)	-0.0002 (0.0002)	-0.0002 (0.0003)	0.0010 (0.0007)
Div	-0.0004*** (0.0001)	-0.0004*** (0.0001)	-0.0158*** (0.0033)	-0.0004*** (0.0001)	-0.0028 (0.0022)	-0.0052 (0.0068)
Lev	0.0046*** (0.0003)	0.0049*** (0.0001)	0.0036*** (0.0010)	0.0047*** (0.0003)	0.0058*** (0.0017)	0.0037*** (0.0012)
Reg_Q	-0.0008*** (0.0003)	-0.0039*** (0.0003)	0.0070** (0.0031)	-0.0008*** (0.0003)	-0.0003 (0.0004)	0.0082** (0.0032)
Constant	0.4740*** (0.0021)	0.4880*** (0.0032)	0.1817 (0.3109)	0.4746*** (0.0022)	0.4855*** (0.0218)	0.8823* (0.4942)
CountryDummy	yes	yes	yes	yes	yes	yes
YearDummy	yes	yes	yes	yes	yes	yes
Observations	1,538	1,055	447	1,538	1,053	447
AR(2)	0.392	0.315	0.381	0.327	0.62	0.193
Hansen test	0.52	0.539	0.672	0.536	0.869	0.589

Table 12: Robustness check using two step system GMM for underinvestment

Variables	Panel A			Panel B		
	Overall	constrained	unconstrained	Overall	constrained	unconstrained
Under_Inv						
L_ Under_Inv	0.4147*** (0.0094)	0.2709*** (0.0158)	0.3341*** (0.0644)	0.3630*** (0.0086)	0.3140*** (0.0647)	0.3549*** (0.1176)
CashFlow	0.0371*** (0.0008)	0.0436*** (0.0016)	0.0572*** (0.0036)	0.0407*** (0.0012)	0.0358*** (0.0089)	0.0495*** (0.0136)
Fin_Cons	0.0030* (0.0005)	0.0021*** (0.0004)	-0.0104*** (0.0029)	0.0011 (0.0002)	-0.0007 (0.0005)	-0.0017 (0.0002)
EQ				-0.0026 (0.0017)	0.0105** (0.0050)	-0.0050 (0.0176)
CashFlow*EQ				-0.0004** (0.0002)	-0.0053* (0.0031)	0.1906 (0.3737)
Fin_Cons*EQ				-0.0707*** (0.0012)	-0.0541 (0.0333)	0.0872* (0.0450)
TQ	-0.0002*** (0.0001)	-0.0003*** (0.0001)	-0.0037*** (0.0009)	-0.0002*** (0.0001)	-0.0013*** (0.0003)	-0.0016 (0.0020)
FirmGrow	0.0039*** (0.0002)	0.0030*** (0.0004)	0.0006 (0.0007)	0.0037*** (0.0004)	0.0006*** (0.0002)	0.0017 (0.0014)
Tang	0.0006 (0.0005)	0.0008 (0.0010)	0.0039 (0.0038)	0.0018*** (0.0007)	0.0010 (0.0008)	0.0021 (0.0030)
Size	0.0001** (0.0001)	0.0002*** (0.0001)	-0.0008** (0.0003)	0.0010 (0.0002)	0.0002 (0.0001)	-0.0006 (0.0006)
Inters_Cov	0.0001*** (0.0001)	-0.0010 (0.0007)	0.0000*** (0.0001)	0.0001** (0.0001)	0.0027 (0.0018)	0.0304*** (0.0058)
Age	0.0001 (0.0001)	-0.0010 (0.0001)	-0.0002 (0.0005)	0.0011 (0.0001)	0.0002 (0.0002)	-0.0004 (0.0010)
Div	0.0007** (0.0003)	0.0084 (0.0064)	0.0012 (0.0009)	0.0001 (0.0003)	0.0042 (0.0114)	0.0003 (0.0019)
Lev	-0.0001 (0.0002)	0.0001 (0.0004)	0.0016** (0.0007)	0.0013*** (0.0002)	-0.0033 (0.0041)	0.0023 (0.0017)
Reg_Q	-0.0001 (0.0004)	0.0005 (0.0006)	0.0043*** (0.0015)	0.0008** (0.0004)	0.0012 (0.0011)	0.0033 (0.0022)
Constant	0.3137*** (0.0050)	0.3994*** (0.0101)	0.0001 (0.0001)	0.3429*** (0.0045)	0.3512*** (0.0344)	0.0000 (0.0000)
CountryDummy	yes	yes	yes	yes	yes	yes
YearDummy	yes	yes	yes	yes	yes	yes
Observations	1,875	1,680	173	1,875	1,663	173
AR(2)	0.378	0.201	0.252	0.307	0.671	0.51
Hansen test	0.201	0.286	0.57	0.397	0.549	0.9

V. Conclusion

The study's main objective was to examine the effects of financing constraints on firm investment efficiency and the role of earning quality has in moderating this effect among African firms. Many studies showed that financial constraints have a limited impact on firm investment decisions. We extend this to the African context by providing robust results for different proxies and empirical evidence on the relationship between financing constraints, earning quality, and investment efficiency. Our findings confirmed that investment efficiency is sensitive to cash flow based on the agency and investment theory when the firms are externally constrained. They use internal cash flow to make their investment for African firms. It is more pronounced in financially constrained firms than unconstrained firms. The estimated result proved that constrained firms more likely overinvest than unconstrained using their internal cash flow. The external financing constraints level is more pronounced for constrained firms than unconstrained ones. The

underinvestment is very sensitive to cash flow for constrained firms than unconstrained firms.

Based on corporate governance and financial disclosure theory, we showed that earning quality has conditional effects on the relationship between financing constraints and investment inefficiency. The results reveal that earning quality reduces the relationship between financing constraints and investment efficiency. The firm with high earning quality can avoid financing constraints to finance their projects by avoiding overinvestment and underinvestment of both constrained and unconstrained firms

In conclusion, we believe this study contributes to the literature in four ways; first, this study links corporate finance and corporate governance theories by showing how corporate governance tools, namely corporate financial disclosure (earning quality), could play a role in easing financing constraint effects on firm investment decisions. Second, we contributed to the literature by showing how financial constraints and accounting quality impact the two investment inefficiency scenarios, overinvestment, and underinvestment using the Africa data set where prior studies were overlooked to investigate. Third, the study gives a signal showing that earning quality, as a corporate governance tool, can avoid financing constraints and improve investment efficiency. We believe this crucial addition to the literature shows evidence from the developing world where prior studies concluded that the value relevance of financial reporting quality is non-existent. Fourth, since the first to study a data set from Africa, we believe it has a valuable contribution to the literature by showing that the effect of financing constraints is conditional to the firm's earning quality. We contribute to the literature by evidencing that earning quality could mitigate overinvestment and underinvestment using data set from developing countries. We break this conclusion by showing that accounting information has excellent relevance in firm economic (investment) decisions in developing countries as it does for advanced nations.

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Determinants of Financial Performance of Commercial Banks in Bangladesh: An Empirical Study on Private Commercial Banks

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Abstract- The banking sector is one of the most important financial sectors of an economy and they play a vital role to strengthen the whole economy and its growth. The regulation of banking in developing countries has increasingly focused on attaining financial stability and soundness. The study focused on the determinants of the financial performance of the private commercial banks in Bangladesh. Conveniences and judgmental sampling were used. 20 private commercial banks are sampled for the study with time-series data from the year 2008 to the year 2017. The panel data analyses show that bank-specific factors have a significant effect on the financial performance of private commercial banks in Bangladesh while macroeconomic factors have insignificant participation.

Keywords: financial stability; financial performance; assets utilization; ROA; ROE; ROCE; NIM.

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Determinants of Financial Performance of Commercial Banks in Bangladesh: An Empirical Study on Private Commercial Banks

Nilanjan Kumar Saha [α] & Prodip Chandra Bishwas [σ]

Abstract- The banking sector is one of the most important financial sectors of an economy and they play a vital role to strengthen the whole economy and its growth. The regulation of banking in developing countries has increasingly focused on attaining financial stability and soundness. The study focused on the determinants of the financial performance of the private commercial banks in Bangladesh. Conveniences and judgmental sampling were used. 20 private commercial banks are sampled for the study with time-series data from the year 2008 to the year 2017. The panel data analyses show that bank-specific factors have a significant effect on the financial performance of private commercial banks in Bangladesh while macroeconomic factors have insignificant participation. It also x-rays that non-performing loans and leverage ratios have a highly significant influence on the bank's performance. It is prescribed that private commercial banks of Bangladesh should focus on high asset quality, strong management, asset utilization, increased non-interest income, and efficient utilization of the operating expenses for their better financial performance, stability, and soundness.

Keywords: financial stability; financial performance; assets utilization; ROA; ROE; ROCE; NIM.

I. Introduction

The banking sector is one of the most significant financial sectors of an economy and they play an indispensable role to strengthen the whole economy and its growth. Economic growth is one of the final goals of any economic system and the development of the financial sector accelerates economic growth (Petkovski and Kjosevski, 2014). This sector is also a very important sector for a country as it helps to formulate capital and accelerate the investment, create the medium of exchange, help in export and import, control the credit, promote industrial development and also implement the monetary policy of the government. Therefore, the stability and the solvency of the bank have to be checked so that it can earn enough profit to survive in the long run. Banking sector stability appears to be an important driver of GDP growth and a stable banking sector reduces real output growth uncertainty (Jokipii and Monnin, 2013). The financial sector of Bangladesh constitutes banks, non-bank financial institutions (NBFIs), and insurance companies. Among them, the banking sector is the prime one. The banking sector of Bangladesh is growing day by day and it constitutes the core position in the country's financial sector. Therefore, it is very important to check the determinants of the financial performance of this sector as the financial performance is the main concern that is needed to run this sector smoothly. The bankers' committee of Bangladesh Bank fixes the planned allocation of resources among sectors and regions to attain balanced local sector development (Kamal, 2006).

a) *Objectives of the study:* The main objective of the study is to investigate the determinants of financial performance of commercial banks in Bangladesh. To achieve the main objective, it is needed to achieve other supporting objectives.

1. To examine the effect of Bank specific factors (i.e. Bank SIZE, CAR, MER, LR, NPLs, and LLP) on financial performance of Private Commercial Banks (PCBs) in Bangladesh.
2. To examine the effect of Macroeconomic variable (i.e. GDP, and inflation rate) on financial performance of PCBs in Bangladesh.
3. To formulate some recommendations based on the empirical results and analysis.

II. Literature Review

The financial sector of a country especially Banks and Non-Bank Financial Institutions (NBFIs) plays a very vital role in an economy. It helps to mobilize more savings, create a strong flow of funds, and a better productive expenditure in the economy of a country. The sectorial extension rate of Gross Domestic Product (GDP) in the financial sector for the financial year 2016-2017 and 2017-2018 was 3.91 percent and 3.93 percent respectively (Bangladesh Bureau of Statistics, 2019). As this sector has a great impact on the economy of Bangladesh, the financial performance of this sector has received a lot of attention in recent years. According to (Teshome, Debela, and Sultan, 2018), Capital Adequacy Ratio (CAR), Credit Interest Income (CIR) and size of the bank (SIZE) have a positive and statistically significant effect on financial performance while Non-performing

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Loans (NPLs), Loan Loss Provision (LLP), Leverage Ratio (LR) have a negative and statistically significant influence. They suggested that Ethiopian banks should manage their loan, be cost-efficient, and fix their leverage ratio to enhance their profitability. In contrast, it is also found that both inner and outer factors have a powerful influence on the profitability (Gul, Irshad and Zaman, 2011).

Research run on Sri Lankan Licensed Commercial Banks (LCBs) explored that banks performance in Sri Lanka only affected by the operating expenses and bank size while credit ratio, liquidity ratio, and capital strength ratio are not statistically significant and do not contribute towards the performance of LCBs of Sri Lanka (Swarnapali, 2014). Chouikh and Blagui (2017); (Sufian and Chong, 2008) examined the determinants of bank's performance on Tunisian banks and found that there is a significant and negative relationship between bank's financial performance and board size of banks while other variables like privatization, capital-to-assets ratios, and macroeconomic variables. Rekik and Kalai (2017) analyzed the determinants of bank profitability and efficiency in conventional banks. They found that cost efficiency has little impact on profitability and profit efficiency. They also found that almost all the banks are below the optimal size.

H_1: Bank Size has a positive and significant relationship with the banks financial performance.

According to Udom and Onyekachi R. (2018) capital adequacy strongly and actively incite, promote, and grow the financial performance of commercial banks and that adequacy of capital and adequate management can interpret to improved performance. There is a positive and significant relationship between Capital Adequacy and Financial Performance (Amahalu and et al., 2017; Adekunle Muraina, 2018).). They also recommend that banks should avoid overreliance on debt, as an increase in the proportion of debt in the capital structure increases the financial risk and the risk of financial distress and bankruptcy. In contrast, according to Çekrezi and et al. (2015) capital adequacy has a negative influence on the bank's financial performance.

H_2: Capital Adequacy has a positive and significant relation with the banks financial performance

A study on Kenyan bank revealed that there is a negative relationship of banks profitability with liquidity while capital adequacy ratio, assets quality, and management efficiency directly affect the bank's financial performance (Kamande, Zablon and Ariemba, 2016). Another study done by Ongore and Kusa (2013) stated that the financial performance of commercial banks in Kenya is motivated mainly by board and management decisions. A paper done by Frederick, (2014) showed that Management efficiency, operating expenses, capital adequacy, interest income, and inflation are significant factors affecting the performance of domestic commercial banks in Uganda. Another paper based on Bangladeshi commercial banks has done by Yesmine and Bhuiyah (2015) scrutinized that asset utilization and operating efficiency have a significant positive impact on the bank's financial performance. Another study had done on the Tunisian banking sector found that bank performance is positively correlated to capitalization, privatization, and quotation while bank size, concentration index, and efficiency are negatively related (Nouaili, Abaoub and Ochi, 2015; Bayoud, Sifouh and Chemlal, 2018). A study done on Kenyan banks suggested that commercial banks needed to embrace financial management practices in order to achieve targeted financial performance (Mujuka, 2018).

H_3: Management Efficiency has a positive and significant relation with the banks financial performance.

The leverage ratio evaluates a company's debt level and it has an impact on the bank's financial performance. A study done on Indian commercial banks (Al-Homaidi et al., 2018) revealed that leverage ratio is a highly significant variable of profitability in the context of Indian commercial banks. According to Pradhan and Khadka (2017) banks' profitability is negatively related to the leverage ratio.

H_4: Leverage ratio has a positive and significant relation with the banks financial performance.

A nonperforming loan (NPL) is a sum of obtained money upon which the borrower has not made the programmed payments for an itemized time. Kingu, Macha and Gwahula (2018) discovered that the appearance of non-performing loans is negatively linked with the level of profitability in commercial banks in Tanzania. It is also found that there is a negative relationship between non-performing loans and the bank's financial performance (Akter and Roy, 2017).

H_5: Non-performing loan ratio has a negative and significant relation with the banks financial performance.

Loan loss provision is a set of expenses that has to be stored as an allowance for the uncollected loans and loan payments. This provision is often used for potential losses arising from bad debts, customer defaults, and renegotiated of a term loan. Holding less loan loss provision and tremendous profitability moreover, bank deposits, and its advances also play an important role in the durability and profitability of banks (Tahir, Ahmad and Aziz, 2014). Many studies show that there is a negative impact of loan loss provision on the bank's financial performance (Alhadab and Alsahawneh, 2016; Mustafa, Ansari and Younis, 2012).

H_6: Loan loss provision ratio has a negative and significant relation with the banks financial performance.

There are some macroeconomic factors like Gross Domestic Product (GDP), Inflation, Growth of money supply, Market capitalization, Business cycle, and Interest rate. These factors have some impact on the bank's financial performance. Among these factors GDP and inflation rate play an essential role in the banks' financial performance. According to Osamwonyi and Michael (2014) GDP has a positive and significant influence on the bank's financial performance while inflation has a negative relationship. In contrast, Kanwal and Nadeem (2013); Evans and Kiganda (2014) found that both GDP and inflation have a negative and insignificant relationship with the bank's financial performance.

H_7: GDP has a negative and insignificant relationship with the banks financial performance.

H_8: Inflation has a negative and insignificant relationship with the banks financial performance.

Sufian and Habibullah (2009) investigate the performance of 37 Bangladeshi commercial banks between 1997 and 2004. Their conclusions recommended that bank-specific characteristics, in special loan intensity, credit risk, and cost have positive and significant influences on bank performance, while non-interest income displays a negative relationship with bank profitability. Their study also found that the impact of size is not uniform across the various measures employed and macroeconomic indicators have no significant influence on bank profitability except inflation.

III. Methodology

a) Research Design

This study is based on secondary data retrieved from the published financial statements of the sampled private commercial banks of Bangladesh listed in the Dhaka Stock Exchange (DSE) from the year 2008 to 2017. The study uses a panel data regression model because of its advantages. Panel data discuss the behavior of each bank over time and across space.

b) Sample of the Study

In Bangladesh, 57 scheduled banks are comprising 4 state-owned banks, 39 privately-owned banks, 9 foreign banks, and 5 are specialized banks. The study excluded stated-owned banks, specialized banks, and foreign banks having branches in Bangladesh. The study includes only the banks which are enlisted in the Dhaka Stock Exchange before 2008. The study uses various data from 20 private commercial banks in Bangladesh. They are; Bank Asia Limited, United Commercial Bank Limited, Dutch Bangla Bank Limited, Islami Bank Bangladesh Limited, International Finance Investment and Commerce Bank Limited, Uttara Bank Limited, Pubali Bank Limited, City Bank Limited, Eastern Bank Limited, National Credit and Commerce Bank Limited, Social Islami Bank Limited, Prime Bank Limited, Dhaka Bank Limited, Mercantile Bank Limited, One Bank Limited, Southeast Bank Limited, BRAC Bank Limited, Mutual Trust Bank Limited, Al-Arafah Islami Bank Limited and Export-Import Bank of Bangladesh Limited.

Table 3.1: Variable's measurement and notation

c) Variables of the Study

Dependent Variables	Measurement	Notation
1. Return on Equity	$\frac{Net\ Income}{Total\ Shareholder's\ Equity}$	ROE
2. Return on Assets	$\frac{Net\ Income}{Total\ Assets}$	ROA
3. Net Interest Margin	$\frac{Interest\ Income - Interest\ Expenses}{Total\ Assets}$	NIM
4. Return on Capital Employed	$\frac{Earning\ Before\ Interest\ and\ Taxes}{Shareholder's\ Equity + Long\ Term\ Debts}$	ROCE

Independent Variables	Measurement	Notation
1. Bank Size (Total Assets)	Total Assets	Size
2. Non-Performing Loan Ratio	$\frac{Total\ Loans - performing\ Loans}{Total\ Loans}$	NPLs
3. Loan Loss Provision Ratio	$\frac{Total\ Loan\ Loss\ Provision}{Total\ Loans}$	LLP
4. Leverage Ratio	$\frac{Total\ Debt}{Total\ Shareholder's\ Equity}$	LR
5. Capital Adequacy Ratio	$\frac{Tier\ I\ Capital + Tier\ II\ Capital}{Total\ Risk\ Weighted\ Assets}$	CAR

6. Management Efficiency Ratio	$\frac{Total\ Operating\ Revenue}{Total\ Profit}$	MER
7. Gross Domestic Product	Annual Gross Domestic Product of Bangladesh.	GDP
8. Inflation Rate	Annual Inflation Rate of Bangladesh.	IR

d) Model Specification

The following models are developed based on the variable of the study:

$$ROA_{it} = \alpha + \beta_1 CAR_{it} + \beta_2 Size_{it} + \beta_3 LR_{it} + \beta_4 LLP_{it} + \beta_5 MER_{it} + \beta_6 NPLs_{it} + \beta_7 GPD_{it} + \beta_8 IR_{it} + \varepsilon_{it} \ldots\ldots\ldots (1)$$

$$ROE_{it} = \alpha + \beta_1 CAR_{it} + \beta_2 Size_{it} + \beta_3 LR_{it} + \beta_4 LLP_{it} + \beta_5 MER_{it} + \beta_6 NPLs_{it} + \beta_7 GPD_{it} + \beta_8 IR_{it} + \varepsilon_{it} \ldots\ldots\ldots (2)$$

$$ROCE_{it} = \alpha + \beta_1 CAR_{it} + \beta_2 Size_{it} + \beta_3 LR_{it} + \beta_4 LLP_{it} + \beta_5 MER_{it} + \beta_6 NPLs_{it} + \beta_7 GPD_{it} + \beta_8 IR_{it} + \varepsilon_{it} \ldots\ldots\ldots (3)$$

$$NIM_{it} = \alpha + \beta_1 CAR_{it} + \beta_2 Size_{it} + \beta_3 LR_{it} + \beta_4 LLP_{it} + \beta_5 MER_{it} + \beta_6 NPLs_{it} + \beta_7 GPD_{it} + \beta_8 IR_{it} + \varepsilon_{it} \ldots\ldots\ldots (4)$$

Where,

- α = Interpret
- ROA_{it} = Return on Assets of bank *i* at time *t*
- ROE_{it} = Return on Equity of bank *i* at time *t*
- $ROCE_{it}$ = Return on Capital Employed of bank *i* at time *t*
- NIM_{it} = Net Interest Margin of bank *i* at time *t*
- CAR_{it} = Capital Adequacy Ratio of bank *i* at time *t*
- $Size_{it}$ = Size of bank *i* at time *t*
- LR_{it} = Leverage Ratio of bank *i* at time *t*
- LLP_{it} = Loan Loss Provision Ratio of bank *i* at time *t*
- MER_{it} = Management Efficiency Ratio of bank *i* at time *t*
- $NPLs_{it}$ = Non-performing Loan Ratio of bank *i* at time *t*
- GPD_{it} = Gross Domestic Product (GDP) at time *t*
- IR_{it} = Inflation rate at time *t*
- ε_{it} = Error term

IV. Empirical Analysis and Results

The study uses 10 years of data from the year 2008 to 2017 of 20 private commercial banks (PCBs) of Bangladesh. We run panel regression, Hausman test, and trend analysis to analyze the financial performance of PCBs of Bangladesh.

a) Trend Analysis of Financial Performance of Private Commercial Banks in Bangladesh

The following figure shows the trend of the financial performance of the private commercial banks in Bangladesh from the year 2008 to 2017 as expressed by average Return on Assets (ROA), Return on Equity (ROE), Return on Capital Employed (ROCE) and Net Interest Margin (NIM).

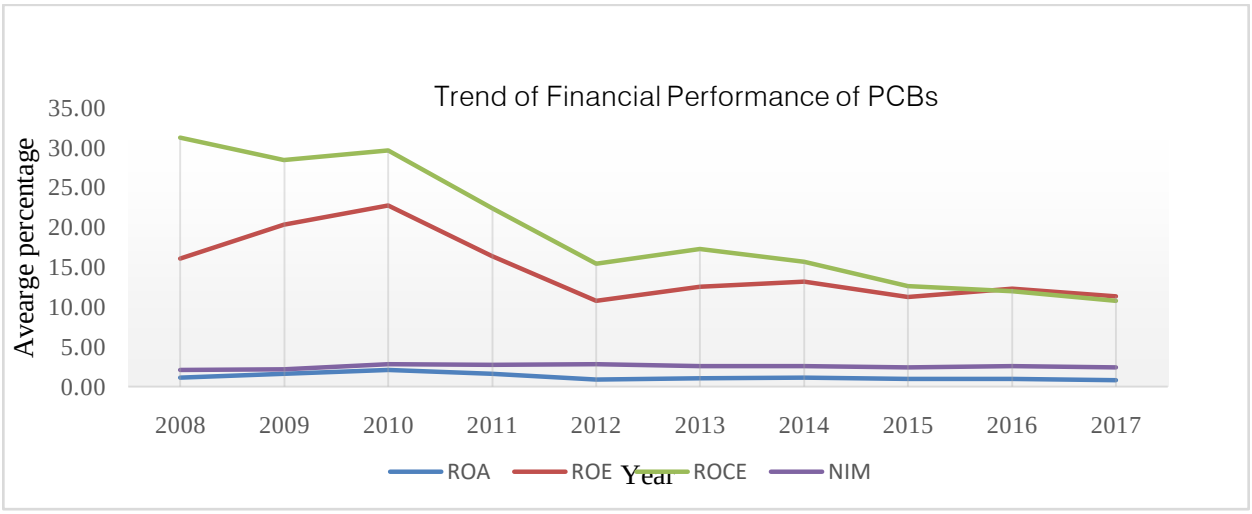

Figure 4.1: Trend Analysis of Financial Performance of PCBs in Bangladesh

The above figure 4.1 has shown an erratic trend of the financial performance of the private commercial banks in Bangladesh. It shows that among the performance indicators Net Interest Margin (NIM) shows consistent performance over the period. The average NIM is almost the same in all the year. Return on Assets (ROA) also shows a consistent performance of the banks. On the other hand, Return on Equity (ROE) and Return on Capital Employed (ROCE) are in a declining position over the years. The ROE and ROCE were 16.06 percent and 31.19 percent in the year 2008 respectively and they declined at 11.32 percent and10.73 percent respectively in the year 2017. This is happened because of an increase in the amount of total shareholder's equity and total long term debts of the banks. ROA and NIM show that it is profitable to invest in the private commercial banks in Bangladesh.

b) Analysis of stata output

To analyze the hypotheses, a panel regression was run by the stata, a statistical data analysis software. The results of the analysis are discussed here.

i. *Results of Model 1*

The Hausman test for the first model as described by equation (1) (Table 4.1) that the p-value is equal to 0.5092. It follows that we do not reject the null hypothesis that there is no misspecification. As a result, the model 1 will be estimated using the Random Effect (RE) model.

Table 4.1: Hausman test for Model 1

Hausman test for Model 1			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	P-value
Cross-section random	6.26	7	0.5092

As shown in Table 4.2 below, the estimation of the underlying model 1 leads to the following results.

Table 4.2: Model 1 Estimation using Random Effects

Model 1 Estimation using RE				
Variable	Coefficient estimate	Standard error	z-statistic	P-value
Constant	.4766875	.5894122	0.81	0.419
LLP	-.0345634	.0238477	-1.45	0.147
CAR	.0276288	.024352	1.13	0.257
NPL	-.0038738	.0088307	-0.44	0.661
SIZE	-6.19e-07	3.87e-07	-1.60	0.110
MER	-.0005846	.0005551	-1.05	0.292
LR	-.0001667	.000095	-1.75	0.080
Inflation	.1410019	.0208599	6.76	0.000
GDP	-.0120971	.0701581	-0.17	0.863

According to the model estimation output, all the independent variables in model 1 except inflation are statistically insignificant as that their p-values are greater than 5 percent. The interpret (The Constant) is also statistically not significant. Therefore, ROA as an indicator of bank performance is not statistically explained by the underlying determinants. However, some coefficient estimate signs are in line with the underlying hypotheses. Here, LLP, NPL, and GDP are not statistically significant, but their coefficient estimate signs are as predicted by the hypotheses.

The rejection, acceptance and partially acceptance of the hypotheses are recapitulated in Table 4.3

Table 4.3: Summary of the hypotheses Acceptance or Rejection: Model 1

Summary of the hypotheses Acceptance or Rejection: Model 1			
Determinants	Statistical significance	Coefficient estimate sign	Hypothesis confirmed, partially confirmed, or rejected
LLP	Insignificant	Negative	H_6 partially confirmed.
CAR	Insignificant	Positive	H_2 partially confirmed.
NPL	Insignificant	Negative	H_5 partially confirmed.
SIZE	Insignificant	Negative	H_1 is rejected.
MER	Insignificant	Negative	H_3 is rejected.
LR	Insignificant	Negative	H_4 is rejected.

Inflation	Significant	Positive	H_8 is rejected.
GDP	Insignificant	Negative	H_7 is confirmed.

c) Results of Model 2

The Hausman test for the first model as described by equation (2) shows (Table 4.4) that the p-value is equal to 0.3863. It follows that we can't reject the null hypothesis that there is no misspecification. As a result, the model 2 will be estimated using the Random Effect (RE) model.

Table 4.4: Hausman test for Model 2

Hausman test for Model 2			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	P-value
Cross-section random	7.42	7	0.3863

As shown in Table 4.5 below, the estimation of the underlying model 2 leads to the following results.

Table 4.5: Model 2 Estimation using Fixed Effects

Model 2 Estimation using RE				
Variable	Coefficient estimate	Standard error	t-statistic	P-value
Constant	22.78143	5.842831	3.90	0.000
LLP	-.7137877	.2407248	-2.97	0.003
CAR	-.1686205	.2410095	-0.70	0.484
NPL	-.1966541	.0966913	-2.03	0.042
SIZE	-.0000108	4.09e-06	-2.63	0.009
MER	-.0078263	.0056661	-1.38	0.167
LR	.0025548	.0009634	2.65	0.008
Inflation	1.091984	.2028876	5.38	0.000
GDP	-1.725821	.697543	-2.47	0.013

According to the model estimation output, all the independent variables in model 2 except CAR and MER are statistically significant as that their p-values are lower than 5 percent. The interpret (The Constant) is also statistically significant. Therefore, ROE as a proxy of bank performance is statistically explained by the underlying determinants. However, some coefficient estimate signs are in line with the underlying hypotheses. Here, H4, H5, and H6 are fully in line with the underlying hypotheses.

The rejection, acceptance and partially acceptance of the hypotheses are recapitulated in Table 4.6

Table 4.6: Summary of the hypotheses Acceptance or Rejection: Model 2

Summary of the hypotheses Acceptance or Rejection: Model 2			
Determinants	Statistical significance	Coefficient estimate sign	Hypothesis confirmed, partially confirmed, or rejected
LLP	Significant	Negative	H_6 is confirmed.
CAR	Insignificant	Negative	H_2 is rejected.
NPL	Significant	Negative	H_5 is confirmed.
SIZE	Significant	Negative	H_1 partially confirmed.
MER	Insignificant	Negative	H_3 is rejected.
LR	Significant	Positive	H_4 is confirmed.
Inflation	Significant	Positive	H_8 is rejected.
GDP	Significant	Negative	H_7 partially confirmed.

d) Results of Model 3

The Hausman test for the first model as described by equation (3) shows (Table 4.7) that the p-value is equal to 0.0082. It follows that we do reject the null hypothesis that there is misspecification. As a result, the model 3 will be estimated using the Fixed Effect (FE) model.

Table 4.7: Hausman test for Model 3

Hausman test for Model 3			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	P-value
Cross-section random	19.00	7	0.0082

As shown in Table 4.8 below, the estimation of the underlying model 3 leads to the following results.

Table 4.8: Model 3 Estimation using Fixed Effects

Model 3 Estimation using FE				
Variable	Coefficient estimate	Standard error	t-statistic	P-value
Constant	73.28357	10.13435	7.23	0.000
LLP	-.77821	.4300274	-1.81	0.072
CAR	-1.456998	.4074802	-3.58	0.000
NPL	-.1481633	.2543512	-0.58	0.561
SIZE	-.0000345	8.59e-06	-4.02	0.000
MER	-.0243956	.0104813	-2.33	0.021
LR	-.0071173	.0017551	-4.06	0.000
Inflation	.3468724	.3314238	1.05	0.297
GDP	-3.054776	1.232126	-2.48	0.014

Model 3 shows that all the independent variables except LLP, NPL, and inflation are statistically significant as that their p-values are lower than 5 percent. The interpret (The Constant) is also statistically significant. Therefore, ROCE as an indicator of bank performance is statistically explained by the underlying determinants. However, some coefficient estimate signs are in line with the underlying hypotheses. Here, all the determinants are partially confirmed by the model.

The rejection, acceptance and partially acceptance of the hypotheses are recapitulated in Table 4.9

Table 4.9: Summary of the hypotheses Acceptance or Rejection: Model 3

Summary of the hypotheses Acceptance or Rejection: Model 3			
Determinants	Statistical significance	Coefficient estimate sign	Hypothesis confirmed, partially confirmed, or rejected
LLP	Insignificant	Negative	H_6 partially confirmed.
CAR	Significant	Negative	H_2 partially confirmed.
NPL	Insignificant	Negative	H_5 partially confirmed.
SIZE	Significant	Negative	H_1 partially confirmed.
MER	Significant	Negative	H_3 partially confirmed.
LR	Significant	Negative	H_4 partially confirmed.
Inflation	Insignificant	Positive	H_8 partially confirmed.
GDP	Significant	Negative	H_7 partially confirmed.

e) Results of Model 4

The Hausman test for the fourth model as described by equation (4) shows (Table 4.10) that the p-value is equal to 0.9162. It follows that we do not reject the null hypothesis that there is no misspecification. As a result, the model 4 will be estimated using the Random Effect (RE) model.

Table 4.10: Hausman test for Model 4

Hausman test for Model 4			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	P-value
Cross-section random	2.64	7	0.9162

As shown in Table 4.11 below, the estimation of the underlying model 4 leads to the following results.

Table 4.11: Model 4 Estimation using Random Effects

Model 4 Estimation using RE				
Variable	Coefficient estimate	Standard error	z-statistic	P-value
Constant	.4317311	.9435643	0.46	0.647
LLP	.1042474	.208323	2.65	0.008
CAR	.0121749	.0376943	0.32	0.747
NPL	-.040469	.0205358	-1.97	0.049
SIZE	-9.71e-07	7.51e-07	-1.29	0.196
MER	-.0008081	.0009497	-0.85	0.395
LR	.0005289	.0001595	3.32	0.001
Inflation	.0639343	.0308005	2.08	0.038
GDP	.208323	.112287	1.86	0.064

According to the model estimation output in model 4 LLP, NPL, LR and Inflation are statistically significant with p-values lower than 5 percent while CAR, SIZE, MER, and GDP are statistically insignificant as that their p-values are greater than 5 percent. The interpret (The Constant) is also statistically not significant. However, NIM as an indicator of bank performance is statistically explained by LLP, NPL, LR, and Inflation. CAR and GDP are not statistically significant, but their coefficient estimate signs are as predicted by the hypotheses.

The rejection, acceptance and partially acceptance of the hypotheses are recapitulated in Table 4.12

Table 4.12: Summary of the hypotheses Acceptance or Rejection: Model 4

Summary of the hypotheses Acceptance or Rejection: Model 4			
Determinants	Statistical significance	Coefficient estimate sign	Hypothesis confirmed, partially confirmed, or rejected
LLP	Significant	Positive	H_6 partially confirmed.
CAR	Insignificant	Positive	H_2 partially confirmed.
NPL	Significant	Negative	H_5 is confirmed.
SIZE	Insignificant	Negative	H_1 is rejected.
MER	Insignificant	Negative	H_3 is rejected.
LR	Significant	Positive	H_4 is confirmed.
Inflation	Significant	Positive	H_8 is rejected.
GDP	Insignificant	Positive	H_7 partially confirmed.

Amongst the four models, the first one is eliminated because it is statistically insignificant. The remaining models are model 2, model 3, and model 4, wherein, bank performance is measured by ROE, ROCE, and NIM respectively. Model 1 has an R^2 equal to 0.3554 which means 35.54 percent of the dependent variable is explained by the independent variables. Model 2 has an R^2 equal to 0.3621 which means 36.21 percent of the dependent variable is explained by the independent variables. Model 3 has an R^2 equal to 0.2991 which defines 29.91 percent of the dependent variable is explained by the independent variables. Model 4 has an R^2 equal to 0.1071 which means 10.71 percent of the dependent variable is explained by the independent variables. Therefore, Model 2, where ROE is the dependent variable has been chosen as it has the highest R^2.

V. Findings of the Study

The experimental findings from the analysis are disputed below:

1. The empirical findings of the study suggest that all the bank-specific determinants have a great influence on the financial performance of private commercial banks (PCBs) in Bangladesh.
2. During the period under study, the results suggest that ROE and ROCE are the most important proxy of the financial performance of the PCBs in Bangladesh as they are mostly explained by the determinants of the financial performance.
3. Bank size has a significant but negative relationship with ROE and ROCE.
4. Capital Adequacy has an insignificant but positive relation with ROA and NIM while it is significant but negative with ROCE.
5. Management Efficiency has a lower impact on the financial performance of PCBs in Bangladesh.
6. The leverage ratio has a positive and significant relation with ROE and NIM while it has a significant but negative relation with ROCE.
7. Non-performing Loan ratio has an insignificant and Negative impact on ROA and ROCE. It has also a significant but negative impact on ROE and NIM.
8. Loan loss provision ratio has an insignificant and negative relation with ROA and ROCE but this

hypothesis is confirmed by ROE and also partially confirmed by NIM.

9. Gross Domestic Product has a significant influence on ROA while it has a relative influence over ROE, ROCE, and NIM.
10. The inflation rate has too little influence over the financial performance of the PCBs in Bangladesh.

VI. Recommendations

The banking sector of Bangladesh is a growing sector and it plays an important role in the economic growth of Bangladesh. The following recommendations are based on the empirical findings of the study.

1. Banks should be more careful about ensuring high asset quality to achieve better financial performance.
2. Banks should concentrate on the management level of the banks as the better financial performance is related to a better management skill as described by the efficiency structure theory.
3. It is recommended to use an optimum level of debt for finance as it has a significant effect on the financial performance of private commercial banks in Bangladesh.
4. The authority should develop a better policy that leads the banking sector of Bangladesh to enhance the resilience, robustness, stability, and efficiency. A stable banking sector leads to a stable financial performance for the banks.
5. The authority of the respective banks should be careful about their capital including tier 1 capital and tier 2 capital as capital adequacy has a positive impact on the financial performance of the banks.
6. Banks should address more and more new products and services as it leads to profitable banking. It is also added that banks with relatively more advanced technologies achieve better financial performance over its peers.
7. Banks should emphasize finding a better way to obtain the optimal utilization of the resources
8. Banks can also ensure better financial performance by increasing the amount of non-interest income and bank size as bank size has a significant impact on the financial performance of the PCBs in Bangladesh.

VII. Conclusion

The banking sector of Bangladesh is a growing financial sector of the country and it has a strong impact on the economy of Bangladesh. Banks also play a remarkable role in generating employment opportunities, enhancing financial resources, and the overall development of a country. Bank's financial performance is the result of the bank's internal roles, regulation, policies, activities, effectiveness, efficiency, and overall performance in the monetary terms. Banks are the most integral part of the financial sector of any country as they dominate the financial sector by contributing much to the economic growth of the country. The banking sector of Bangladesh is the largest sector of the financial sector of the country as there are 57 running commercial banks. It contributes to enlarge the industrial activities and investment activities. Therefore, this study focus on the determinants of the financial performance of private commercial banks in Bangladesh. It finds that leverage and capital adequacy has a positive influence on the financial performance of PCBs in Bangladesh. During the periods of the study, bank size has a significant influence on the financial performance of the banks. The concerned authority should develop strong and efficient rules, regulations, and policies for a better, stable, and efficient banking sector. Based on the above discussion it can be ended that private commercial banks of Bangladesh should focus on high asset quality, strong management, asset utilization, increased non-interest income, and efficient utilization of the operating expenses for their better financial performance, stability, and soundness.

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Role of Microfinance as a Credit Market Instrument in the Development of SME's in Kashmir Division

By Dr. Suhaila Sikeen Khan

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Keywords: *microfinance, MFI's, SME's, credit market, financial stability, kashmir division.*

GJMBR-C Classification: *JEL Code: G21*

Strictly as per the compliance and regulations of:

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The world bank had estimated that more than 16 million people are served by some 7000 microfinance institutions all over the world which means that around 500 million families benefits from these small loans making new business possible. The Government of India and the RBI have a stated goal of promoting financial inclusion. According to recent RBI Estimates, there are over 450 million "unbanked people or group (budding entrepreneurs)" in India, most of who live in rural areas. The term "unbanked" refers to people who have no access to formal financial services, but rather must rely on either family, or informal providers of finance, such as the village moneylender. It is also generally agreed that relying on these limited resources of village moneylenders exposes the poor to coercive lending practices, personal risks and high interest rates, which can be a much as 150 percent. Therefore the Indian Government and the RBI have a policy of "financial inclusion". As part of this policy, the government requires Indian banks to lend to "priority sectors", one of which is the rural poor. Until recently, banks were happy to lend money to MFI's who would then on-lend funds, primarily to poor groups across rural India. The banks have welcomed this policy because historically they tended to charge MFI's average interest rates of 12-13 percent and benefited from 100 percent repayment rates. Thus, by lending to MFI's, banks have been able to meet their "priority sector" lending requirements with what historically has amounted to a risk-free and very profitable arrangement. Therefore, in the present study an attempt has been made to examine the role of Microfinance Institution (MFI's) in the development of SME's in the Kashmir division with a view to offer suggestion for improvisation of the same.

Keywords: microfinance, MFI's, SME's, credit market, financial stability, kashmir division.

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I. Introduction

Microfinance is not a new concept. Small micro credit operations have existed since the mid 1700's. Microfinance is "the provision of financial services to low-income poor and very poor self-employed people". These financial services generally include savings and credit but also include other financial services such as insurance and payment services. Microfinance is "the attempt to improve access to small deposits and small loans for poor households through MFI's which is otherwise neglected by banks". Therefore, Microfinance Institution (MFI's) involves the provision of financial services such as savings, loans and insurance to poor people living in both urban and rural settings who are unable to obtain such services from the formal financial sector. These sectors have now become a worldwide movement, a development activity and as a way of helping poor people to come out of poverty (Ditcher, 2006). Buckley (1997) captures its prominence role in development of economies. Micro finance institutions like conventional financial institutions charge their lenders interests on loans, but, these interest rates are generally lower than those offered by normal banks. The World Bank estimates that there are more than 500 million people who have directly or indirectly benefited from micro finance related operations. Within India the micro finance movements in Western and Southern India have received most attention, both in the media as well as in academic research. Andhra Pradesh, in particular, has witnessed a remarkable growth in micro finance activities and its success stories have been widely reported as well.

MFI's include village banks, cooperative credit unions, state owned banks, and social venture capital funds to help the poor. These institutions are those that provide savings and credit services for small and medium size enterprises. They mobilize rural savings and have a simple and straight forward procedure that originates from local cultures and are easily understood by the population (Germidis et. al., 1991). It should be noted that microfinance is not a panacea but it is a main tool that foster development in developing countries. It is known worldwide that the poor cannot borrow from the banks. Banks do not lend to them because they do not have what is required to be granted for loan (Mortgage)

and suffer due to poor financial conditions. The lack of financial power is a contributing factor to most of the societal problems. These problems emanate from poverty and it is known that with poverty one is bound to suffer so many consequences ranging from lack of good health care system, education, nutrition. Microfinance has proved this bank concept to be wrong. They target the poor who are considered risky but the repayment rate turns to be positive as compared with the regular commercial banks (Zeller and Sharma, 1998).

Researchers have viewed microfinance in different dimensions. Microfinance gives people new opportunities by helping them to get and secure finances so as to equalize the chances and make them responsible for their own future. It broadens the horizons and thus plays both economic and social roles by improving the living conditions of the people (Microfinance Radio Netherlands, 2010). These improvements are in a nutshell to alleviate poverty, and increase the development of small and medium size enterprises SME's and focusing mostly in the rural areas. A positive relationship has been documented between small and medium enterprises development and economic growth in developed countries (Harris and Gibson, 2006; Monk, 2000; Sauser, 2005; Birch, 1987; 1981). Since the 1980s, almost all countries implemented economic and financial reforms to achieve macroeconomic stability and improve economic governance. In many countries these reforms have led to greater macroeconomic stability, improved fiscal and monetary management as well as better, though still unsatisfactory, overall economic performance.

II. Literature Review

Micro-finance refers to small savings, credit, insurance and remittance services extended to socially and economically disadvantaged segments of society. In the Indian context terms like "small and marginal farmers", "rural artisans" and "economically weaker sections" have been used to broadly define micro-finance customers. The micro-finance has been further defined as "provision of thrift, credit and other financial services and products of very small amounts to the poor in rural, semi urban or urban areas, for enabling them to raise their income levels and improve living standards". Further, it is the evolving and impacting theme for the millions of rural and urban poor across the length and breadth of India arousing hope and opportunity to millions for raising their standard of living. In the literature, the terms microcredit and microfinance are often used interchangeably, but it is important to highlight the difference between them because both terms are often confused. "Microcredit refers to small loans, whereas microfinance is appropriate where NGOs and MFI's supplement the loans with other financial services (savings, insurance, etc) to help in the development of SME's". Therefore microcredit is a component of microfinance in that it involves providing credit to the poor, but microfinance also involves additional non-credit financial services such as savings, insurance, pensions and payment services.

Microfinance is a broad term that describes banking and financial services provided by poverty-focused financial institutions (often referred to as microfinance institutions or "MFI's") to poor populations that are not being served by mainstream financial organizations. Commercial banks support microfinance operations directly (by providing financing or equity investment to existing MFI's) and indirectly (by creating branches or a range of microfinance products and services). Since its inception in the 1970s, microfinance has been based on the principal that the working poor need alternatives to what had previously been the only source of borrowed funds, namely informal lenders who charge excessive interest. MFI's primarily provide small loans to their clients (although some MFI's also offer additional services, including include micro-deposit and micro-insurance products). Unlike commercial banks, MFI's typically do not require borrowers to provide collateral for their loans. Some apply a creditworthiness standard based on the performance of a group of borrowers by initially extending a loan to an individual and then lending money to additional members of the group if that individual proves to be a reliable borrower. In effect, the MFI's create incentives for each individual within the group to repay their loans, as the failure to do so will jeopardize the ability of the rest of the group to obtain credit. Others lend directly to individuals without tying credit to group performance. Srinivas, (2005) in his study explains that without adequate bank finance, SME's cannot acquire or absorb new technologies or cannot expand and compete in global markets or even strike business linkages with larger firms. At the same time banks cannot consider the financing of SME's as a viable option unless their priorities are addressed by SME's. SME's should be assisted largely by public initiatives involving participation of the banking industry. Basu (2007) also tries to analyse the role and problems of small-scale industries and their importance in the economic development. Mubashir (2012), in his research stated that Jammu and Kashmir like other states of country is primarily an agrarian state. Industrially, Jammu and Kashmir is one of the backward states in the country on account of inadequate infrastructural facilities on account transportation, electricity, topography and other constraining factors. Though the state is very rich in natural and human resources, yet these have not yet been fully exploited for establishing an industrial base which could trigger economic spin off for the majority of people. The Jammu and Kashmir State accounts for 1.04 percent of the total population of the country but its contribution to the

national income are just about 0.7. In this backdrop micro finance has emerged as one of the tools to in Jammu and Kashmir State for poverty mitigation against economic backwardness and political turmoil being witnessed over two decades now. The study concludes that there is availability to and awareness of micro finance among the beneficiaries, but it varies with different micro finance services. Khurshid (2013) further added that The Jammu and Kashmir Bank has been playing significant role for the upliftment of poor, to raise the living standard of masses and also to mitigate their socio-economic conditions to achieve balanced economic growth with social justice in the state of Jammu and Kashmir via its micro finance services. Shafqat and Vikas (2014) make an attempt to outline the prevailing condition of the Microfinance in Jammu and Kashmir State in the light of its emergence. The prospect of Micro-Finance is dominated by SHGs (Self Help Groups) - Banks linkage Program. Its main aim is to provide a cost effective mechanism for providing financial services to the poor. This paper discovers the prevailing gap in functioning of MFI's such as practices in credit delivery, lack of product diversification, client consumption and individual loan demand with lack of mitigation measures, less thrust on enterprise loans, collection of loans and highest interest rate existing in micro finance sector. These are conditions, which tell us that the circumstance is moving without any direction. Finally this paper accomplishes with practicable suggestions to overcome the issues and challenges associated.

a) Research Objectives

1. To study entrepreneur preferences towards MFI's schemes with respect to the growth of their small scale industries;
2. To examine relative importance of different attributes while responding to the products that does support SME's to grow;
3. To study the effect of products in MFI's especially in developing SME's;
4. To determine what MFI's are doing in helping to develop SME's in Kashmir division; and
5. To study on the basis of study results ways and means of improving the development of SME's through micro finance in Kashmir Division.

b) Research methodology

This section provides the methods and procedures which were followed in conducting the study. These include research design, sample design and size, the research instruments for the data collection, the sampling technique and method to be used for data analysis.

c) Research Design

An exploratory research design was used in the study to know the impact of microfinance on SME's in Kashmir division. Explanatory designs have been documented (Mugenda and Mugenda, 2003 and Kothari, 2002) as best method for social scientists whose interest is collecting original data for the purpose of describing a population, which is too large to observe directly.

i. *Sample Design*

The Population of this study constituted whole Kashmir division but due to time constraints the study was restricted to three districts namely Pulwama, Ganderbal and Bandipora where the existence of SME's is more than other districts. Among these three districts, the researcher interviewed 120 respondents with the help of a structured schedule. Convenience sampling technique was used to collect data from respondents.

ii. *Data collection instruments and Procedures*

The researcher used primary sources to collect data for this study due to its nearness to truth and ease for control over errors. A structured schedule was used to collect the data from the respondents; the schedules were administered by the researcher. This enabled the researcher to explore all aspects relating to role of MFI's in enhancing growth of SME's.

iii. *Data Analysis and Presentation*

Primary data collected was coded and analyzed with the help of the Statistical Package for Social Sciences (SPSS). The results were presented using tables for ease of understanding. The collected data was analyzed using descriptive statistics such as frequencies and percentages. Descriptive statistics allowed for the generalization of the data so as to give an account of the characteristics of the population as represented by the sample.

d) Findings and Discussions

i. *Granting other things are equal, to what extent would you wants your business to grow*

The objective behind the formation of this question is to know to what extent the entrepreneur wants his business to grow. The figure shows that majority of the respondents (34.5 percent) wants to setup many branches in Kashmir division, 21 percent wants to setup more branches in state, 38.7 percent wants to enlarge their present premises and 6.67 percent wants to stay contented with the present size of their business (Table 1).

Table 1: Business to grow

Particulars	Frequency	percentage
Setup many branches in Kashmir division	41	34.17
Setup more branches in my state	25	20.83
Just enlarge my present premises	46	38.33
Stay contented with the present size	8	6.67

ii. *Have you ever thought of any micro finance institutions as institutions capable of assisting your small scale business to grow?*

The above question has been formed to know that do an entrepreneur had ever thought of micro finance institutions as institutions capable of assisting their small scale businesses to grow. From the above result, it is clear that out of 120 entrepreneurs 97 percent entrepreneurs are interested to take the help of MFI's to enlarge and nurture their business (Table 2).

Table 2: Institutions capable of assisting SME's

Particulars	Frequency	percentage
Yes	97	81.5
No	23	19.17

iii. *If yes, did this idea remain only in thought or you acted on the idea*

It is revealed form the study that 45.4 percent have actually acted on the idea whereas the remaining respondent has thought only (Table 3).

Table 3: Acted on this idea or not

Particulars	Frequency	percentage
Thought only	46	38.33
Acted on the idea	54	45.4

iv. *Do you know of any product that does support small scale business to grow?*

The study reveals that 58.33 percent of the entrepreneurs are aware about the products that do support small scale business to grow, while as 36.67 percent of this population aren't educated about this topic and remaining have no information (Table 4).

Table 4: Products that support SME's

Particulars	Frequency	percentage
Yes	70	58.33
No	44	36.67
Missing	6	5

v. *If yes, name the product*

The results clearly show that working capital as a product provided by MFI's are quite more familiar than other products which are offered by these institutions (Table 5).

Table 5: Name the product

Particulars	Frequency	Percentage
Working Capital	50	41.67
Temporary Overdraft	11	9.167
Term Loan	11	9.167
Micro Credit	4	3.333
No information	44	36.67

vi. *What products would you have solicited from the MFI's to help your SME's?*

The study revealed that respondents are more interested in suppliers guarantee from micro finance institutions to help their small scale business; in this situation 26.1 percent of the entrepreneurs wants to have suppliers guarantee (Table 6).

Table 6: Solicited from the MFI's to help your SME's

Particulars	Frequency	percentage
Micro credit	18	15
Business accounts	29	24.17
Temporary overdraft	8	6.667
Suppliers guarantee	32	26.67
Business advice and support	4	3.333
No information	29	24.17

vii. *Are there any special reasons why you have not approached any MFI's for support?*

The results on Table 7 reveals that lack of trust is the main reason that why SME's not approach any micro finance institution for credit followed by high interest rates.

Table 7: Have you approached to MFI's

Particulars	Frequency	percentage
Lack of trust	37	31.1
High interest rates	26	21.8
Do not need their support	6	5.0
Others specify	1	0.8
On information	49	41.2

viii. *Which MFI's schemes would you like to help you to grow?*

Answer of this question will give idea about the MFI schemes that entrepreneurs would like to help to him to grow and the data shows that 31.6.7 percent of the entrepreneurs are quite ok with Prime Ministers employment generation scheme followed by MSMES which are quite a reliable source of MFI's as revealed by respondents (Table 8).

Table 8: Schemes help to grow

Particulars	Frequency	percentage
Prime ministers employment generation scheme (PMEGS)	38	31.67
Micro small medium enterprises scholarship (MSMES)	31	25.83
Kissan credit card (KCC)	1	0.833
Others	8	6.667
No information	42	35

ix. *Do the above products have any benefits to you?*

The data in Table 9 reveals that majority of respon-dents have bene-fited from the products offer-ed by different microfinance institutions (MFI's).

Table 9: Products have any benefits

Particulars	Frequency	percentage
Yes	72	60
No	19	15.83
No information	29	24.17

x. *If, yes name some of the benefits*

Table 10: Name some benefits

Particulars	Frequency	percentage
Business expansion	47	39.17
Ease of assessing loans	36	30
Building up collateral base	15	12.5
Good record keeping	21	17.5
Others	1	0.833

The Table 10 clearly reveals that the benefit from MFI's help these SME's to expand their business and also help them to get loan in easy procedure than other financial institutions.

x. *If no, why are you still using the package?*

Table 11: Still using the package

Particulars	Frequency	percentage
No alternative	102	85
Still indebted to them	11	9.167
Have planned to stop	3	2.5
Others	4	3.333

The results on Table 11 clearly reveal that SME's are bound to get financial help from these MFI's as there are no alternative available to them. Further, MFI's provide loans to these SME's in easy procedure and are not asked for any collateral as is case with other financial institutions.

xii. *Have you ever faced or do you observed any problems or challenges likely to be encountered in your dealings with these MFI's.*

The data on Table 12 clearly states there are some problems faced by an entrepreneur while dealing with micro finance institutions (37.8 percent)

Table 12: Problem and challenges likely to be encountered

Particulars	Frequency	percentage
Yes	45	37.8
No	44	37
No information	30	25.2

III. Conclusion

The primary goal of microfinance is to help the poor to increase their income, build businesses and acquire a financial cushion to reduce their vulnerability to financial shocks in the future. Research has shown that each of these factors lead to other improvements in the lives and conditions of the poor, including increased access to healthcare and education, better nutrition, personal empowerment for women and a safety net from unanticipated financial crises that can otherwise destroy families' ability to break the poverty cycle. Microfinance can also help build permanent local financial institutions that attract domestic savings, which can be used to make loans, and provide other services to the poor.

Microfinance institutions are seen as an asset to the developing countries. This study attempts to empirically ascertain the effect of MFI's on SME's. Positive and significant relationship has been established between MFI's and SME's performance. This study concluded that an entrepreneur wants their business to grow with the help of MFI's and these are the institutions which are seen as institutions capable of assisting them for financial help. Further, the study revealed that MFI's should provide those services that are tailored to meet the needs and aspirations of the local inhabitants and emphases are towards the poor. The products and services put forth to the members are not up to their expectation as is revealed by the data. These problems range from poor business skills, lack of financial intermediation services, and the lack of markets survey, awareness programmes, technology etc. Lack of trust is also a problem faced by SME's while dealing with these MFI's.

a) Suggestions

After analyzing the entire study on role of micro finance in developing small scale industries with repect to both the primary and the secondry data, the following recommendations and suggestions can be put forth.

1. Most of the respondents were not actually aware about the products and schemes offered by micro finance institutions, so it was suggested to create more and more awareness programmes among the locals of Kashmir Division.
2. The interest rate are not so impressive, therefore, MFI's should consider these rates while attract the entrepreneurs.
3. SME's are facing many hurdles while getting the financial help from MFI'S. Therfore, these financial instituion should work to make the procedure to loan very easy and comfortable.
4. Most of the entrepreneurs do not count micro finace as a reliable instrument due lack of trust. So, micro finance institutions should provide different motivational programmes to these budding entrepreneurs.

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Factors Affecting Turnover Tax Collection Performance: A Case of West Shoa Selected Woredas

By Dejene Debebe Kibret & Teshome Dula Ph.D

Abstract- Factors affecting turnover tax collection performance. A case of West Shoa Zone selected wore das. In 2017/18 then targeted revenue was 9041224 birr with the actual revenue being 7888536 birr (equivalent to 87.25% or a difference of 1152688) was existence of turnover tax collection gap. This study was using mixed research approach. Sampling technique used by Systematic random and purposive sampling. Sample sizes of 373 respondents were selected and distributed questionnaires and interview. Data analyze by SPSS software 20 and factor analysis. Findings revealed that; employee qualification and manpower, taxpayer registrations, technology and information system, management commitment level and tax knowledge affects revenue performance of turnover tax positively.

Keywords: *revenue collection performance, revenue authority, west shoa, ethiopia.*

GJMBR-C Classification: *JEL Code: G02*

Strictly as per the compliance and regulations of:

Factors Affecting Turnover Tax Collection Performance: A Case of West Shoa Selected Woredas

Dejene Debebe Kibret [α] & Teshome Dula Ph.D [σ]

Abstract- Factors affecting turnover tax collection performance. A case of West Shoa Zone selected wore das. In 2017/18 the targeted revenue was 9041224 birr with the actual revenue being 7888536 birr (equivalent to 87.25% or a difference of 1152688) was existence of turnover tax collection gap. This study was using mixed research approach. Sampling technique used by Systematic random and purposive sampling. Sample sizes of 373 respondents were selected and distributed questionnaires and interview. Data analyze by SPSS software 20 and factor analysis. Findings revealed that; employee qualification and manpower, taxpayer registrations, technology and information system, management commitment level and tax knowledge affects revenue performance of turnover tax positively. It was also revealed that the perpetuation of tax fairness affects negatively whereas compliance cost has a negative statistically insignificant. They concluded that there are problems facing the revenue administration office while collecting turnover tax revenue. Based on the study it is recommended that revenue authority need to develop their strategic management commitment , recruit sufficient number of employees and continues training on qualification, maintaining tax fairness and equity, improve taxpayer identification and registration, should increase the number of users of Electronic Tax Register, conducting extensive tax knowledge (awareness) creation programs to update and maximize frequency tax audit effective on field compromising should be a priority task.

Keywords: revenue collection performance, revenue authority, west shoa, ethiopia.

I. Introduction

Turnover tax is available to individuals who elective qualifying small businesses can choose to register for the standard tax system or for turnover tax. Turnover Tax will be calculated by simply applying a tax rate to a "taxable turnover". Turnover taxes have parameters in place to determine when such taxes should be assessed, and at what rate (Mc Cluskey, 2011). Turnover tax is favorable for the business concerned implemented to simplify very complex tax rules and regulations. Turnover tax is perceived simpler to comply with does not necessarily mean that the associated tax payable is fair and tax system may potentially be burdening the taxpayer even more than the complex income tax system (Hassan, 2011). Ethiopian government Proclamation No. 308/2002, TOT is applicable to any resident person whose turnover from business does not exceeds 500,000 during any year of income. Turnover tax is imposed on the supply of taxable goods and services by persons not registered for VAT. It is chargeable at 2 per cent on locally sold goods and 10 per cent on all other services (FDRE, 2002).

Therefore, turnover tax collection performance can be affected by different factors. In turnover tax revenue practice there are internal and external factors which affect the tax revenue amount selected woredas. The researcher declares that; identify factors affecting Turnover tax collection performance from those; this paper focused on enforcement of law and regulation, effectiveness of TOT administration practice and taxpayers attitude toward payment of tax in selected woredas.

a) *Statement Problem*

Revenue collection is enables the government to acquire assets which are not liable to debt and which the government uses to develop its economy. Tax administration therefore, should aim at improving on laws regarding the registration, assessment, collection revenue, and exploiting fully taxation potential of a country (World Bank, 2015). Previous studies (Ngungi, 2011; Meena, 2013; Ndungu, 2013) posits identified factors affecting revenue collection that include services delivery, staff motivation, legislation, public participation, employee competency and integrating information and technology and payment was identified to the main challenges that inhibits revenue collection. Simiyu (2013) further argues that challenges affects turnover tax collection that include taxpayers' ignorance of their obligations, prohibitive rate of turnover tax, rate of payment affects tax collection.

In Ethiopia has faced budget deficit every year since introduction of TOT is an affirmative action which was aimed at incorporating the SME sector into national taxation system. However, the performance of TOT has not been satisfactory and TOT revenue has been below average in 2017/2018 years since its inception. According to ERCA (total revenue collected from the TOT less than against target collection each year). On

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TOT recruitment, the performance has on average been below 70% (ERCA, 2018).

Others studies (Tigistu, 2014; Tadele, 2015) forwarded that Imposition of tax couldn't still bring the required result due to a number of reasons such as lack of clear understanding about the tax system by the tax payers, tax payers don't comply with their tax obligation, hostility between the tax payers and tax officials, economical factors, negative attitude of tax payer towards the tax system, that is, understating their taxable income by significant amount and related. For these reasons, the actual amount of tax couldn't be collected properly. However, these studies were the gap into measure revenue performance and identify the problem that this study sought to address. Despite of selected wore das revenue authority has been facing various factors affect which make it not to attain at most (100%) the projected targets. In 2017/18 the targeted revenue was million 9041224 with the actual revenue being million 7888536 (87.25%) the existence of turnover tax collection gap.

This study was, therefore; undertaken to bridge the research gap through discovering factors which affect TOT performance by taking the case of some selected wore das of West Shoa Zone of Oromia Region through answering the following research questions.

a) Research Question

1. What are factors that affect the effectiveness of TOT administration?
2. How taxpayer's attitudes affect TOT payment?

b) Hypothesis

$H0_1$: There is no significant relationship between employee qualification and manpower with performance of TOT collection.
$H0_2$: There is no significant relationship between management commitment and performance of TOT collection.
$H0_3$: There is no significant relationship between taxpayer's registrations and performance of TOT collection.
$H0_4$: There is no significant relationship between technological and information system and performance of TOT collection.
$H0_5$: There is no significant relationship between compliance cost and performance of TOT collection.
$H0_6$: There is no significant relationship between tax knowledge and performance of TOT collection.
$H0_7$: There is no significant relationship between tax fairness and performance of TOT collection.

c) Research objective

i. *General Objective*

1. Identify Factors affecting Turnover tax collection performance of West Shoa Zone Revenue Authority selected woreda.

d) Specifics objective

1. To identify factors that affects the effectiveness of TOT administration.
2. To examine how taxpayer's attitudes affects TOT collection performance.

II. Review Literature

a) Determinant of Turnover Tax Collection performance

i. *Effectiveness of TOT administration*

a. Employee Qualification and man power

Staff training is the establishment of learning, development and teaching opportunities in order to advance individual, team and managerial performance (Harrison, 2007). Bird (2015) argues faults revenue collection are inadequate tax assortments and academic faces a problem of incompetent tax supervision. The preceding problem is attributed to with inadequate administrative work with necessary skills, and high level of illiteracy among taxpayers and tax collectors.

b. Management Commitment level

Managers Operations are also agents of the people and stewards of the democratic process and are morally obligated embody achieve goals, objectives and its mission of public interest and the constitutional governance process during strategic planning. Decision-flow processes are vehicles to integrate results into coherent patterns for developing, implementing, and controlling decision making (Wresch & Fraser, 2011). Also management culture is a set of socially acquired values that managers accepts as a whole and transmits to its members through language, symbols and more proactive and tax compliant.

c. Taxpayers registration

Taxpayer enumeration and registration: A good Tax Administration system should identify all those required to pay taxes, registration, recording of taxpayer information and issue unique identification numbers that are fed into a master file upon which updates are made and from which retrievals can be made (Moyi & Ronge, 2006). According to Baingana (2011)that taxpayer identification are most important aspects of tax administration which more taxpayers are located and registered otherwise evade are reduced. Then (Bird, 2015) taxpayers are identified and registered results to enhance efficiency and significantly ease revenue collection.

d. Technology and Information system

A cash register is an electronic tool used to calculate and records sales transaction with a cash drawer that will be used to store cash. The computerized processes are minimizing errors, standardization operational procedures and reducing costs. Furthermore, computerized tax system reduces

operational costs of expenditure revenue collections to enhance the citizens' welfare prioritizing the society needs (Fisman & Gaht, 2013).

e. Compliance costs

Compliance costs are costs associated with obeying the law including planning and administration, direct time and money spent filing paperwork. The tax laws and regulations are legal documents with legal language which is complicated for ordinary taxpayers to comprehend and given the numerous legal amendments every year, taxpayers lack necessary expertise to complete the tax returns. Tax laws should be simplified save time and money SMSs business to lower both compliance costs and administrative costs, to reduce uncertainty faced by taxpayers' and to improve the levels of tax compliance (Kasipillai, 2005).

i. *Taxpayers attitudes toward payment of tax*

Tax knowledge

According to Palil (2011) tax education is knowledge about tax laws to determining taxpayers' compliance behavior. Tax educations promote taxpayers understanding of the tax systems, processes, law and associated penalty for defaulting. This tends to increase peoples propensity to comply with tax obligation. Asrinanda (2018) provides tax knowledge affect tax attitudes towards the tax system fair. Knowledge of taxation owned by the taxpayer will affect the obedience of the taxpayer itself in carrying out its tax obligation and affect tax revenue received by the state if the people already have low tax knowledge.

f. Tax Fairness

According to Lemessa (2007) state that all taxpayers dealt a given taxpayer would accord the same treatment. Kayaga, (2010), stated three types of fairness's, namely: horizontal, vertical. Horizontal equity expresses the principle that similarly situated taxpayers should pay the same amounts of taxes because they have the same ability to pay. Vertical equity is principles that are "better off" bear a larger proportion of the tax burden while those who are "worse off" should bear less.

g. Performance of Tax Collection

As to Simon James & Clinton Alley (2004), the USA IRS has two definitions for tax gap - gross tax gap and the net tax gap. The gross tax gap is the amount of 'true' tax liability that is paid 'voluntarily' and on time and the net tax gap is amount less tax paid late or collected by the IRS through enforcement activities. Baingana (2011) asserts that without adequate tax revenues, governments cannot provide the necessary public services to foster growth. Tax revenue pushes governments to levy ever more distortionary taxes in attempts to raise funds. Thus, improvement in administration would lead to increased revenue performance.

h Empirical evidence

Simiyu (2013) was Studied on "Challenges Affecting Collection of Turnover Tax". This study identified factors were; Taxpayer's ignorance of their obligations, mode of payment and the frequency of filing returns, Corruption and collusion between taxpayers, Government Policy formulation and quality of services to taxpayers.

Meena (2013) carried out the study on "Assessment of the challenges facing revenue collection in Tanzania". This study identified were; Weak administrative capacity to assess taxes and levies and enforce revenue laws and by laws, Taxpayer resistance and low morale on the part of citizenry, Corruption including embezzlement of revenue, Political pressure on the revenue collectors to relax in revenue collection, broadening the tax base, informal sector included in the tax net, Improving staff integrity, ensuring that all due government revenue is collected, tax evasion and avoidance are controlled.

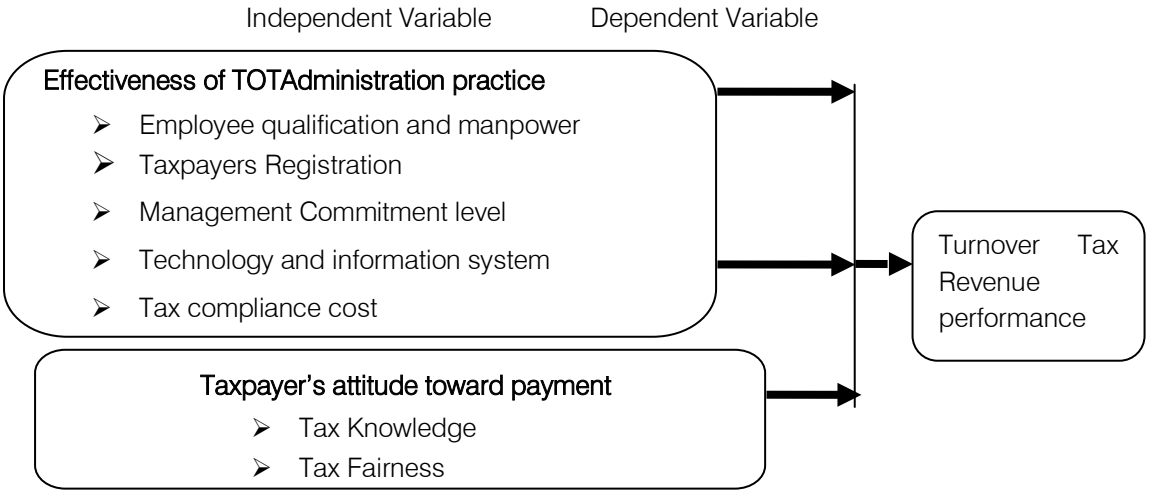
Dave (2014) carried study on "factors influencing turnover tax compliance in the Kenya revenue authority". This study identified crucial factors that were; taxpayer's perception of the tax system, taxpayer's level of awareness, enforcement efforts by the revenue authority, costs of compliance.

Tadele (2015) study on "Analysis of Tax Buoyancy and Its Determinants in Ethiopia." forwarded that Imposition of tax couldn't still bring the required result due to a number of reasons such as lack of clear understanding about the tax system by the tax payers, tax payers don't comply with their tax obligation, hostility between the tax payers and tax officials, economical factors, negative attitude of tax payer towards the tax system, that is, understating their taxable income by significant amount and related. Generally empirical studies undertaken far for developing countries, particularly for Ethiopia, bothered little or no to see the potential challenges faced by taxpayers and the tax authorities in administering different tax activities such as turnover tax collection performance.

i. Research Gap

The researcher believes that some gaps in the area of tax collection not tested and addresses the issue in depth archive full potentiality on turnover tax collection performance. This are little study has been carried out on the factors turnover tax rate, tax evasion, compliance cost, employment qualification and manpower, management commitment level, tax knowledge, tax fairness, tax audit, low usage of Electronic tax register, tax avoidance and tax registration. Therefore a research gap exists that need to be filled by doing a through survey on the factors affecting turnover tax collection performance revenue authority.

b) *Literature Framework*



Source: Researcher their own literature review (2019)

Figure 2.1: Literature frame work

III. Methodology

a) *Description of Study*

This research has been factors affecting turnover tax collection performance on conduct in Zonal town is Ambo which it located 112 Kms West of the capital Addis Ababa, on the road to Nekemte (Fanos Mekonnen, 2012). This research were study on West Shoa Zone such as:-Caliya, Ejere, and Nono select woreda of revenue authority.

Table 3.1: Geographical location and climatic condition of the study districts

District	Geographical location		Altitude (m.a.s.l.)	Temperature (ºC)	Rainfall (mm)
	Latitude	Longitude			
Chaliya	9 º02-9º1N	37°25-37°16E	1700 -3060	8- 25°	750 -1000
Ejere	8º51'-9º15'N	38º25'- 38º28'E	1872-3238	9- 28°	900-1200
Nono	7º41'-8º12'N	36º23'- 36º25'E	2152-3558	15- 32°	1100-1500

(EFEDO, 2012; Fanos Mekonnen, 2012; NFEDO, 2014; CFEDO, 2015)

Source: Google Map, West Shoa Zone (Chaliya,Ejere ,Nono)

Figure 3.1: Location of West Shoa zone setting

b) Research Design

Research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Cross sectional design is based on observations made at one point in time. Data collection strategy is broader in scope and involves systematic data collection we use and difficult to make inferences about processes that occur over time and hence cause and effect (Kothari, 2008).

c) Research Approach

Qualitative research approach was used to provide descriptive forms using in-depth interview questionnaires which would enable the researcher to gather detailed information allow exploring and better understanding the complexity of a phenomenon (Creswell, 2010). Quantitative research approach has generates precise, statistically reliable, extensiveness of attitudes held by people, numerical data from survey sizes and provides objective measure of reality (Creswell, 2010).

d) Target population

According to Mugenda and Mugenda, (2011), explain that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study.

Table 3.2: Taxpayers Profile

No.	Woreda	TOT taxpayers
1	Toke Tutaye	1418
2	Chaliya	1250*
3	Ejere	1180***
	Total	3655

Sources: west shoa zone RA, 2018

e) Sampling Methods

A sample Designis a definite plan for obtaining a sample from a given population. It refers to the procedure the researcher would adopt in selecting items for the sample and determined before data are collected for his research study (Kothari, 2008). Systematic sampling is first item would be selected randomly and the remaining units of the sample are selected at fixed intervals. Purposive sampling was used to judgmental, selective or subjective sampling of the study (Creswell, 2010).

f) Sample Size Determination

Taro Yamane (1967) assumes homogeneity of the taxpayers and the existing resources to determine the sample size by the precision level. Sample size for taxpayers;

$$n = \frac{N}{1+N(e)^2} \quad \text{.Equation 3.1}$$

$$n = \frac{3655}{1+3655\,(0.05)^2} = 361$$

Table 3.3: Respondents profile

No.	Type	Sampling method			
		Chaliya	Ejere	Nono	Total
1	Sample size Taxpayers	123	117	121	361
	Revenue officers and department heads= 12,Total sample = 373.				

Source: West shoa zone RA, February, 2019

g) Data Collection Methods

Structured questionnaire & personal interview was contact face-to-face primary data collection allowed the participants respond statement collect information on their attitudes, feelings under study (Kohtari, 2008). Secondary data was obtained from annually turnover tax performance reports of six year (2013-2018) revenue authority.

h) Method of Data Analysis

Qualitative data was used in-depth, descriptive character, often not attainable using quantitative measures (Creswell, 2010). Quantitative data analysis (Field, 2009; Hair et al., 2010; Joshi, 2012) show that the estimation technique, OLS, desirable properties and end diagnostic tests are violated. Homo skedasticity refers the dependent variables have equal levels of variance across explanatory variables. The variance is unequal across values of the explanatory variable known as hetero skedasticity (Hair et al., 2010). Skewness and Kurtosis are two statistical measures to test normality describe the shape of any distribution. Normally distributed errors: It is assumed that the residuals in the model are random, normally distributed variables with a mean of 0. This assumption means that the differences between the model and the observed data are most frequently zero or very close to zero and that differences

much greater than zero happen only occasionally. In fact, predictors do not need to be normally distributed (Field, 2009). According to Field (2009) suggests that a small degree of association between explanatory variables will almost always occur but will not cause too much loss of precision. However, a problem occurs when the explanatory variables are very highly correlated with each other, and this problem (Brooks, 2008).

i) Factor Analysis

Factor analysis is test the multi-dimensional scale in which all variables, extraction variances a

Factor loading is how much the variable contributes to the factor and high factor loading scores indicates better accounted by the variables (Field, 2009).

j) Correlation

A value of +1 represents a perfect positive correlation means two variables are precisely related and values of one variable increase as turn as other variable will increase. By contrast, a value of +1 represents a perfect negative correlation means two variables are precisely related; as the values of one variable increase those of the other decrease. Within business research it is extremely unusual to obtain perfect correlations (Marketal., 2007).

k) Model Specification

Structure questionnaire process was analyses by SPSS version 22 to regress multi-linear model. Multiple regressions are analysis of two or more than two independent variables (kohtari, 2008). Following multiple regression equation as:

$$\text{TOT performance} = \beta_0 + \beta_1 EQMP + \beta_2 MCOMT + \beta_3 TREG + \beta_4 ITS + \beta_5 TCC + \beta_6 TKNOW + \beta_7 TFAIR + \varepsilon$$

l) Operationalization and Measurement of Variable

Table 3.4: Operational Measurement of independent and dependent variables of study

Independent Variables	Symbol	Categorical	Unit Measurement	Expected outcome(+/-)
Employee qualification and manpower	ESMP	Scale	Likert-type scale(strongly disagree, Disagree, Neutral, Agree, strongly agree)	+
Management Commitment	MCOMT	Scale	Likert-type scale	+
Taxpayers Registration	TREG	Scale	Likert-type scale	+
Technology and Information system	ITS	Scale	Likert-type scale	+
Compliance cost	TCC	Scale	Likert-type scale(very low,low,fair,high,very high)	+/-
Tax Knowledge	TKNOW	Scale	Likert-type scale	+
Tax Fairness	TFAIR	Scale	Likert-type scale	-
Dependent Variables			Measures	Expected outcome (+/-)
Turnover tax performances	TOTP	Continuous	Tax ratio	+/-

Source: Own literature review (2019

IV. Result and Discussion

a) Responses Rate

Out of the 361 questionnaires issued, 325 (90%) questionnaires were returned, while 36 (10%) questionnaire was not returned from respondents. High rate of participation conducted for fit analysis whose participated rate was 70% and above is very excellent for analysis and start to preparation of reports support by (Mugenda and Mugenda, 2011)

Table 4.1: Response rate

NO.	Questionnaire	Frequency	Percent
	Administered	361	100%
1	Returned	325	90%
2	Non-returned	36	10%

Source: Field survey, February, 2019

b) Factor Analysis

Factor analysis measured by Bartlett's test and Kaiser-Meyer- Olkin (KMO) which occur 0 to 1, 0.5 was tested variable. Factor-loadings are those values which explain how closely the variables are related to each one of the factors discovered (kothari, 2008). Factor loadings are significance items are retained only when the absolute size of their factor loading is above 0.50 as satisfactory in social sciences research (Field, 2009).

Table 4.3: KMO Sampling Adequacy and Bartlett's Test Sphericity

Variable	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.836
EQMP	Bartlett's Test of Sphericity	Approx. Chi-Square	692.539
		Df	5
		Sig.	.001
MCOMT	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.827
	Bartlett's Test of Sphericity	Approx. Chi-Square	734.180
		Df	15
		Sig.	.002
TREG	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.800
	Bartlett's Test of Sphericity	Approx. Chi-Square	618.925
		Df	11
		Sig.	.000
ITS	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.756
	Bartlett's Test of Sphericity	Approx. Chi-Square	835.007
		Df	8
		Sig.	.000
TCC	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.790
	Bartlett's Test of Sphericity	Approx. Chi-Square	888.428
		Df	7
		Sig.	.001
TKNOW	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.787
	Bartlett's Test of Sphericity	Approx. Chi-Square	714.738
		Df	4
		Sig.	.005
TFAIRN	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.811
	Bartlett's Test of Sphericity	Approx. Chi-Square	915.548
		Df	9
		Sig.	.000

Table 4.4: Shows the factor loadings after rotation

Variable		Factor loading
	Revenue authorities have sufficient employee skills deep understanding of tax structure and understand tax laws.	.841
EQMP	Tax offices provide you ineffective on continuous clarification &training about tax collection.	.837
	Revenue authority staffs technically competent in executing their duties and responsibilities.	.800
	Revenue authority employees staffs have tax administration skills and returns analysis skills.	.780
	Revenue authority has adequate manpower who can participate in turnover tax collection.	.621
MCOMT	Management employee's achievement adequate plans to motivate towards turnover tax revenue growth.	.808
	The current management is slow in strategic leadership and implementing turnover tax collection policies.	.710
	The current management has legalen for cement dishonest of revenue collectors to improved turnover tax collections performance.	.828
	The tax officers engage employee management with the goal of gaining competitive advantage.	.888
	Management employees are well-motivated and skilled workforce compete turnover tax collection compliance.	.738

Source: Field survey, February, 2019
***Factor loadings above 0.50 used*

Table 4.4: Continued Factor loading

Variable		Factor Loading
TREG	I dentification methods used by tax officers are ineffective in registering all potential taxpayers.	.620
	Tax officers are ineffective in identifying and registering all potential taxpayers to obtain a TIN.	.796
	Taxpayers' are continues actual revenue reported to tax officers timely.	.822
	Taxpayers able to record involvement of tax officers.	.858
ITS	Taxpayer's has effective manipulated cash register when purchasing and sales good and services.	.810
	TOT payment increases after your organization using cash register machine, comprehensive information system (on social medias and Notice board, etc) and automate tax affairs.	.846
	Taxpayer's process and operation are driven advance technology to tax collection process and taxpayers are compliant.	.764
	Using cash register machine facilitates the TOT collection process and your work.	.635
	How do you rate incurred cost of hiring for tax agents?	.845
TCC	How do you find the cost of travelling in order to file a return?	.853
	How do you rate cost of compliance incurred by experience revenue authority?	.695
	How do you rate the cost of filing a tax return?	.919

Source: Field survey, February, 2019
*** Factor loadings above 0.50 used.*

Table 4.4: Continued Factor Loading

Variable		Factor Loading
TKNOW	Taxpayers have adequate tax knowledge on the consequences of not voluntarily registering for TOT.	.855
	Tax official have inadequate advice knowledge of tax laws and their respective regulations.	.876
	Taxpayers have developed their obligation and good culture in their environment for payment of tax.	.816
	I have little idea about the tax rate that I can claim as taxpayers in the computations of my tax liability.	.724
TFAIRN	The trust of taxpayers doesn't determine tax compliance.	.679
	I pay my tax liability whether the tax administration of the tax system unfairly and not transparent.	.801
	I did not believe that income in relation to benefits that you received.	.832
	Personally, would you agree that the perception ofcurrent income affects your decision to under report your income?	.842

Source: Field survey, February, 2019
Factor loadings above 0.50 used.

c) *Test relatesto Classical linear regression model Assumptions*

i. *Test for Hetroskedasticity*

According to white test value of chi square calculated is greater than chi square tabulated given significant level, reject the Ho of no hetroskedasticity otherwise fail reject it and accept alternative to exists hetroskedasticity.

Table 4.5: White test regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.567[a]	.321	.298	.001499862

Source: SPSS regression output

Table 4.6: Chi Square calculated and tabulated

Chi Square calculated and tabulated

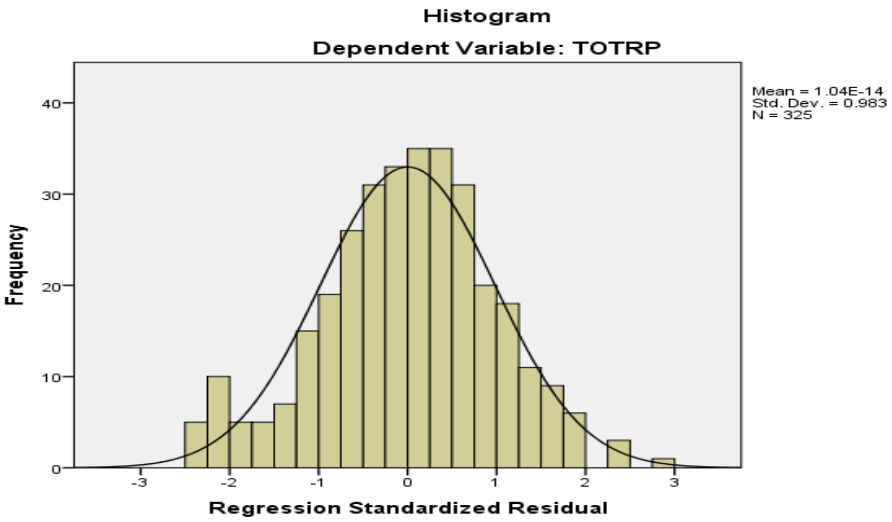
Test	Test t-statistics χ^2 calculated $=nR^2$	χ^2 (5% sig. level) $\chi^2\alpha(p)$, where p=xi+1
White's test	104	190.112

Source: SPSS regression output

The t-statistics value (chi square calculated) from table 4.6 above is 104 which a reless than chi square tabulated at 5% significant level, 190.112. Hence 104areless than 190.112fail and no hetroskedasticity. They have no treatment required for hetroskedasticity.

ii. *Test for Normality*

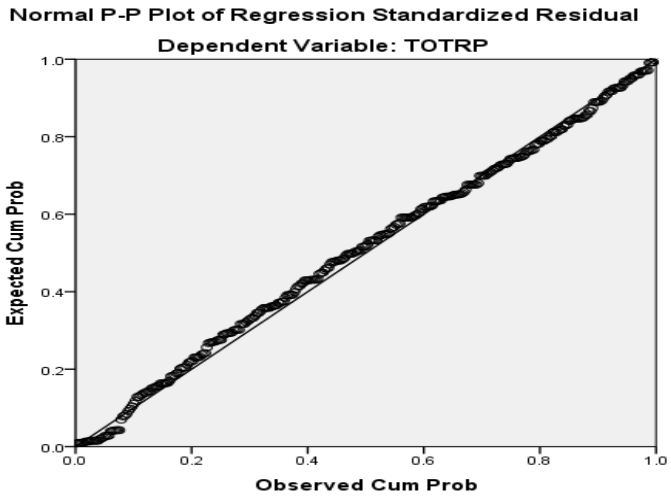
The skewness and kurtosis data are normally distributed the range of values need to be from -3 to +3. Because without probability sampling, error estimates cannot be constructed (Field, 2009).



Source: SPSS output by the researcher

Figure 4.11: Normality of residual

iii. *Linearity*



Source: SPSS regression output by the researcher

Figure 4.12: TOT Performance Residuals P-P Plot

Conclude that normal distribution residuals around mean were zero and inferences of the researcher made population parameter valid.

iv. *Test for Multi-Co linearity*

Table 4.7: Correlation Matrix: Explanatory Variables

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
ESMP	.715	1.398
MCOMT	.495	2.022
TREG	.575	1.738
ITS	.562	1.779
TCC	.616	1.623

TKNOW	.679	1.473
TFAIR	.861	1.162

Source: SPSS regression output by the researcher

Current model VIF values are below 10 and tolerance statistics above 0.2 so there is no variable suffered from excessive and any treatment for multi-Colinearity of the data.

d) Regression Analysis

i. *Correlation Analysis*

Pearson's product moment correlation coefficient (PMCC) assess the degree of agreement and strength relationship between both variables contain quantifiable dependent variable and one or more quantifiable independent variables (Mark et al., 2007).

Table 4.8: Pearson Correlation Matrix between Variables

		TOTRP	ESMP	MCOMT	TREG	ITS	TCC	TKNOW	TFAIR
Pearson Correlation	TOTRP	1.000	.462**	.414**	.449**	.454**	-.232*	.448**	-.472**
Sig. (1-tailed)		.	.000	.000	.000	.000	.000	.000	.000
N		325	325	325	325	325	325	325	325

Source: Correlation matrix result by the researcher accordingly,

1. The correlation between TOT performance and employee qualification and manpower positive (0.462**) with p-value 0.000< 0.05. Thus employee qualification and manpower had 46.2% positive relationship with TOT performance.
2. The correlation between TOT performance and management commitment level is positive (0.414**) with p-value 0.000< 0.05. Thus management commitment level had 41.4% positive relationship with TOT performance.
3. The correlation between turnover tax performance and taxpayers registration is positive (0.449**) with p-value 0.000< 0.05. Thus taxpayer's registration had 44.9% positive relationship with TOT performance.
4. The correlation between TOT performance and technology and information system is positive and strong (0.454**) with p-value 0.000< 0.05. This more technological factor such as electronic tax register machines are crucial TOT income collection use each firms in woreda.
5. The correlation between turnover tax performance and tax compliance cost is negative and weak close to zero (0.232*) with p-value 0.000< 0.05. Thus tax compliance cost had 23.2% negative relationship with TOT performance.
6. The correlation between turnover tax performance and tax knowledge is positive and strong (0.448**) with p-value 0.000< 0.05. Thus tax knowledge had 44.8% positive relationship with TOT performance.
7. The correlation between turnover tax performance and tax fairness is strong negative (0.472**) with p-value 0.000 <0.05. Thus tax fairness had 47.2% negative relationship with TOT performance.

ii. *Test for Model summary*

A small value of R^2 casts was doubt about the usefulness of the regression equation.

Table 4.9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.720[a]	.518	.501	.555

Source: SPSS regression output by the researcher

From outcome of the value of R square was (0.518)51.8 percent of deviations in turnover tax collection are caused by changes explanatory variable.48.2 percent of the variations in turnover tax collection not included in the model in revenue authority.

iii. *Analysis of One Way ANOVA*

Table 4.10: Analysis of Variance

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	103.532	11	9.412	30.573	.000[b]
	Residual	96.357	313	.308		
	Total	199.889	324			
a. Dependent Variable: TOTRP						

Source: SPSS regression output by the researcher

Hypotheses were tested at significance level 0.05 and conventionally used. Probability values of the boundary between rejecting and not rejecting null hypothesis (Ogula, 2014). The F critical at 5% level of significance was 0.000 and F calculated (30.573) is greater than the F critical so this shows overall model was significant.

iv. *Multiple Regression Coefficients*

Table 4.11: Multiple regression coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	86.462	.204		423.417	.000***
ESMP	.133	.034	.180	3.873	.000***
MCOMT	.146	.032	.257	4.597	.000***
TREG	.161	.041	.205	3.968	.000***
ITS	.142	.036	.208	3.981	.000***
TCC	-.043	.044	-.052	-1.035	.301
TKNOW	.102	.037	.132	2.773	.006***
TFAIR	-.100	.025	-.169	-3.988	.000***

Source: SPSS regression output by the researcher

v. *The Regression Model Equation*

$$\text{TOT performance} = 86.462 + 0.133\text{EQMP} + 0.146\text{MCOMT} + 0.146\text{TREG} + 0.142\text{ITS} - 0.043\text{TCC} + 0.102\text{TKNOW} - 0.10\text{TFAIR} + \varepsilon$$

e) Discussion of the Findings and Hypothesis test

i. *Effectiveness of Turnover tax administration*

$H0_1$: There is no significant relationship between Employee qualification and manpower with performance of TOT collection.

Employees qualification and manpower are positively related with performance of TOT collection and most statistically significant (p-value = 0.000) and t-ratio of 3.873 greater than 2 was significant. This implies that administration brings one unit changes in employee's qualification and manpower than it is now, this will results 0.133 units or 13.3% changes the performance of TOT collection. We reject the null hypothesis stated that there is no significant relationship between employee qualification and manpower with performance of TOT collection. The authority still needs to add its man power by recruiting knowledgeable manpower and develop skills of the existing employees through trainings about understanding of tax structure and understand tax laws.

As an interview,

> *"We have a shortage of well trained and qualified personnel supposed to serve for returns analysis taxes and rates at the local level, even the few are not properly trained in budgetary and financial management systems. Revenue office was results responsible for not to attain target revenue collection from turnover tax sources……"* (Participants 10 male, 2 female)

This finding agrees finding of Kayaga (2010) that financial constraints has led to hiring of tax officials who lack understanding of the tax laws they are administering, inexperienced the concepts of accounting requisite to analyzing returns.

$H0_2$: There is no significant relationship between management commitment and performance of TOT collection.

Management commitment level are positively related with performance of TOT collection and most statistically significant (p-value = 0.000) and t-ratio of 4.597greater than 2was significant. This implies that administration capability brings one unit changes in management commitment level than it is now, this will results0.146 or 14.6% changes performance of TOT collection. We reject the null hypothesis stated that there is no significant relationship between management commitment and performance of TOT collection. Tax offices were serious managerial problem which slow strategic leadership for implementing TOT policies, not well-motivated plans to compete effectively gaining turnover tax performance.

As the interview;

> *"I think probably most management employees would not try detail implement turnover tax policies and strategies. There is legal enforcement and give advice direction of dishonest of experts enter into work to improved turnover tax collections performance……."*(Participant 10male, 2 female)

The findings agree with finding of Ayugi (2015) where he found out that revenue collection functions are greatly influenced by factors such as, board characteristics' leadership styles, top management commitment and organizational structure.

$H0_3$: There is no significant relationship between taxpayer's registration and performance of TOT collection.

Taxpayer's registrations are positively related with performance of TOT collection and most statistically significant (p-value = 0.000) and t-ratio of 3.968 greater than 2 was significant. Administration capabilities bring one unit changes in taxpayer's registrations than it is now, this will result in 0.161 units or 16.1% changes the performance of TOT collection. We reject the null hypothesis there is no significant relationship between taxpayer's registrations and performance TOT collection.

Taxpayer's registration was inadequate effective revise their number every year from taxpayer's record with submits their book, need of knowledge (awareness) about the time, ways of registering, exaggerated rules imposed and inconsistent TOT registration system followed by the authority.

As the interview;

> *"I think that there is shortage of manpower and incompetence associated with inconveniency of SIGTAS that using to decide, they need society buy goods and services without TOT and unconsciousness of the taxpayers about the responsibilities that they do have in relation to tax registration……"*(Participants 10 male, 2 female)

This finding support finding of Moyi & Muriithi, (2003) that increases burden of taxpayers was discourage. Similarly agree finding Katusiime (2007) as cited in Baingana (2011) argued that inadequate tax payers' registrations is the most important factor to affects the collection procedure and revenue collection performance.

$H0_4$: There is no significant relationship between Technological and information system and performance of TOT collection.

Technology and information system are positively related with performance of TOT collection and most statistically significant (p-value = 0.000) and t-ratio of 3.981 greater than 2 was significant. We reject the null hypothesis that there is no significant relationship between technological and information system and performance of TOT collection. There is no effective control manipulation of the cash register machines when purchasing and sales good and services. Thus provide a mistaken check of gross sales. The TOT registrant was sale goods and services without tax invoices.

As the interview;

> *"Tax administration activities are supported by ICT partially. Tax authorities was not used computer programs which to maintain taxpayer register and process of TOT returns. This results increasing opportunity for people to evade tax…."*(Participants 10 male, 2 female)

These findings validated finding by Mugo (2016) found that ICT infrastructure determines how revenue collection systems are implemented and used by customers as wheel this affects revenue collection.

i. *Attitude towards payment of tax on turnover tax performance*

$H0_8$: There is no significant relationship between tax knowledge and performance of TOT collection.

Tax knowledge are positively related to performance of TOT collection and most statistically significant (p-value = 0.000) and t-ratio of 2.773 greater than 2 it is significant. Tax knowledge by one unit change than it is now; this will change the performance of TOT collection by 0.102 units or 10.2%. We reject the null hypothesis that there is no significant relationship between tax knowledge and performance of TOT collection. Taxpayers didn't have adequate training of tax knowledge in their environment for payment of tax to undermine volume of sales. Tax as a harm not absolute duty of citizens; reduce tax liability and not feeling of guilty when tax laws are broken.

As an interview from revenue officers indicate that;

> *"I'm not really aware of the tax laws and regulation in details such as obligation and good culture payment of tax. Taxpayers who did not announce their real taxable income for tax collectors and unknowing tax knowledge is very severe on payment of tax. This result revenue office was not pertaining adequate education and awareness training on tax issue for taxpayers……"* (Participant 10male, 2 female)

This finding agrees finding of Asrinanda (2018) states that tax knowledge for taxpayers greatly affects taxpayer's attitude of tax system fair and affect tax revenue received by the condition if the people already have low tax knowledge.

$H0_9$: There is no significant relationship between tax fairness and performance of TOT collection.

Tax fairness are negatively related with performance of TOT collection and most statistically significant (p-value = 0. .006) and t-ratio of 3.988 greater than 2 was significant. Tax fairness by one unit change than it is now, this will changes the performance of TOT collection by 0.100units or 10%. We reject the null hypothesis that there is no significant relationship between tax fairness and performance of TOT collection. Taxpayers think that tax system is unfair if their perception towards less than pay.

As an interview;

> *"I think tax system is really unfair and don't pay a lot of business based on your ability to pay. I think the main reason tax assessor committee was not accurately unbiased to determine tax liability so it is heavily relies the categorization of taxpayers' grades on the judgment. The results exists tax fairness problem in the tax system and make decision to under report your income……."*(Participant 10 male, 2 female)

V. Chapterfive

a) Summary of Findings Conclusion and Recommendation

i. Summary of Findings

The main objective of this study was determining factors affecting turnover tax collection performance. Specific objectives were to identify factors that the effectiveness TOT administration, how taxpayers attitudes toward payment tax. Data was analyzed using factor analysis and multiple linear regressions method. The major findings of the study are the following:

- ✓ Employee qualification and manpower in tax office was not continuous training and clarification about tax collection as well as less competent of duties and responsibilities. A lot of works has to be done by one employee that overloads the employee and they do not finish their work on time. Inadequate employee qualification and man power did not cover all taxpayers in their area.
- ✓ Management commitment by tax officer was slow in strategic leadership for implementing TOT collection policies. No managerial control for successive adequate plans and feasibility to compete effectively turnover tax performance.
- ✓ Taxpayer's registrations ineffective in that taxpayer's not record and undervalue their turnover, exaggerated TOT rules imposed on the taxpayers, the inconsistent TOT registration system followed by the authority. This was also found taxpayers register with involvement of tax official which results unfair competition and registered tax payers will lose their potential customers to illegal trader. Inconveniency the system and inefficiency of the employees and lack of consciousness of the taxpayers about the responsibility that the authority is using to decide from tax officers.
- ✓ Compliance cost on turnover tax collection revealed a strong negative relationship but compliance cost has insignificant effect on the performance turnover tax collection. The study felt that consultancy charges, filing tax returns on tax computation, traveling cost and cost of hiring professional staff are fair not high.
- ✓ Technology and information system efforts taken by authority did not develop such as comprehensive information system; automate tax affairs means of appropriating awareness by the social media about the tax. They also found from tax office requires TOT registrant taxpayers to sale goods and services without tax invoices, there is no effective control of manipulate cash register machine.
- ✓ Taxpayers did not tax knowledge on the consequences of not voluntarily registering for TOT because tax official gives inadequate advice tax laws and developed respective regulations. Taxpayers have no good culture in their environment for payment of tax. This in turn creates tax payers understate the volume of the sales. In addition to taxpayers little idea to deduct for tax liability determined because the educational level also low. Therefore revenue office is not pertaining adequate education and awareness training on tax issue for majority of taxpayers.
- ✓ Tax fairness by authority not fair to pay income tax depend on benefit received from government so it is categorized on judgment which increase financial position of taxpayers and not paying tax based on ability to pay. They also found tax administration system was unfairly and not transparent as a result taxpayers make decision under report income tax.

VI. Conclusion

- ✓ Employee qualification and manpower are key factor against which efficient tax administration shorten to qualified employees to understanding entire system of turnover tax. The management commitment is vital in the implementation of the TOT collection program. Taxpayers registrations was identify effectively assessment and collection procedures for registering all potential taxpayers without intervention of tax officials, but there is inadequate registration was a challenges for turnover tax collection.
- ✓ Technology and information system was important for local authorities because less usage of computerized information systems especially less usage of electronic tax register machines affect revenue collection positively. Tax knowledge is a cornerstone attitude of taxpayers towards tax payment and impossible to imagine about effective turnover tax collection where there is inadequate knowledge of taxpayers. In tax fairness there was no fair income distribution among taxpayers. This result was reducing tax performance.

VII. Recommendation

That is why study suggests the following:

- ✓ Tax officer's using continuous employer's clarification and adequate manpower.
- ✓ Managements ensure commitment level to implement effective policy and motivated staff's employees by financial incentives to encouraged TOT collection commitment. The management was work team spirit by solving internal layers of management problem with its attendant bureaucracy.
- ✓ Revenue authority ensures tax payer status occur contacts and location. Simplifying the registration of businesses with effective door- to- door inspection.
- ✓ ITS facilities on tax administration and effectively control taxpayers manipulate cash register machines and fake invoices to secure more input tax. Using ETRs reduces time with money of tax payers and reduces evasion.
- ✓ Revenue Officers have to carry out education center of TOT. Tax Fairness was an equal treatment of taxpayers with in the same income brackets equally, transparency of revenue office,, unbiased tax assessor committee, and trusts in tax systems.

a) Recommendations Future study

The research has highlighted turnover tax collections. The study had determined persistent factors that hinder the Revenue Authority failure to raise adequate from TOT for economic and social developments. We recommend that further research is required in Revenue Authority to know factors that affect the quality service, politico legal factors, accountability and transparency and tax non compliance.

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Management of Working Capital in Nature based Industry (A Case Study of Dabur India Limited)

By Dr. Namita Yash

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Keywords: working capital, liquidity, profitability.

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I. Introduction

Working capital management play a very important role in financial management. The financial management decisions of companies are concerned with three major areas: Capital structure, Capital budgeting, and Working capital management. Among these major areas, working capital management (WCM) is an area of great significance for every company as it virtually affects its overall profitability and liquidity (Appahami 2008). Efficient working capital management helps to achieve the firm's growth and development and improve the company's earnings and profitability. Management of working capital includes management of inventory, account payable, account receivable, and cash. Proper working capital management positively impacts the profitability of the organization by minimizing the cost of capital spent on the working capital and maximizing the return on current asset investment. The main purpose of working capital management is to provide a proper balance between the three propositions of working capital, they are Liquidity, Profitability. and Risk. This balance is important for the efficient functioning of day to day business operations.

Dabur (India) Limited is one of the most popular names in the nature-based health care industry today. Indian nature-based preparation has a vast demand potential all over the world. In India, the key suppliers of nature-based health care products are Dabur (India) Limited, Baidyanath, Himalaya, Patanjali, Zandu, and Hamdard. Dabur (India) Limited is the first company in India to produce health care products and Fast-Moving Consumer Good (FMCG) using herbs as their basic raw material and applied traditional and scientific tested methods for preparing them. Dabur (India) Ltd. has a portfolio of over 250 Herbal Ayurvedic products and FMCG product.

The present study is a benign effort to explore and address the core issues belonging to Working Capital Management, Liquidity, and Profitability in Dabur (India) Limited and discover ways to make improvements in it.

II. Literature Review

Many researchers all over the world mainly concentrated on the use of Working Capital Management, Liquidity, and profitability, and discussed in many nations.

Sonem and Shin (1998) used a simple of 58985 firms taking the period 1975 to 1994 to investigate the relationship between net trade life cycle and profitability. The aim of this study was to identify the efficiency of working capital management and corporate profitability. In all cases, they found a strong relative relationship between the length of the firm's net trade cycle and profitability.

Deloof (2003) examined the relationship between working capital management and profitability for a sample of 1009 large Belgium nonfinancial firms taking the period from 1992 to 1996. He had got a negative relationship between the profitability of the firm and the cash conversion cycle as well as account receivable days. He suggested that the firm can increase profitability by reducing the cash conversion cycle and account receivable days.

Lazardis and Tryforidis (2009) have examined the relationship between working capital management and profitability of listed companies in the Athen Stock Exchange. A sample of 131 listed companies for the period of 2001 to 2004 was taken to investigate the relationship. They had found that regression analysis was showing a statically significance profitability and the cash conversion cycle. They suggested that the manager could create value for shareholders by holding efficiently the cash conversion cycle and keeping each different component to an optimal level.

Vishani and Sheh had taken 23 listed companies in the consumer electric industry from 1995 to 2005 to find out the impact on profitability by different

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Working Capital Policies. Their approach was to find out the relationship between profitability (i.e. ROCE) and liquidity (current ratio). They find a weak positive relationship as 9 out of 23 companies showed a negative relationship and therefore concluded that there is no significant relationship between profitability and liquidity.

Singh and Pandey (2008) had investigated the impact of working capital on the profitability of Hindalco Industries Limited for the period from 1990 to 2007 by studying components of working capital. They got the result that the current ratio, liquidity ratio, receivable turnover ratio, and working capital to total asset ratio had a statistically significant impact on the profitability of Hindalco Industries Limited.

III. Objective

- To examine the effectiveness of working capital management of Dabur (India) Limited.
- To examine the relationship between liquidity and profitability of the Company.
- To analyse the liquidity position of the company.

IV. Research Methodology

Sample Design: The sample for the study has been selected a company named Dabur (India) Limited, which is the world's largest Ayurvedic and Natural Health Care Company.

Data Collection: The study is mainly based on secondary data which is collected from Annual reports and financial statements of Dabur.

Period: This study has data from 2005-06 to 2019-20. The period of data is 15 years to analyse the performance of the company.

Study Technique used: For the analysis of working capital management and liquidity position of company and relationship between profitability and liquidity, the technique of ratio analysis, Motaal's comprehensive rank test, statistical techniques like averages, standard deviation, co-efficient variations, Pearson correlation coefficient, etc. have been used in this study.

V. Analysis of Working Capital of Dabur (India) Limited

❖ Size and Trend Indices of Working Capital in Dabur (India) Limited

Determination of the size of working capital is a pre-requisite for its effective control. The firm can adopt various methods to determine the level of working capital, viz.

- By proper estimation of various components of working capital.
- A certain percentage of fixed capital and
- Equivalent to the cost of production of several months.

The present study indicates that the company determines the various components of working capital requirements by making detailed estimates of various components of working capital such as cash, receivables, and inventory because it is a more reliable and better technique than intuition and rule of thumb. This also provides a basis for effective control over working capital, Companies get sufficient time to take corrective measures whenever necessary.

Table 1: Size and Trend Indices of Current Assets and Current Liabilities and net Working Capital of Dabur (India) Limited

Year	Current Asset Rs. In Cr.		Current Liabilities Rs. In Cr.		Net Working Capital Rs. In Cr.	
2005-2006	471.32	100	489.70	100	-18.38	---
2006-2007	640.96	135.99	562.91	114.94	78.05	100
2007-2008	773.90	164.19	819.89	167.42	-45.96	-58.88
2008-2009	950.80	201.73	900.00	183.78	50.80	86.69
2009-2010	1,105.76	234.60	1,083.33	221.22	22.43	28.73
2010-2011	1949.08	413.53	1,213.76	247.85	735.32	942.11
2011-2012	2315.30	491.23	1,519.88	310.36	195.42	250.37
2012-2013	2603.04	552.28	1,974.52	403.21	628.52	805.27

2013-2014	3055.57	648.30	2,293.70	468.38	762.17	976.51
2014-2015	2730.57	579.34	2,418.49	493.87	312.08	399.84
2015-2016	3215.66	682.26	2,253.48	460.17	962.18	1232.77
2016-2017	3114.47	660.79	2,224.54	454.26	889.93	1140.20
2017-2018	3439.75	729.81	2,43,4.44	497.12	1005.31	1288.03
2018-2019	3586.23	760.89	2,660.31	543.25	925.95	1186.35
2019-2020	4880.26	1035.44	2463.88	503.14	2418.88	3099.14
AVERAGE	2322.18		1687.52		594.85	

Source: Extract from Annual Reports from Dabur (India) Limited.

From Table (1) we can say a current asset is increasing steadily from the year 2005 -6 to 2019-20 except in the year 2014-15 and 2016-2017, where we can see a very slight decrease in the current asset.

Current liabilities also have been increased continuously from the year 2005-6 to 2019-20 except in the year 2015-16 and 2019-20 with a slight decrease in the current asset.

While the net working capital was showing fluctuation throughout the period under study.

Table 1 also shows that the year 2005-06 has been taken as the base year for the period under review for the current asset and current liability. However, 2006 -07 is taken as the base year for working capital due to negative working capital of the year 2005-2006.

It is evident from the figures in the table that the current asset has been showing an increasing trend throughout the period except for the year 2014-15 and 2016-17.

The increase in the current asset is due to an increase in all components of working capital especially Raw material and Receivables. The indices of the current assets recorded a maximum increase in 2020 when the current asset was Rs. 4480.26 crores.

The indices of current liabilities in the company reveal an increasing trend through the period of study except in the year 2015-16, year2016-2017, and 2019-20.

The indices of working capital in DIL showing fluctuation with an increase proceeding decrease in every next year. This trend is showing throughout the period. In the year 2005 -06 and 2007-08, the index of working capital reached a negative level. Table 1 shows that the current liabilities had exceeded current assets in the year 2005-6 and 2007-08.

It can be inferred from the above analysis the volume of business has increased manifold from the year 2005-6 to 2019-2020.

The fluctuating position of working capital is showing an increase and decrease in every alternate year. It shows liquidity position is not steady throughout the year.

- *Circulation of Working Capital of Dabur (India) Limited*

The effectiveness of working capital management is determined by the rate of circulation of working capital in Dabur (India) Limited. An analysis of the circulation of working capital highlights the efficiency with which it is being utilized. The analysis has been made based on certain turnover ratios, which reflect upon the efficiency in the use of working capital and its components. Generally, the higher the level of these turnover ratios, the more efficient is the use and the smaller amount would be the requirement of working capital of a firm. These ratios included working capital turnover ratio (WTR), inventory turnover ratio (ITR), receivables turnover ratio (RTR), and cash turnover ratio (CTR).

Table 2: Statistical Values of Ratios Relating to Circulation of Working Capital in Dabur (India) Limited

Year	Inventory Turnover Ratio	Receivable Turnover Ratio	Cash Turnover Ratio	Working Capital Turnover Ratio
2005-2006	11.57	24.90	36.83	4.04
2006-2007	10.16	18.95	34.39	3.26
2007-2008	9.74	15.10	31.46	3.11
200820-09	9.08	16.10	19.19	3.00
2009-2010	9.59	22.87	17.83	3.10
2010-2011	5.79	17.27	14..64	2.11
2011-2012	6.49	12.99	12.78	2.31
2012-2013	7.32	13.06	12.04	2.37
20i13-2014	7.36	12.24	13.77	2.34
2014-2015	8.12	11.29	28.64	2.90
2015-2016	7.18	10.55	35.80	2.45
1016-2017	6.96	10.55	25.67	2.47
1017-2018	6.17	11.39	25.32	2.25
2018-2019	6.56	11.06	26.00	2.38
2019-2020	6.31	10.54	10.73	1.78
AVARAGE	7.89	14.57	23.00	2.658
STANDARD DEVIATION	1.67	4.46	8.86	0.57
C.V.	21%	30%	38%	21%

Source: Computed from Annual Report of Dabur (India) Limited.

To judge the effectiveness of working capital management of Dabur (India) limited following ratios – ratios-ITR, RTR, CTR, and WTR have been calculated and various statistical values e.g. Mean, Standard Deviation and Coefficient of Variation are presented in TABLE -1

VI. Inventory Turnover Ratio (ITR)

Inventory which leads to an increase in profit of a firm. But beyond a certain point of high inventory turnover Generally, it is believed that a high inventory turnover implies more efficient management of may signal problems because it may lead to a large number of stock outs, leading to a loss of sales. The good inventory ratio is between 5 to 10, which indicate that a firm sells and restock its inventory every 1 to 2 months. This ratio strikes a good balance between having enough inventory on hand and not having reorder too frequently.

As table 2 exhibits that the inventory turnover is ranging from 5 (5.79 in the year 2010-11) to 10 (10.16 in the year 2006-07) except in the year 2005-06, where its value is 11.57. The average value of the inventory turnover ratio is 7.98 times. This good and higher value of the average inventory turnover ratio indicates that Dabur (India) Limited had been able to manage its

inventory very impressively. The C.V. value (21%) of I.T.R. over the entire period was minimum as compared to other components of current assets, it indicates DIL had better control over the raw material than other components of working capital during the period under study.

VII. Receivables Turnover Ratio: (RTR)

This ratio shows the efficiency achieved in using the funds invested in debtors. A higher RTR implies a quicker collection of debtors and enables the company to transact a large volume of business without a corresponding increase in the investment.

It is observed from Table 2 that the receivables turnover ratio has an overall downward trend in the company except in the year 2008-09, 2009-10, 2012-13, and 2017-18. The table further shows that the RTR ranged from 10.35 (in the year 2015-16) to 24.90(in the year 2005-06), this indicates about the half time decrease over this period. During the initial years, RTR was higher than the overall average which is indicative of decreasing performance. Although the average of RTR over the period is 14.57, which confirms that the performance of credit management of Dabur (India) Limited was satisfactory, as the collection period is about 30 days. The C.V. value (30%) of RTR over the entire period is showed that DIL had moderate control over the receivables.

VIII. Cash Turnover Ratio: (CTR)

The cash turnover ratio is calculated by dividing sales by the amount of cash. The CTR indicates the number of times the average cash balance is turned over during the year. The study of CTR provides a deep insight into the cash balances held by a company. Ideal CTR differs from industry to industry. It can be observed from table 2 that the CTR has a fluctuation trend in the Dabur (India) Limited during the period under study. Initially, it has decreased from 36.83 in the year 2005-06 to 12.04 2012-13 and started increase from 12.6 in the year 2012-13 to 35.80 in the year 2015-16, again showing a decreasing trend till 10.73 in the year 2019-20, except in the year 2018-19 where it slightly increased from 25.32 in the year 2017-18 to 26.00 in the year 2018-19. It is observed from the above analysis that the average of this ratio in the DIL was much larger than other components of the working capital.

Further, C.V. is as high as 38% indicating that DIL has unable to exercise better control over the cash during the period under study.

IX. Working Capital Turn over Ratio: (WCTR)

Working capital turnover ratio is the relationship between net sales and net working capital. The overall efficiency with which working capital funds are used can be measured by WCTR. It is known that the faster the working capital turnover, the lower is the investment and the greater the profits.

Table 2 showing a decreasing trend in the working capital turnover ratio during the period of study, except in the year 2011-12, 2012-13,2014-15,2016-17, and 2018-19, but these increases are very slight.

As the average of WCTR is 2.65 over the period, indicate that the overall performance of working capital management was satisfactory to DIL .

The C.V. value (21%) of WCTR over the period was low, which indicates DIL had good control over the working capital during the period under study.

a) The Impact of Working Capital Management on the Profitability of Dil

In table - 3 an attempt has been made to measure the impact of Working Capital Management of Dabur (India) Limited on its profitability by calculating the Working Capital Leverage (WCL) of all the years under study. For this study given formula is used:

Working Capital Levarege (WCL) = GWC / TA + GWC

Where, TA =Total Asset Investment and GWC = Gross Working Capital +GWC = Change in Gross Working Capital

In computing the WCL it has been assumed that the change in GWC in the last year will be maintained in the next year also. The higher degree of WCL, the greater the risk, at the same time it increases the possibility of making a higher profit. So, we can say Working Capital Leverage expresses the relation of efficiency of Working Capital Management with the Profitability of the Organization.

Table 3: Statement Showing Analysis of Working Capital Leverage

Year	Gross Working Capital (Gwc) (Rs. In Crore)	Total Assets (T.A.) (Rs. In Crore)	Working Capital Leverage
2005-06	471.32	1,060.10	------
2006-07	640.96	1,121.59	0.67
2007-08	773.90	1,480.84	0.57

2008-09	950.80	1,889.11	0.55
2009-10	1,105.76	2,075.67	0.57
2010-11	1,949.08	3,922.94	0.63
2011-12	2,315.30	4,200.33	0.60
2012-13	2,603.04	4,736.41	0.58
2013-14	3,055.87	5,311.78	0.62
2014-15	2,730.57	6,106.28	0.47
2015-16	3,215.66	6,932.30	0.49
2016-17	3,114.47	7,732.24	0.40
2017-18	3,439.75	8,701.63	0.41
2018-19	3,586.23	8,436.64	0.43
2019-20	4,880.26	9,354.01	0.60

Source: Computed from Annual Reports of Dabur (India) Limited

Table -3 discloses that the WCL of DIL in the year 2006-07 was the highest among all the years under study which worked out to be 0.67. The higher WCL is also representing the maximum sensitivity of Return on Investment (ROI) due to the change in the level of GWC.

In the year 2017-18 WCL of DIL was the lowest which was 0.41 showing the least sensitivity of ROI due to variability in the level of GWC.

Hence, variability in GWC was most helpful in 2006-07 and least helpful in 2017-18 in increasing profitability of DIL. It is also revealed that the change in ROI was less than the change in GWC investment in all the years under study as the value of WCL was less than unity.

b) Liquidity and Profitability Analysis of (India Dabur) Limited

Generally, it is assumed that there is always a negative relationship between liquidity and profitability. But it cannot be denied that up to a certain level increase in liquidity through the investment of current assets is essential to increase output, sales, and profitability. By keeping this short-run position secure by maintaining liquidity the Finance Manager can plan for profitability in long run. To establish a definite relationship between liquidity and profitability, Karl Pearson's correlation of co-efficient can be applied.

Table 4: Liquidity and Profitability Ratio in Dabur (India) Limited.

Year	Return on net Worth Ratio	Liquidity Ratio
2005-06	0.4328	0.53
2006-07	0.5874	0.68
2007-08	0.5391	0.57
2008-09	0.4769	0.64
2009-10	0.5384	0.63
2010-11	0.4087	1.02
2011-12	0.3755	0.98

2012-13	0.3593	0.89
2013-14	0.3441	0.91
2014-15	0.3177	0.73
2015-16	0.2999	0.94
2016-17	0.2634	0.90
2017-18	0.2373	0.90
2018-19	0.2561	O.86
2019-20	0.2187	1.42
AVERAGE	0.3769	0.84
Co-Efficient of Correlation		-0.6957

Source: Computed from Annual Report of Dabur India Limited

It is evident from the table 4. that liquidity and profitability were adversely correlated because the co-efficient of correlation relating to variables was -0.6957. A negative correlation indicates that the change of liquidity had an opposite effect on profitability i.e. decrease in liquidity increased profitability and vice-versa. It shows that in the company growth in liquidity has a reverse impact on profitability. Thus, it approves that proposition that the higher the liquidity lower the profitability.

c) *Analysis of The Liquidity Position of Dabur (India) Limited*

i. *Mootal's Comprehensive Test for Analysing Liquidity Position of Dil*

Mootal's Comprehensive Test method of ranking has been applied to reach a more comprehensive assessment of liquidity. For this purpose, four different ratios as- Net Working Capital to Current Ratio, Inventory to Current Asset Ratio, Debtors (Trade Receivable) to Current Ratio, Cash to Current Asset Ratio and Loan and Advances and others to Current Asset Ratio have been computed and combined in a point score. A high value of Net Working capital to Current Asset, Trade Receivable to Current Ratio, and Cash to Current Ratio show greater liquidity, and accordingly ranking has been done in that order. On the other hand, a low Inventory to Current Asset Ratio or loan and Advances to Current Asset Ratio indicates a more favorable liquidity position and, therefore, the ranking has been done in that order.

The ultimate ranking has further been done on the basis that the lower the total of individual ranks the more favorable is the liquidity position of DIL and vice versa.

Table 5: Motaal's Comprehensive Test of Liquidity

Year	Net Working Capital to Current Asset Ratio	Rank A	Invent Ory to Curre Nt Asset	Rank B	Debt Ors to Current Asset Ratio	Rankc	Cash To Current Asset Ratio	Rank D	Loans & Advances And Others	Ranke	Total Rank A+B+C+ D+E	Total Ultimate
200 5-06	-0.040	14	0.45	14	0.157	14	0.109	8	0.282	11	61	14
200 6-07	0.12	10	0.40	13	0.221	5	0.094	12	0.281	10	50	11
200 7-08	-0.06	15	0.391	11	0.222	4	0.098	10	0.287	12	52	12
200 8-09	0.05	12	0.394	12	0.186	10	0.156	6	0.261	9	49	10

2009-10	0.02	13	0.385	10	0.108	15	0.173	3	0.332	13	54	13
2010-11	0.38	2	0.363	7	0.182	12	0.143	7	0.096	3	31	5
2011-12	0.33	3	0.355	5	0.199	9	0.180	2	0.094	2	21	1
2012-13	0.24	9	0.324	3	0.185	11	0.197	1	0.100	5	29	4
2013-14	0.25	8	0.318	2	0.220	6	0.160	5	0.084	1	22	2
2014-15	0.11	11	0.356	6	0.260	1	0.101	9	0.133	8	35	7
2015-16	0.30	4	0.340	4	0.251	2	0.068	15	0.124	7	32	6
2016-17	0.28	6	0.355	5	0.208	7	0.097	11	0.111	6	35	7
2017-18	0.29	5	0.365	9	0.205	8	0.088	14	0.133	8	44	9
n2018-19	0.26	7	0.362	8	0.232	3	0.091	13	0.111	6	36	8
2019-20	0.50	1	0.282	1	0.166	13	0.166	4	0.099	4	23	3

Source: Derived from Annual Reports of Dabur (India) Limited.

Based on Motaal's test ultimate ranking it can be said that the liquid position was most sound in the year 2011-12 followed by the years 2013-14 and 2019-20 which were also showing the sound liquid position in DIL, these were again followed by 2012-13, 2010-2011, 2015-16, 2014-15, 2016-17, 2018-19 and 2017-18 as moderate liquid years. While the years 2008-09, 2006-07, 2007-08, and 2009-10 were showing the consequently low liquid position in DIL. The year 2005-06 had shown the least liquid position in DIL.

X. Conclusions

From the analysis of the above study following conclusions has been drawn —

- During the period under study, we can notice from the study of trend indices that the size of Current Assets has been increased ten times, while the size of liabilities increased five times. During the initial years, net working capital was negative, it shows that DIL had adopted an aggressive strategy of working capital by financing its long-term financing needs through short run sources. However, during last years DIL has adopted the moderate strategy by using part of long-term fund in its current asset, as in the year 2019-20 Current Asset was two times of Current Liabilities. Current Assets and Current liabilities are showing an increasing trend through out the period under study, which represents that DIL has shown stability in the case of Current Assets. While net working capital has shown fluctuation throughout the period under study.
- The inventory turnover Ratio has shown that DIL had done efficient and proper management of Inventory. The average RTR has shown satisfactory management of Receivables. But the decrease in Receivables turnover during the period under study showing that the credit policy of DIL has been not as good as it should be. The average Cash turnover Ratio in DIL which was much larger than another component of Working Capital has shown that it is good for business. But CTR has also shown a high fluctuation during the period under study, which reveals that DIL Has unable to exercise proper control over the cash. Average of Working Capital Turnover over the period has shown that the efficiency of Working Capital Management of DIL was satisfactory during the period under study.

- The impact of working capital management on the profitability of DIL has been measured by calculating Working Capital Leverage. The highest value of WCL in the year 2006-07 has shown maximum sensitivity of Return on Investment by the efficiency of working capital management, while least value of WCL in the year 2016-17 has shown minimum sensitivity of Return on Investment by the efficiency of working capital management. As the values of WCL were less than unity during the period under study revealed that change in ROI was less than proportionate to change in GWC investment in all the years under study.
- Liquidity and profitability were adversely correlated because the coefficient of correlation relating to the variable was negative. It shows that in the DIL growth in liquidity has a reverse impact on profitability. Thus, it approves the proposition that the higher the liquidity lower the profitability.
- Motaal's comprehensive test has shown a more comprehensive assessment of the liquidity position of DIL. The result of Motaal's test indicates that the liquidity position in DIL is more or less improvement over the period. As the year 2005-06 had shown the least liquid position and the year 2011-12 had shown the soundest liquid position in DIL. Further from the year 2012-13 till the year 2019-20, DIL has shown a sound to the moderate sound liquid position.

XI. Suggestions

- Management of working capital fluctuation is necessary to maintain the liquidity of the company and to enhance the profitability of the company. A correct estimate of working capital should be made that having fluctuation in the quantity of working capital can be avoided. For correct estimation of working capital requirement, sales force must be logical and realistic.
- There is a need to exercise tight control over excessive investments in Receivables. Receivables amount can be reduced by framing proper credit policies based on credit terms and credit rating customers.
- There is a need to streamline the liquidity structure in the company by formulating plans for exercising control over cash by regularizing cash inflows and outflows.

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The Impact of Credit Risk on the Performance of Banks in Ghana

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Keywords: *credit risk, bank performance, return on assets, interest rate spread, ghana.*

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The Impact of Credit Risk on the Performance of Banks in Ghana

David Kwashie Garr [α] & David Mensah Awadzie [σ]

Abstract- This paper examined the impact of credit risk on the performance of banks in Ghana using unbalanced panel data of 16 banks over the period 1990 to 2018. OLS method of estimation was adopted on a multiple regression equation. The study employed a causal design. The results indicate a significant positive relationship between net interest income and return on assets. Even though there is a negative relationship between return on assets and loan loss provision on one hand and Interest Rate Spread on the other they are insignificant. Again, the relationship between loan loss provision and operating expense/income ratio is negative and significant. However, there is no significant relationship between operating expense/income ratio and net interest income on one hand and interest rate spread on the other. Banks should therefore improve on their interest income generation and minimize their loan loss provisions for good performance.

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I. Introduction and Background

The uncertainty of the banking industry has been confirmed in the words of Santomero (1996), who says, over the years the banking industry has experienced severe losses. Banks that had been performing well suddenly announced large losses due to credit exposures that turned sour, interest rate positions taken, or derivative exposures that may or may not have been assumed to hedge balance sheet risk.

Over the years, bank failures and insolvencies have emerged all over the globe, both in developed and developing countries. Not only have the crises been widespread, but their cost have equally been extremely high, thereby creating an urgent need to encourage governments and bank regulators to establish and strictly enforce oversight measures and not delay in addressing banking sector weaknesses (Thomas, 2001). There has been intensive research by financial institutions, regulators and academics to develop sophisticated models for better market risk estimation. As indicated by Raghavan (2003), risk management underscores the fact that the survival of an organization depends heavily on its capabilities to anticipate and prepare for the change and react to it.

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Ghana is no exception to the challenges of the industry as seven banks collapsed within two years between 2017 and 2018 Even though many reasons were assigned to the collapse of these banks, the two most important ones are about credit risk management and corporate governance. This study investigates an aspect of credit risk management. In this research, credit has been identified as a very important source of risk for banks and other financial institutions and therefore requires special investigation. This paper seeks to determine the impact of credit risk on bank performance using data on universal banks in Ghana from the year 1990 to 2018 that is a period of 29 years. The research used secondary data of sixteen universal banks in Ghana These include the following banks: Agricultural Development Bank, Amalbank (now Bank of Africa), CAL Bank, Fidelity Bank, GCB Bank, Merchant Bank (now Universal Merchant Bank), Prudential Bank, SSB Bank (now SG-SSB Bank), Others are, Access Bank, Barclays Bank, Ecobank, Guaranty Trust, Stanbic, Standard Chartered Bank, United Bank of Africa and Zenith Bank.

Across the globe, the banking sector acts as the source of economic development and growth for any country through their mediation role and services of financial nature. In Ghana the banking sector is assuming an important role and regarded as a key player in the socio-economic progress of the country. A banking system mobilizes savings in productive sectors and in turn meets its obligation towards the community by providing credit to the business sector. Just like any profit-making venture, the main objective of the bank is to maximize the wealth of its shareholders. This objective can only be achieved when the bank seeks to enhance its profitability by performing the lending function along with other functions efficiently. Credit risk is defined as the risk that the promised cash flows from loans and securities held by financial institutions may not be paid in full. It is also the probability that some of a bank's assets, especially its loans will decline in value and possibly become worthless compared to its liabilities.

The worldwide credit crunch which started in 2006 in the United States with sub-prime mortgages is a typical example of how far banking crises can impact economies globally and serves as a wake-up call to bank managers to ensure efficiency in the area of credit

risk management (Garr, 2016). It has highlighted the fundamental importance of the credit decision. As the problems in these mortgages unfolded, it was demonstrated that unsound credit decisions had been made and lessons as to how to manage credit risk effectively had been either ignored or never learned. This shows that poor lending decisions, whether by a financial institution or a corporate, can lead to significant losses. What the incredible losses sustained by banks and others caught up in the credit crunch have underlined is the major impact of credit risk on the wellbeing and profitability of businesses. Being able to manage this risk is a key requirement for any lending decision. This is well understood by banks and other lending institutions that make their profit by advancing money to individual and corporate borrowers (Brown and Moles, 2014).

II. Theoretical Review

a) Economic Theory

This research is based on the theories of financial intermediation, Keynesian theory of money demand and monetary policy, theories of the term structure of interest rate (the yield curve), loanable fund theory, portfolio theory, and agency theory. Researchers such as Schumpeter (1934), Goldsmith (1969), Khatkhate (1972), McKinnon (1973), Shaw (1973), Diamond (1984) and Creane, Rishi, Mobarak, and Sab (2004) have hypothesised that financial intermediation reduces transaction costs, asymmetric information and monitoring costs and this indirectly stimulates growth. Among the early studies, Goldsmith (1969) finds evidence of a relationship between economic and financial development over long periods Keynesians believe that the interest rate, for example which is closely related to credit risk management is a monetary phenomenon, and largely determined by the supply of and demand for money. Monetarists on the other hand, believe that the interest rate, is a real phenomenon, and largely determined by the supply of and demand for loanable funds; a market which reflects actual opportunities and constraints in the investment sector. The quantity theory of money holds that when the money supply changes by a certain percentage, the price level changes by the same percentage. Loanable funds theory assumes that interest rates are determined by supply of loanable funds and demand for credit (Fry, 1995).

b) Credit Risk

Banks are established not only to accept deposits but also to grant credit facilities, and are therefore inevitably exposed to credit risk. Credit risk is by far the most significant risk faced by banks and the success of their business depends on accurate measurement and efficient management of this risk to a greater extent than any other risks (Gieseche, 2004).

Credit risk according to Garside, Stott and Stevens (1999) is conventionally defined using the concepts of expected loss and unexpected loss. Because expected losses can be anticipated, they should be regarded as a cost of doing business and not as a financial risk. Credit risk modelling was pioneered by Merton (1974), who proposes that a firm is expected to default when the value of its assets falls below a threshold value determined by its callable liabilities. While financial institutions have faced difficulties over the years for a multitude of reasons, the major cause of serious banking problems continues to be directly related to among others a lack of attention to changes in economic or other circumstances that can lead to deterioration in the credit standing of a bank's counterparties (Consultative paper issued by the Basel Committee on Banking Supervision, July 1999).

c) Bank Performance

Using bank profitability to represent bank performance, Greuning and Bratanovic (2000) observe that profitability is a revealing indicator of a bank's competitive position in banking markets and of the quality of its management. It allows a bank to maintain a certain risk profile and provides a cushion against short-term problems. Said and Tumin (2011) propose a theoretical link between credit risk and bank performance and this theory suggests that increased exposure to credit risk is normally associated with decreased firm profitability. Hence, a negative relationship is expected between return on assets and return on equity on one hand and credit risk on the other hand. Banks would, therefore, improve profitability by improving screening and monitoring of credit risk.

d) Interest Rate Spread

Related closely to credit risk is the interest rate spread. Interest rate spread is defined as the difference between deposit rate and the lending rate. Interest rate spread is a measure of profitability between the cost of short term borrowing and the return on long term lending. The spread according to Rose and Hudgins (2008) measures the effectiveness and efficiency of a financial firm's intermediation function in borrowing and lending money and also the intensity of competition in the firm's market. Demirguc-Kunt and Peria (2010) support the assertion by Rose and Hudgins by proposing that banking literature has often used bank spreads (the difference between contractual lending and deposit rates) and the ex-post interest margins (measured as interest income minus expenses relative to bank assets) as indicators of banking efficiency and competition. Higher spreads and margins are often interpreted to signal greater inefficiencies and lack of competition in the banking sector. A widening interest rate spread is an evidence of inefficiency in the intermediation process and rising costs of intermediation (Ngugi, 2001). Folawewo and Tennant

(2008) define the interest rate spread as the difference between the average lending rate and the average deposit rate. Following the works of Folawewo and Tennant (2008), the difference between average lending rate and average borrowing rate is adopted in this research to define the interest rate spread.

Developing countries are noted for their large interest rate spreads and high loan losses, and this sparks numerous debates about the impact of banking sector interest rate spread and loan losses on bank profitability and efficiency. These debates can only be resolved through objective analysis of the impact of credit risk and banking sector interest rate spreads on bank performance.

e) Operating Costs

Operating costs are explained by the cost of financial intermediation, market segmentation theory, loanable funds theory as well as Keynesian theory of money demand. Applying the financial intermediation theory and the loanable funds theory would explain how increase in operating costs leads to increase in intermediation cost resulting in high interest rate spread as a result of high cost that is experienced by lending financial institutions in their daily operations.

III. Empirical Literature

Sound and effective banking system is required for a healthy economy to meet new challenges imposed by technological advancement and competition. Researchers such as Pyle (1997), Safakli (2007), Saunder and Cornett (2008) have indicated that the main type of risk in banks is credit risk since by far the largest bank asset item is loans. The main objective of a bank just like any profit-making organisation is to maximise its shareholder value. All activities of banks concerning management of credit and its associated risk and interest rate spread determination are geared towards maximising profit. According to Greuning and Bratanovic (2000), profitability in the form of retained earnings, is typically one of the key sources of capital generation. Also, as observed by Frankel (2001), banks exist to make risky investments, and expecting them to have no bad loans is unrealistic. In an efficient, well-functioning financial system, banks should even fail occasionally. However, Moskow (2001) does not believe that banking crises are inevitable. To him, the more time spent on prevention, the less the need for crisis resolution. Also, in the opinion of Leipziger (2001), the problem is how to judge portfolio quality in a more dynamic sense, as portfolios that appear perfectly healthy one day can look quite unhealthy the next day depending on the external circumstances.

The higher the exposure of a bank to credit risk, the higher is the tendency of the bank to experience the financial crisis and vice-versa The literature reviewed and the arguments by scholars show that the poor performance of banks and series of financial crisis over the years is the result of high credit risk and inadequate credit risk management.

Unfortunately, research on the relationship between credit risk and bank performance in developing economies especially Sub-Saharan Africa is limited. Few studies on the subject are by Das and Ghosh (2007), and Al-Smadi (2010) all on banks outside sub-Saharan Africa. Amidu and Hinson (2006) however researched on how credit risk affects a bank's capital structure, profitability and lending decisions using all banks (nineteen) in Ghana. Luqman (2014) in investigating the effect of credit risk on the performance of Nigerian commercial banks concludes that credit risk measured by the ratio of loans and advances to total deposits and the ratio of Non performing loans as a ratio of loans and advances is negatively related to bank profitability. Das and Ghosh (2007) and Al-Smadi (2010) defined and measured credit risk by using loan loss as a ratio of bank assets and failed to include net interest income, downplaying the importance of income in credit risk analysis. This current study filled the gap by expanding the definition of credit risk to cover loan loss provision, net interest income, and interest rate spread using data on sixteen banks in Ghana. An efficient credit risk management is expected to enhance the performance of a bank.

There are a number of studies that confirm the importance of credit risk management in banks. Studies carried out by Kargi (2011) and Kolapo, Ayeni and Oke (2012), for instance, to assess the impact of credit risk on the performance of Nigerian banks conclude that credit risk management has a significant impact on the profitability of Nigerian banks. Flamini, McDonald and Schumacher (2009) and Dietrich and Wanzenried (2009) propose that bank profitability should reflect bank-specific, as well as risks associated with the macroeconomic environment (non-diversifiable, systemic risk). They indicate that bank profitability is usually measured by the return on average assets and in supporting Bourke (1989) propose that it is expressed as a function of internal and external determinants.

Obideke, Ejeh and Ugwuegbe (2015) used bank assets as a proxy for bank performance, but in this research two variables are used to represent bank performance. These are, operating expenses as a ratio of total operating income (EXP/INC) and profit before tax as a ratio of total assets (PBT/ASSETS) of banks. Otherwise known as Return on Assets (ROA).

IV. Research Methodology

a) Model Specification

For the purpose of this work, following the work of Obideke, Ejeh and Ugwuegbe (2015) OLS method of estimation is adopted on a multiple regression equation

to analyze the effect of credit risk on the performance of banking industry in Ghana, a short unbalanced panel data covering the period 1990 to 2018 for sixteen banks in Ghana.

The study employs a causal design since it allows the measurement of the relationship or impact of an independent variable on the dependent variable. In this research, following the approach of Garr (2013), credit risk (CR) as measured by two ratios loan loss provision as a ratio of bank assets (Angbazo, 1997; Demirguc-Kunt & Huizinga, 1998) and net interest income also as a ratio of bank assets (Kalluci, 2011) Interest rate spread (IRS) is defined as the difference between average lending rate of banks and average borrowing rate of banks. The loan loss provision in this research is a bank's balance sheet account which reflects the bank's estimate of potentially bad loans. Provisions are made to compensate for the impaired value of the related loan principal and interest due. The figure represents what the bank thinks is sufficient to cover losses on its outstanding loans. The net interest income is the difference between interest earned on interest-earning assets and interest paid on deposit liabilities. It measures the efficiency of the bank intermediation process.

The justification for combining credit risk and interest rate spread in determining the impact of credit risk on bank performance is that interest rate spread is one of the strategies banks adopt in managing credit risk. When credit risk is high, a wider interest rate spread is expected to be used to mitigate its effects. And an efficient management of credit risk and interest rate spread is expected to result in higher bank performance (Garr, 2016). About seventy percent of bank business in Ghana is made up of credit. Therefore credit risk is the most dominant risk faced by banks in Ghana. It can therefore be concluded that a profitable bank is the one with a well-managed credit risk.

The research covered sixteen of the banks which are currently either operating in Ghana or defunct. The research covered the period 1990 to 2018. Unbalanced panel data was used because not all the banks were in existence throughout the twenty nine year period. Some of the banks were less than 15 years old in Ghana at the time of this research.

In this research, bank performance as a dependent variable is measured using return on assets which is defined as the ratio of profit before tax to total bank assets. Second, it is defined by using the transaction cost, which is measured by the total operating expense as a ratio of total operating income (OE/OI).

ROA =f (LLP/BankAssets+NII/BankAssets +IRS)… 1

OE/OI=f (LLP/BankAssets+NII/BankAssets+IRS)….2

IRS = Interest Rate Spread

The model is specified as follows:

$$BP - \alpha_0 + \alpha_1 LLP/BA + \alpha_2 NII/BA + \alpha_3 IRS + Ut$$

Where BP is bank performance, LLP/BA is the ratio of Loan Loss Provision to Bank Assets, NII/BA represents the ratio of net interest income to Bank Assets and IRS represents Interest Rate Spread.

V. Data Presentation and Analysis of Findings

a) Descriptive statistics

The summary of the descriptive statistics of the dependent and independent variables are presented in table 1 below. The variables are grouped under bank performance measures: return on assets (ROA), and operating expense (OE) as a ratio of net operating income. The descriptive statistics of the data are presented in five columns containing the variable, ROA, OE/OI, LLP/BA, NII/BA, and IRS.As can be seen all the variables exhibit a positive mean and IRS is negatively skewed.

In the table, return on assets obtained a mean of 0.05% with maximum of 0.096% and minimum of 0.02% respectively. The mean operating expense is 0.56%, with a\maximum of 1.08% and minimum of 0.28%. Operating expense (OE) produces the highest maximum point at 1.08%.

However, LLP obtained a rate at 0.03%, maximum of 0.07% and minimum at 0.01%. The mean of NII was 0.08% with maximum of 0.12% and minimum rate of 0.04%. Lastly IRS achieved a rate of 13.42%, maximum of 20.69% and minimum was at 4.62%.

Table 1: Result of Descriptive Statistics

	ROA	OE	LLP	NII	IRS
Mean	0.056283	0.563577	0.031647	0.081311	13.42241
Median	0.055401	0.464961	0.029250	0.085353	14.16000
Maximum	0.096818	1.078723	0.073122	0.123945	20.69000
Minimum	0.022950	0.278730	0.010094	0.049534	4.620000
Std. Dev.	0.020118	0.260718	0.014942	0.015127	4.208206
Skewness	0.298583	0.881623	0.725000	0.232715	-0.574325
Kurtosis	2.128637	2.324754	3.513216	3.792815	2.768945
Jarque-Bera	1.348356	4.307702	2.858784	1.021261	1.658780
Probability	0.509575	0.116036	0.239454	0.600117	0.436315
Observations	29	29	29	29	29

b) Correlation Matrix

The correlation analysis was performed to measure the strength and direction of the linear relationship between the two variables.

In this study there is strong multi-collinearity among variables as reflected by the coefficient of 0.57 which is close to 1. The correlation tests show a negative relationship between the bank performance variables under study, which are return on assets and operating expense. It also shows a positive relation between the explanatory variable except that of LLP and IRS.

Table 2: Result of Correlation Matrix

	ROA	OE	LLP	NII	IRS
ROA	1.000000	-0.523399	0.087717	0.574944	-0.151740
OE	-0.523399	1.000000	-0.578919	-0.350311	0.208591
LLP	0.087717	-0.578919	1.000000	0.362828	-0.047534
NII	0.574944	-0.350311	0.362828	1.000000	0.142863
IRS	-0.151740	0.208591	-0.047534	0.142863	1.000000

c) Stationarity Tests

The stationarity or unit root test of the data used in this study is conducted using Augmented Dickey Fuller Test and the results are shown below. The study compared test statistic value with that of test critical value at 5% significance level considering p-value and it has been indicated that the three variables ROA, OEand NII had unit roots. This is because the absolute values of the ADF test statistic for each of these variables were less than the absolute variables of the test critical values at 5%. In addition, the p-values corresponding to each of the ADF test statistics for these variables were greater than 5% (0.384, 0.996and 0.051), respectively. In this case, the null hypothesis of no unit roots in the data series could not be rejected and therefore accepted. However, the variables with unit root have been transformed into first difference to bring stationarity in these data, thereafter the modified data was used in the regression model in the study.

Table 3: Result of Augmented Dickey-Fuller (ADF) Stationarity Tests

	ADF Test Statistics	Test Critical Value at 5%	*P - Value
ROA	1.776337	2.971853	0.384
OE	1.093905	2.986225	0.996
LLP	3.520189	2.971853	0.015
NII	2.971589	2.971853	0.050
IRS	3.020515	2.971853	0.045

**Mackinnon (1996) one-sided p-values*

Table 4: Result of Augmented Dickey-Fuller (ADF) Stationarity Tests 1st Difference

	ADF Test Statistics	Test Critical Value at 5%	*P - Value
ROA	5.311283	2.976263	0.000
OE	5.160904	2.986225	0.000
NII	6.957254	2.986263	0.000

**Mackinnon (1996) one-sided p-values*

d) Regression Analysis

Tables 5 and 6 below show the estimated results demonstrating the coefficient values of the explanatory variables as well as indicating how each respective variable impacts the dependent variable. According to the estimated model above, the relationship between return on assets and LLP/BA ratio shows a negative relationship with a coefficient value of -0.227, against a P-value of 0.3190. This indicates that a unit decrease in LLP/BA ratio would result in an increase in the bank performance by 22.7%. This, however, is statistically insignificant. In the table 5, NII/BA ratio exhibits a significant positive relationship with ROA with a coefficient value of 0.895, against a P-value of 0.0005. This means that a unit increase in NII/BA ratio would result in an increase in bank performance by 89.5% which is a substantial increment in performance. The result again indicates that the IRS has a negative relationship with ROA with a coefficient value of -0.001 with a P-value of 0.1136. It implies that a unit decrease in IRS would increase bank performance by 0.1%. The result is, however, statistically insignificant.

Table 5: Result of the Impact of Explanatory Variable on Bank Performance (ROA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LLP	-0.226866	0.223125	-1.016763	0.3190
NII	0.894565	0.222425	4.021864	0.0005
IRS	-0.001223	0.000746	-1.639781	0.1136
C	0.007141	0.018543	0.385128	0.7034

R-squared *0.410765*
Adjusted R-squared *0.340057*

Table 6 below reveals that the second measure of bank performance, OE/OI has a negative relationship with LLP/BA ratio and is significant at 5% significant level. This means that as the independent variable increases bank performance decreases. Again, NII/BA ratio had a negative relationship with bank performance. This also means that as the ratio of the independent variable increases it pushes the bank performance which is measured in terms of expense down. Finally, the IRS also has a positive relationship with bank performance, an indication that when IRS increases bank expense income ratio also increases. When expense income ratio increases it means that the bank's position has worsened.

Table 6: Result of the Impact of Explanatory Variable on Bank Performance (OE)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LLP	-8.652182	2.912911	-2.970287	0.0065
NII	-3.463193	2.903773	-1.192653	0.2442
IRS	0.013241	0.009738	1.359811	0.1860
C	0.941255	0.242080	3.888199	0.0007

R-squared *0.402031*
Adjusted R-squared *0.330275*

VI. Conclusions and Recommendations

Banks should endeavor to improve on loan performance to increase bank performance in terms of earnings on assets. Also a higher quality of loans would result in increase in net interest income and for that matter higher return on assets. Again for banks to enhance performance, they must make the effort to reduce interest rate spread. This is because, a high interest rate spread has the tendency to impact negatively on bank performance.

The second measure of bank performance indicates that when loan loss provision ratio to bank assets reduces operating expenses ratio to operating income increases indicating that when loan loss reduces either operating income reduces or operating expense increases. This means that for Loan loss to go down more expense has to be made in relation to income. Even though the other relationships are not significant the signs of the coefficients indicate that when NII ratio is low, operating expenses ratio increases and so for bank performance to improve, they must increase their net interest income. Finally, bank operating income may fall in relation to operating expense if interest rate spread increases and vice versa. This means that banks would be better off when interest rate spreads are low. This supports the result obtained above in relation to return on assets.

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19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.

- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

The Administration Rules

Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection.

Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.

Criterion for Grading a Research Paper (Compilation) by Global Journals

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.

Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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