



The Impact of Investment Decisions on Firm Profitability of Non-Financial Sectors in Pakistan: Mediating Role of Sales Growth

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ARTICLE INFO

Article History:

Received: November 15, 2022

Revised: December 08, 2022

Accepted: December 15, 2022

Available Online: December 17, 2022

Keywords:

Working capital management

Capital expenditure

Profitability

Pakistan

JEL Classification Codes:

G42, G43, H7, L34

Funding:

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

Investment decisions within the organizations are critical for firm's profitability and also have a long-term impact because many of these decisions are irreversible. Firms with limited funds can achieve impressive returns if their investments are well-planned. Therefore, the research objective is to determine the impact of investment decisions on firm profitability (earning per share) of non-financial sector (Communication, media industry, energy sector etc.) of Pakistan. For this purpose, data was collected for the period of 2011-2021 from the annual reports of non-financial companies which were listed in 100 index Pakistan Stock exchange. The quantitative research approach, longitudinal research design and panel data approach has been used in the study. The panel data results indicates that working capital management (WCM) indicators namely inventory turnover ratio (ITO), average collection period (ACP), average payment period (APP) and cash conversions cycle (CCC) have positive and significant effect on earnings per share. In the same vein, capital expenditure also have positive and significant effect on earnings per share and also has indirect effect through the mediating effect of sales growth which indicates partial mediation because the coefficient after mediation was lower as compared to the direct effect. Based on the findings, the research has contributed a body of literature in the extant literature along with the significant and mediating effect. Therefore, this study could be considered to be a pioneer study that could help the researchers to conduct their research in future. This study could also help to the managers and decisions makers to know about the importance of investment decisions to increase firm profitability.



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Citation: Abbas, Q., Ahmad, R., Asif, M., & Mehmood, A. (2022). The Impact of Investment Decisions on Firm Profitability of Non-Financial Sectors in Pakistan: Mediating Role of Sales Growth. *IRASD Journal of Economics*, 4(4), 527–543. <https://doi.org/10.52131/joe.2022.0404.0097>

1. Introduction

Financial performance plays a vital role for the success or failure of any business (Gill, Biger, & Mathur, 2010). It refers to the firm's ability to generate profit over a period of time (Bhutto, Rajper, Mangi, & Ghumro, 2018). It is equally important for management and stock holders as both the stakeholders are to take various decisions (Aktan & Bulut, 2008). The

financial performance of the companies are being affected by various financial management decisions (Bhutto et al., 2018). Various authors argued that Profitability could decline due to inappropriate financial management decisions (Hunjra, Butt, & Rehman, 2010). Among the financial management decisions, investment decisions are very important at firm level since profitability is largely affected by these decisions (Tariq & Khattak, 2019). Working capital management (WCM) and capital budgeting are the two important investment decisions of the firm by which companies can improve their profitability (Muneer, Ahmad, & Ali, 2017; Raheman, Afza, Qayyum, & Bodla, 2010). Moreover, Gill et al. (2010) claimed that inappropriate management of WCM may adversely influence firm's performance. In other words, Ishtiaq, Latif, Saleem, Tahir, and Tahir (2017) further stated that capital budgeting (expenditures) decisions are also equally important for profitability and therefore performance of the firms could decline due to inappropriate decisions regarding capital budgeting.

Keeping in view the importance of WCM and capital budgeting for profitability, it is therefore clear that firm can increase their financial performance by taking efficient investment decisions (Bhutto et al., 2018). Brigham and Ehrhardt (2013) defined sum of current assets as gross working capital. Further, Li (2016) claimed that increase in WCM also increases profit as financing with WCM will lower down the external cost of borrowing which could increase the profitability. This argument is in support of pecking order theory, which contends that internal financing is less expensive than external financing.

On the other hand, companies also make some investment in non-current assets (Capital Expenditure) in order to earn revenues in future (Grozdić, Marić, Radišić, Šebestová, & Lis, 2020). Gradzewicz (2021) claimed that investing in long lived assets increases profit. It is because investing in long term assets contributes to growth which ultimately increases firm's profit. This argument is in support of Resource Based Theory, introduced by Penrose (2009) in her book "The theory of Growth of the firm" which states that firms must have collection of tangible resources in order to achieve efficiency and superior performance over time.

Previous studies have recognized the four proxies of WCM; Inventory Turnover, Receivable Turnover, Payable Turnover and Cash conversion cycle (CCC) (Raheman et al., 2010; Raheman & Nasr, 2007). A study was conducted by Raheman and Nasr (2007) on examining the relationship between working capital management and profitability and stated that there is a significant negative relationship between inventory turnover, receivable turnover, payable turnover and CCC with profitability whereas David (2015) found positive and significant effect on profitability of inventory turnover, payable turnover and CCC. In contrast, Ebenezer and Asiedu (2013) proved positive but insignificant association between CCC and profitability. Decision regarding non-current assets has been studied by Lidayat and Adrianto (2020) who found no significant association between capital expenditures and profitability whereas Alipour, Mohammadi, and Derakhshan (2015) found significant negative impact of capital investments and profitability. However, Grozdić et al. (2020) studies showed a substantial and positive correlation between capital investments and firm performance. So, the findings with regard to the relationship between investment decisions and profitability seems to be inconsistent.

Apart from this, Bhutto et al. (2018); Gradzewicz (2021); Ishtiaq et al. (2017) and Muneer et al. (2017) claim that capital assets are bought to increase the growth of the firm which eventually increases profit. Growth is measured by Asimakopoulos, Samitas, and Papadogonas (2009); Ishaq (2018) and Kanwal, Shahzad, ur Rehman, and Zakaria (2017) in terms of sales. Impact of sales growth on profitability has been studied by House and Benefield (1995) who found a significant positive relationship between sales growth and profitability. Moreover, Hikma (2019) also claims that upward trend in sales increases profit. Previous studies have used sales growth as an independent variable but not as a mediating variable (Bhutto et al., 2018; Gradzewicz, 2021; Grozdić et al., 2020).

Previously, in Pakistan, the relationship of investment decisions with profitability have been studied separately mainly focusing on manufacturing sector, like Shabbir, Iftikhar, and Raja (2018) studied the impact of WCM on profitability and found significant positive relationship whereas Kanwal et al. (2017) conducted a study on the relationship of WCM with profitability and found significant negative relationship. Likewise Gul (2018), and Tariq and Khattak (2019) examined the importance of capital budgeting for firm's performance and found significant positive association but other sectors like communication, energy etc. also play important role hence should not be ignored. Huge FDI's is being attracted by communication sector. Moreover, media industry provides many employment opportunities, currently 200,000 people are being employed in this sector (Economic Survey of Pakistan, 2021-2022). However, the major part of non-financial sector, i.e.; manufacturing sector, has a share of about 13.4% - 13.7% in GDP but it has declined to 13% in the fiscal year 2021. Communication sector contributes 5% to the GDP. Their revenues for the FY 2020-2021 stood at 488.8 billion whereas in FY 2019-2020 it stood at 268.5 billion in its initially two quarters (Economic Survey of Pakistan, 2019-2020).

Therefore, apart from manufacturing sector, this study has also considered other companies of non-financial sector as managing finance is also important for other companies. Moreover Hanif, Abidin, and Mirza (2019) mentions that non-financial sector in Pakistan is declining because of ineffective investment decisions.

2. Literature Review

2.1 Theoretical Review

2.1.1 Pecking Order Theory

This theory suggests that firm should first rely on internal financing because the external financial is more expensive in terms of cost (Myers, 1984). Therefore, firms should strengthen their internal resources, which could be generated through WCM as it can be used as an alternative source to increase profitability (Li, 2016). On the other hand, Fama and French (1998) theory also stated that the firms' profitability could be decreased if it uses more debts. They further argued that if the firms have low internal financing then they should move towards debts which would increase the cost therefore if the firms have sufficient WCM, then the external financing needs could be minimized which would help to increase the firm's profit (Herison, Sahabuddin, Azis, & Azis, 2022; Li, 2016). It means that conservative WCM policy is positively related with profitability proving pecking order and Fama French theories whereas if the firm's WCM is too low, then it would face high risk of liquidity and therefore, aggressive WCM policy have inverse relationship with profitability (Toby, 2014).

Working capital is measured in different ways. Raheman and Nasr (2007) has measured WCM by inventory turnover (ITO), average payment period (APP), cash conversion cycle (CCC) and current ratio whereas David (2015) has used inventory turnover (ITO), average payment period (APP), cash conversion cycle (CCC) and average collection period (ACP) as proxies for WCM. However, Kirit (2013) took current ratio, quick ratio and liquid ratio to measure WCM but Bhutto et al. (2018), and Amponsah-Kwatiah and Asiamah (2020) considered inventory turnover (ITO), average collection period (ACP), average payment period (APP) and cash conversion cycle (CCC) as important proxies to measure and that's why these four variables are accounted for to gauge WCM decisions in this study.

2.1.2 Resource Based Theory

This theory states that resources owned by firms increase the efficiency, growth and profitability of the firm (Dovita, Rokhmawati, & Fathoni, 2019), therefore, the firm's capital assets are brought into the business to increase the sales growth which leads to increase profitability (Ishtiaq et al., 2017). Moreover, Gradzewicz (2021) stated that if the firms have collection of resources, it can increase its sales growth which gradually increases its profit. It

means that capital assets are positively related with profitability with a mediating role of sales growth proving resource based theory. On the other hand, if firms have lack of resources, its productivity, sales and ultimately profits will be reduced (Alipour et al., 2015; Tyagi & Mahajan, 2022).

2.1.3 Profitability

Different research scholars have defined profitability in different ways; Afza and Nazir (2008); David (2015) defined profitability as the return on the investment of the firm. They measured profitability by ROA and NOP respectively. Moreover Aminu (2012) and Gill et al. (2010) stated that profit is the final operating result of business. They further explained that profitability can be measured in two ways; profit margin ratio and rate of return ratio. Aminu (2012) identified the indicators of profitability as; ROA, ROE and EPS however Ishfaque Ahmed and Khan (2017) explained further that profit is the amount the firm earns after circulating its efforts as expense at the end of an accounting period and used net operating profit to measure profitability whereas Van Horne and Wachowicz Jr (2008) claimed that EPS is a better version of wealth maximization for the measurement of profitability. The reason for being it a better and improved version is that it is the outcome of standardized accounting principles that helps to track the company's financial progress over time (Brigham & Ehrhardt, 2013).

2.1.4 Working Capital Management

One of the basic objective of financial management is to maximize profitability (Yensu, Yiadom, & Awatey, 2016). Moreover, Amponsah-Kwatiah and Asiamah (2020) claims that efficient working capital management (WCM) can enhance profitability. WCM is a metric to judge the company's liquidity. The old Yankee Peddler introduced the concept of WCM who used to earn profit by selling the merchandise and considered merchandise as WCM (Belay, 2010), whereas Guthmann and Douglall (1948) defined WCM as the difference between short term assets and short term obligations. Further, Gladson (1951) claimed that WCM is the difference between current assets, such as cash, receivables, inventories, and prepaid expenses, and current obligations, such as accounts payables, outstanding wages, salaries etc. WCM safeguards the companies from liquidity problem (Van Horne & Wachowicz Jr, 2008). Likewise, Moyer, McGuigan, and Rao (2014) mentioned that liquidity and profitability have two fold effects evidenced negative relation within liquidity and profitability. However, on the other hand, if firm uses internal financing, it would increase its profitability by saving the cost of external financing (Ishfaque Ahmed & Khan, 2017; Aulia, Syah, & Hidayat, 2022; Toby, 2014).

2.1.5 Capital Expenditures

Investment decisions in connection with non-current assets are referred to as capital investments (Ishtiaq et al., 2017). Investing in non-current assets is a very crucial task since it affects profitability (Yohanes, Debela, & Shibru, 2018). The capital expenditure concept was first introduced in 1960's (Michelon, Lunkes, & Bornia, 2020). The capital investment decision taken today can enhance the firm's profitability in future that is why it is viewed as one of the most crucial financial management decisions (Ali, Rehman, Suleman, & Ntim, 2022; Amponsah-Kwatiah & Asiamah, 2020). In order to produce revenues, a manager brings in non-current assets into the business (Tung & Binh, 2021). Therefore, a manager must evaluate investment in capital assets as the incorrect decisions can adversely affect the profitability of the firm (Tariq & Khattak, 2019). Hence, the management is accountable to take proper decisions that may enhance the firm's value as appropriate and right decisions can increase the firm's profitability (Mustapha, 2001). Capital investment decisions are crucial and firm's growth is directly influenced by capital assets which eventually affects profits (Ishtiaq et al., 2017). Sales can be used as a proxy to measure growth. According to the study of Asimakopoulos et al. (2009), there is a strong positive association between sales growth and profitability of non-financial firms in

Greece. Likewise, there are many researchers who have assessed growth through sales (Ishaq, 2018; Kanwal et al., 2017). Therefore, in order to increase growth and profitability, firm must increase resources and invest carefully in capital assets (Ross, 1986). Therefore, this study aims to study the impact of capital expenditure on firm's performance via sales growth.

2.2 Empirical Review

2.2.1 Working Capital Management and Profitability

Empirically, a study was conducted by Akey (2019) on listed manufacturing companies of Ghana for the period of 2009-2017 by using panel data regression model and found that ACP and CCC were found to have a large negative impact on return on assets (ROA) whereas the APP had considerable positive influence. The relationship between profitability of a business and WCM has been examined by Prempeh and Peprah-Amankona (2019) by taking sample of manufacturing companies for the period of 2011-2017. The panel data results found positive relationship between working capital management (CCC, ITO, ACP and APP) and firm's profitability. For the years 2012 to 2016, Evci and Şak (2018) conducted empirical research to demonstrate the tradeoff between WCM and profitability. APP was found to have a negative relationship with the CCC when the fixed effect panel regression was used, while the relationship between inventory turnover and ROA was found to have a positive relationship.

Ting Ren, Hongyan, Youzhi, and Yijhun (2018) looked at the relationship between WCM and firm performance in the context of the Chinese economy from 2010 to 2017. Analysis of a sample of publicly traded Chinese manufacturing companies using the fixed effect panel regression model revealed a negative relationship between WCM and profitability. Shabbir et al. (2018) examined the impact of WCM on profitability using a sample of Pakistan's 30 manufacturing industries for the years 2005 to 2016. The data was analyzed using the GMM model, and the findings showed that raising the ACP, inventory turnover, and CCC had decreased the profitability. Additionally, using data from 204 listed manufacturing firms in Pakistan from 1998 to 2007, Raheman et al. (2010) studied the relationship between WCM and firms' performance and found that all other WCM variables, such as CCC, ACP, and inventory turnover have a significant negative relation with profitability while APP's coefficient indicates a positive relationship.

Bhutto et al. (2018) used a sample of non-financial sector companies listed on the Pakistan Stock Exchange between 2010 and 2015 to study the effect of WCM on profitability. The findings revealed that ACP and CCC significantly increase ROA, whereas APP and ITO significantly decrease ROA. However, only the ACP has a significant positive influence on EPS and ROE, while the average payment period (APP), cash conversion cycle (CCC) and inventory turnover (ITO) all have a large negative impact. He further mentioned that as the businesses have strong credit policies and promptly collect their receivables, the ACP has a large beneficial influence on ROA, ROE, as well as EPS. Amponsah-Kwatiah and Asiamah (2020) studied the WCM impact on profitability by taking sample of listed manufacturing firms of Ghana for a period of 2015-2019. The study revealed that ACP, ITO, APP and CCC have positive effect on profitability whereas according to Samiloglu and Akgün (2016) management can increase profitability by decreasing inventory levels but keeping insufficient inventory can increase ordering cost and can also lead to stock out cost. It may be extracted from the cited literature that WCM significantly affects profitability however there are contradictory views regarding the association between individual WCM proxies and business profitability. Consequently, the following hypothesis are formed:

- H1: Profitability is significantly affected by Inventory Turnover
- H2: Profitability is significantly affected by Average Collection Period
- H3: Profitability is significantly affected by Average Payment Period
- H4: Profitability per share is significantly affected by Cash Conversion Cycle

2.2.2 Capital Expenditures and Profitability

Jovanovic and Rousseau (2014) claimed that over investment in fixed assets will tend to lower down the firm's profit. They conducted the study by taking sample of US manufacturing firms and found significant negative relationship between capital investments and firm's profit. Later Singh, Ma, and Yang (2016) conducted a study by taking 120 sample firms from 30 countries and the results showed that capital assets are significantly negatively related with firm's profitability. However, Aktas, Croci, and Petmezas (2015) examined the relationship of fixed assets with profitability and found negative but insignificant relationship, but Alipour et al. (2015) found significant negative impact of capital investments on profitability. They argued that over intensive and poor quality of fixed assets can decline profitability.

In contrast to the above studies, Grazzi, Jacoby, and Treibich (2016) analyzed the relationship between capital investments and firm's profitability in the manufacturing sector of Italy and France and concluded that tangible capital investments are positively related with profitability because these assets are brought into the business to increase firm's profitability. Moreover, Trifosa, Ventje, and Hendrik (2017) empirically studied the impact of capital expenditure on profitability by analyzing and reporting of capital and revenue expenditure. They claimed that profitability of the firm could be improved through capital investments.

Further Yu, Dosi, Grazzi, and Lei (2017) examined the influence of capital investment on profitability within the perspective of Chinese firms for the period of 1998-2007 and found that capital investments increase profitability, besides they claimed that capital investments increase profits gradually in long run because capital investments are made to increase the sales growth which would eventually increase profit. Furthermore, it was noted by Ishtiaq et al. (2017) that long-term investment choices are crucial for the expansion and profitability of the businesses. Moreover Tariq and Khatkhat (2019) validated the claim and mentioned capital expenditure impacts profitability via sales growth.

However, Grozdić et al. (2020) gave future direction by mentioning that capital expenditures have a significant positive influence on profitability but this relationship can better be tested in the presence of a mediating variable, i.e.; sales growth. Likewise, Gradzewicz (2021) studied the association between firm's tangible capital investment and profitability for the period of 2002-2016 by considering all polish firms and non-financial sector and concluded that capital investments have a significant positive impact on profitability but he recommended that this relationship can be tested well precisely via sales growth because capital assets are brought into the business to promote sales growth which in turn increases profit. Based on the above inconsistent findings, we empirically analyze the association between capital investment and firm's profitability in the light of resource based theory, which states that tangible assets of the firms increases its growth and profitability. The aforementioned debate can be used to establish the following hypothesis.

H5: Sales growth significantly mediates between the relationship of capital expenditure and profitability.

2.3 Conceptual Framework

Based on previous literature, the current research framework is formulated in Figure 1. The research framework consists of four variables. Working capital and capital expenditure are independent variables, sales growth is a mediating variable and earning per share is dependent variable.

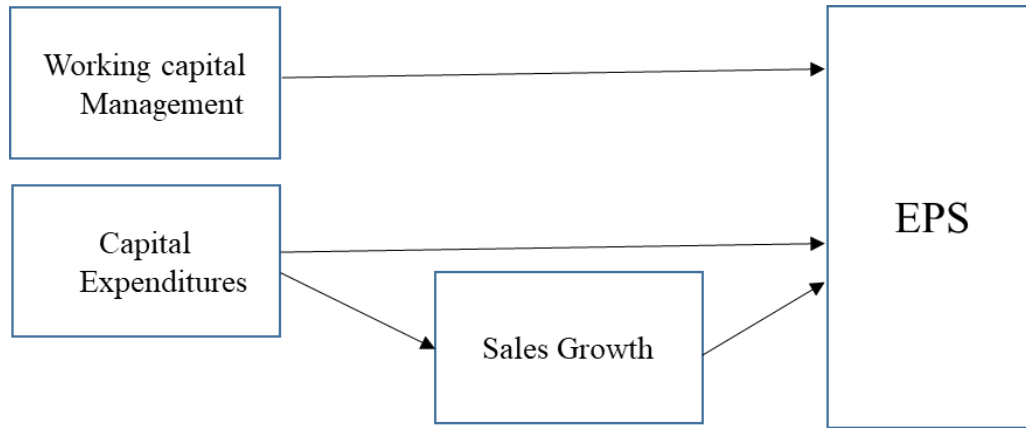


Figure 1: Framework

3. Research Methodology

The research objective was to explore the impact of investment decisions (working capital management and capital investments) on the financial performance of non-financial sector in Pakistan. The quantitative research technique was applied for this objective. This approach is considered to be appropriate for this study because data in quantitative form and it was gathered from secondary sources. Various authors argued that quantitative research approach is more reliable as compare to qualitative research approach (J., T., & P., 2020). In addition, the research design of the study was longitudinal where data was collected in different time horizons. Numerous authors recommended that when the data is collected in different time horizons then the longitudinal research design generally believed to be beneficial for investigation (Shanmuganathan, 2020). Furthermore, the study was explanatory in nature which was mostly recommended by various authors in the extant literature for the quantitative research (Krichene & Baklouti, 2020). This research was conducted with the help of secondary data for the period of 10 years (2011-2021) which was collected from the publicized financial reports of 100 index non-financial sector companies which were listed in Pakistan stock exchange (PSX). The non-financial sector was chosen because this sector has major social and economic contribution in the Pakistan economy (Economic Survey of Pakistan, 2021-2022). Therefore, this sector could not be ignored. There were 77 non-financial companies from where the data was collected for 10 years from 2011 to 2021.

3.1 Variable Measurement

In this section, the measurement of the variables is discussed.

Table 1
Variable Measurements

Variables	Measurement	Empirical Evidence
Independent variables		
Cash Conversion Cycle	$CCC = ITO + ACP - APP$	(Bhutto et al., 2018; Shabbir et al., 2018; Shah, 2016)''
Average Collection Period	$ACP = \text{Net Sales} / \text{Avg Accounts Receivable} * 365$	(Bhutto et al., 2018; Hanif et al., 2019; Shabbir et al., 2018)
Average Payment Period	$APP = \text{Net Purchases} / \text{Accounts Payable} * 365$	(Bhutto et al., 2018; Hanif et al., 2019; Shabbir et al., 2018)
Inventory Turn Over	$ITO = \text{Cost of Goods Sold} / \text{Avg Inventory} * 365$	(Bhutto et al., 2018; Hanif et al., 2019; Shabbir et al., 2018)
Capital Expenditure	$CAPEX = NCA(\text{Current year}) - NCA(\text{Last year}) + \text{Depreciation \& Amortization}(\text{Current year})$	(Gradzewicz, 2021; Van Horne & Wachowicz Jr, 2008; Wachira, 2017)

Mediating variable		
Sales Growth	SG= Current year Sales – Last year Sales / Last year Sales	(Ishaq, 2018; Kanwal et al., 2017)
Dependent variable		
Earnings Per Share	“EPS = Net Income / No. of outstanding Shares”	(Hunjra, Faisal, & Khan, 2017; Thafani & Abdullah, 2014; Vuong, Vu, & Mitra, 2017)

Source: Research Own Illustration

3.2 Model Specification

The relationship among independent, mediating and dependent variables are tested by using the following model. The research have total five models to test the hypothesis of the study.

$$EPS_{it} = \beta_0 + \beta_1 ITO_{it} + \beta_2 ACP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 CAPEX_{it} + \mu \quad (1)$$

$$SG_{it} = \beta_0 + \beta_1 CAPEX_{it} + \mu \quad (2)$$

$$EPS_{it} = \beta_0 + \beta_1 SG_{it} + \mu \quad (3)$$

$$EPS_{it} = \beta_0 + \beta_1 SG_{it} + \beta_2 CAPEX_{it} + \mu \quad (4)$$

Where, (EPS)-earning per share, (ITO)-inventory turnover ratio, (CCC)- cash conversion cycle, (ACP)- average collection period, (CAPEX)-capital expenditure, (APP)-average payment period (SG)-sales growth.

4. Results and Discussion

The results and discussions of the paper are presented in this section. Firstly, the descriptive analysis of the data are shown followed by correlation and panel regression analysis.

4.1 Descriptive Statistics of Variables

The descriptive statistics of the variables are shown in Table.2. Average values of variables are measured by mean whereas the deviation around the mean is being measured by standard deviation. The range of data is defined by minimum and maximum values and the total number of observations are 770. Table.1 predicted values shown that all the variables have positive mean. The mean of EPS (27.40) is greater than its standard deviation (26.23) which shows less deviation and variability around the mean. With standard deviations of 2.98, 4.23, 1.33, 3.442, 0.25, and 222.73, the mean values for average collection period (ACP), inventory turnover (ITO), average payment period (APP) capital expenditure (CAPEX) sales growth (SG) and cash conversion cycle (CCC), are found to be 7.44, 7.60, 1.53, 595.45, 6.75, and 13.10, respectively. These descriptive statistics values are predicted in the following Table.2 below.

Table 2
Descriptive Statistics

	EPS	ITO	ACP	APP	CCC	SG	CAPEX
Mean	27.40	7.60	7.44	1.53	13.10	6.75	595.45
Median	27.10	7.74	4.45	1.361	11.45	7.382	753.27
Max	67.23	16.22	11.38	3.482	19.52	7.81	1167.25
Min	7.85	0.47	4.32	0.035	5.381	6.96	339.29
Std. D	26.23	4.23	2.98	1.33	3.442	0.25	222.73
Observation	770	770	770	770	770	770	770

Source: Researchers own Illustration

4.2 Diagnostics test and Regression Analysis

The study has used the panel data. Before hypothesis testing, various diagnostics tests were applied followed by regression analysis.

4.2.1 Diagnostic Statistics

Before hypothesis testing, the researcher has used various diagnostics tests. Regression diagnostics are used to evaluate model assumptions and determine whether there are any observations that have a large, unintended influence on the analysis.

4.2.2 Autocorrelation and Heteroscedasticity

In order to test the problem of autocorrelation, the Wooldrige test is used. It is evident from the extant literature that if the values of autocorrelation and heteroskedasticity are greater than 5% then there is no issue of autocorrelation and heteroskedasticity. The Table.3 shows that the probability values of the all the four models are greater than 0.05 which indicates no autocorrelation. On the other hand, heteroskedasticity is tested by using Breuch Pagan test which shows that all the probability values are not greater than 0.05 indicating no heteroskedasticity. All the p-values of autocorrelation and heteroskedasticity are shown in the following table 3 below.

Table 3
Autocorrelation and Heteroscedasticity

Equations	Autocorrelation		Heteroscedasticity	
	p-value	Chi2	p-value	f-value
Eq. 1	0.60	0.83	0.35	0.28
Eq. 2	0.24	0.27	0.46	1.23
Eq. 3	0.16	1.35	0.27	1.10
Eq. 4	0.36	1.46	0.29	0.40

Source: Researchers own Illustration

4.2.3 Multicollinearity (Variance inflation Factor)

It is also one of the most important assumptions of regression model. Multicollinearity arises when an independent variables in a regression equation seems substantially associated with some or all of the other independent factors. Multicollinearity seems to be a concern since it diminishes the statistical significance of an independent variable. Therefore, Variance Inflation Factor (VIF) test is used to check the association between independent variables. If the values of VIF are less than 5 then it indicates that there is no issue of multicollinearity in regression (Hair, 2009). The Table.4 predicted values indicates that all the values are less than 5 which shows that there is no issue of multicollinearity.

Table 4
Variance Inflation Factor

Variables	Model(M) 1-VIF	M 2-VIF	M 3-VIF	M 4-VIF
ITO	2.22			
ACP	1.56			
APP	1.78			
CCC	1.34			
CAPEX	1.78	1.84		1.45
SG			1.45	1.37

Source: Researchers own Illustration

4.2.4 Regression Analysis

Multiple regressions were used to test the influence of independent variables on dependent variable via mediating variable. Since several companies in this study were observed over a number of time periods, panel data was used in this analysis. The analysis has been run in four different models the results of which are shown in the next section.

4.2.5 Panel Regression Model

The research has been conducted on 77 non-financial companies which were listed in 100 index Pakistan Stock Exchange (PSX). The data was collected for 10 years, therefore the total observations were 770. In other words, a 10-year analysis of 77 cross-sectional units is conducted. The 770 observations are pooled or combined in a pooled model, which ignores the data's various cross sections and time series characteristics. The primary issue with this strategy is that it disregards the uniqueness and variability of every firm. It makes no distinctions between individual companies and treats all businesses as one big unit. The Fixed Effect Model, which sees each corporation as a separate entity with its own intercept, provides a solution to this problem. Although intercepts differ for various organizations, the term "fixed effect" is employed because it does not refer to time variation. However, the mean intercept value for every company in the Random Effect Model is always the same.

So, in order to execute the panel regression, suitable model must be chosen. First, we examined the selection between the pooled and random effect model by using the Breuch Pagan Lagrange multiplier test. It is used in a linear regression model to examine for heteroskedasticity and assume that the error terms remain normally distributed. It defines whether the variance of a regression's errors is affected by the values of the independent variables. The test shows that all values in four models were less than 0.05 which shows that the appropriate selected model is random effect model. Then, with the use of the Hausman Test, we make a choice between the Fixed and Random Effect Model. Because a big and considerable Hausman statistic suggests a huge and significant gap between fixed and random effect. Therefore, if the P values are less than 0.05 then the fixed effect model will be accepted and when the p values are greater than 0.05 then we accept the random effect model.

In first model the p value was less than 0.05 which indicates that fixed model is appropriate and in further three models the p value was greater 0.05 this suggests that the random effect model is suitable for such investigation. These results are predicted in the following Table.5 below.

Table 5
Model Selection

Regression Equations	Appropriate Model	P - Value (Hausman Test)
1	Fixed – Effect	0.003
2	Random-Effect	0.4861
3	Random-Effect	0.5961
4	Random-Effect	0.0712

Source: Researcher own Illustration

4.2.6 Hypothesis Testing

In the first model-1 where working capital management (WCM) and capital expenditure (CAPEX) effect was tested on earning per share (EPS) where fixed model was accepted. The WCM was measured on four indicators "inventory turnover ratio (ITO), average collection period (ACP), average payment period (APP), and cash conversion cycle (CCC)". In WCM, Table.6 results shows that coefficient of ITO has a positive significant impact on EPS at 1% level of significance which means that effective management of inventory can increase firm's profit that

supports the proposed hypothesis 1. The result is same with the findings of Haresh (2012); Nyabwanga, Ojera, Lumumba, Alphonse, and Otieno (2012); Quayyum (2011). Table.6 further results shown that coefficient of ACP has a positive and significant effect on EPS at 1% level of significance. This suggests that increasing accounts receivable will lead to increase EPS supporting proposed hypothesis. The results is consistent with Haresh (2012); Prempeh and Peprah-Amankona (2019); Quayyum (2011); Samosir (2018).

Table.6 also revealed that coefficient of APP has positive significant influence on EPS at 5% level of significance with coefficient of 0.656 assisting the proposed hypothesis. It indicates that proper and effective accounts payable may boost corporate profitability. Moreover, the result is consistent with Haresh (2012); Prempeh and Peprah-Amankona (2019); Quayyum (2011) who suggested that effective payment period can increase profitability. With respect to CCC, the results showed the coefficient of CCC has a significant and positive influence on EPS at 1% significance level with coefficient of 0.089 backing our stated hypothesis. However, the coefficient is still smaller than ITO, ACP and APP but result is in line with conclusions from I Ahmed (2013); Ebenezer and Asiedu (2013); Mohamad and Saad (2010). Above results support pecking order theory, which claims that internal funding can boost profitability.

Table.6's projected outcomes, on the other hand, have further demonstrated that capital expenditures have a positive and considerable influence on earnings per share. A mediating variable (SG) in the capital expenditure model is tested by the mediation process Baron & Kenny (1986), which implies that if the results of the direct effects models are significant, the mediation model is run to see whether complete or partial mediation has occurred. Complete mediation occurs when the explanatory variable (CAPEX) becomes negligible in the presence of the intervening variable, as opposed to partial mediation, which occurs when the exogenous variable (CAPEX) becomes significant but has a coefficient that is lower than that of the first regression (SG). In other words, complete mediation occurs when the relationship between EPS and CAPEX cannot exist without a mediating variable (Sales Growth), while partial mediation occurs when the association between EPS as well as CAPEX partially exists in the presence of a intervening variable; sales growth.

Table 6
Hypothesis results

	Eq. 1	Eq. 2	Eq. 3	Eq. 4
ITO	2.541 (0.000)			
CCC	0.089 (0.000)			
APP	0.656 (0.002)			
ACP	0.565 (0.000)			
CAPEX	0.149 (0.000)		0.083 (0.000)	0.115(0 .000)
SG		0.122 (0.000)		0.1111 (0.000)
R ²	0.5745	0.3481	0.3638	0.6065
Adj. R ²	0.5540	0.3173	0.3331	0.5875
F-stat.	28.020*** (0.000)	11.112*** (0.000)	11.867*** (0.000)	31.984*** (0.000)

Source: Researcher Own Illustration

Specifically, we may also state that CAPEX and EPS may be related directly or indirectly. The results of the t-statistics reveal that SG and CAPEX are significant at the 5% level of significance, but that partial mediation is occurring because CAPEX's coefficient has decreased from 0.149577 to 0.111053. As a result, we can conclude that CAPEX indirectly influences EPS in part but not

entirely. In other words, we can assert that CAPEX significantly affects EPS via SG. SG and CAPEX in particular have a favorable, sizable influence on EPS. It means that a rise in CAPEX will result in a slight rise in SG, which raises EPS. Thus, the findings support the Resource Based Theory, which holds that a firm's resources boost efficiency and profitability (Gradzewicz, 2021; Grozdić et al., 2020; Tariq & Khattak, 2019).

5. Conclusion and Recommendations

Investment decisions in organizations are critical for financial performance and have a long-term impact because many of these decisions are irreversible. Firms with limited funds can achieve impressive returns if their investments are well-planned. Previous research has found that Investment Decision has a positive and significant impact on organizational performance. This means that if the investment decision has improved in favor of organizations, then, the financial performance will also increase, and if the investment decisions are not properly taken, then, financial performance can be affected (Gradzewicz, 2021). It has been evidenced in the extant literature that Pakistani non-financial sectors companies are not good in their investment decisions which hinders the performance of the non-financials sectors (Hunjra et al., 2010). To address this issue, paper has attempted to inspect the influence of investment decisions on firm's profitability of non-financial sector in Pakistan. Investment decisions were divided into two categories; Working capital management (WCM) and Capital expenditures (CAPEX) decisions. The WCM was measured by four indicators namely, inventory turnover (ITO), average collection period (ACP), (APP), and cash conversion cycle (CCC). For this purpose, panel data methodology was adopted with explanatory research design to achieve the objectives of the study.

Descriptive and Inferential statistics are used to describe and draw inferences from the data. Fixed effect model was applied to WCM decisions based on Hausman's test, which revealed a strong positive and significant link between ITO, ACP, APP, CCC, and EPS, supporting the pecking order theory. These findings indicate that if working capital of the organizations is properly managed, it can increase profitability. Therefore, it could be argued that non-financial companies in Pakistan should pay a greater attention on their WCM related investment decisions to increase their profitability. This outcome is consistent with earlier research (Bhutto et al., 2018). However, the CAPEX also have positive and significant influence on profitability. The findings indicate that when the decisions for the CAPEX are properly taken then the profitability of the companies also increase. Such finding is consistent with earlier research (Ishtiaq et al., 2017; Michelon et al., 2020).

In addition to this, Shanmuganathan (2020) argued that capital investments are necessary for increasing growth and profitability of the firms. For this purpose, examining the impact of capital investments on profitability via sales growth, Baron and Kenny (1986) mediation test was used to test whether the complete or partial mediation exists. The results showed that partial mediation exists which means that capital assets tend to increase sales growth to some extent which eventually increases EPS. In other words, we can say that incurring the capital investments benefit the firm in long run proving resource-based theory. Based on above results, it is concluded that investment decisions of the firms play an important role in the success of non-financial sector of Pakistan. The research aids managers in controlling the elements of WCM to boost profitability. Moreover, it can help the managers while making strategic investment decisions that may stimulate the growth and profit of the firm.

5.1 Implications

The current study have practical and theoretical implications. Theoretically, previous studies were mainly focused on direct effect of capital expenditures on profitability while have little attention on indirect effect. Also, extant literature was mainly focused on individual effect of working capital management and capital expenditure on profitability while have little attention

on combined effect of working capital management and capital expenditure on profitability with the mediating effect of sales growth. To address these gaps, the present study contributed significant findings along with combined model in the extant literature that could be considered to be a good contribution of the study. Moreover, the previous studies were mainly focused on developed economies while have little attention on developing economies like Pakistan, therefore, the results of current research support the ideas and literature regarding how investment choices affect the profitability of businesses in Pakistan's non-financial sector. Specifically, the finding of this research provided further insight on resource-based theory and pecking order theory. The results also provide a foundation for further research, making it easier for the academicians to comprehend the connection among investment decisions and profitability of non-financial sector of Pakistan.

In addition, this study has some practical implications too. This research could help the policy makers and regulatory bodies in their decision making to know about the importance of working capital management and capital expenditures for profitability because proper investment decisions are of utmost important to improve profitability. In addition, based on these findings, the policy makers could help in recommending standards and proficiency for managing investment of manufacturing firms. Based on results, it is also recommended that the policies of management of non-financial sector should critically consider investment strategies to improve profitability. In other words, management of non-financial sector should implement the strategies to increase WCM since it lowers down the external cost of borrowing and increase profitability. On the other hand, firm should smartly make capital investments to increase their resource which would help to increase its profitability in long run.

5.2 Limitations and Future Directions

Along with practical and theoretical implications, the research has several limitations that could become a new research area for increasing research reliability. Firstly, the study was limited to Pakistan non-financial companies where data was collected for the time period of 2011-2021 which limits the research generalizability therefore, a future research could be done by increasing time period and increasing companies that could increase the research generalizability. Secondly, the research was conducted in Pakistan, a developing country which limits the research generalizability because the environment of the developing countries vary from developed nations, therefore, a future research could be conducted in developed nations which could increase the research generalizability. Thirdly, the research was conducted to test the relation between CAPEX and sales growth with the mediating effect of SG but in future the mediating effect of sales growth could also be used to test the association between WCM and firm's profitability because it has been argued in the study of Elsy (2019) that when the organizations have proper WCM it's sales are also increased which helps to boost the profitability.

Authors Contribution

Qaiser Abbas: introduction, literature review and data collection
Riaz Ahmad: research methodology and data analysis
Muhammad Asif: practical and theoretical implications
Abid Mehmood: proof reading

Conflict of Interests/Disclosures

The authors declared no potential conflicts of interest w.r.t the research, authorship and/or publication of this article.

References

Afza, T., & Nazir, M. S. (2008). Working capital approaches and firm's returns in Pakistan. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, 1, 25-36.

- Ahmed, I. (2013). *Impact of working capital management on performance of listed non financial companies of Pakistan: application of OLS and LOGIT Models*. Paper presented at the Proceedings of 2nd International Conference on Business Management, University of Sargodha, Lahore, Pakistan.
- Ahmed, I., & Khan, M. A. (2017). Impact of Working Capital Management on Profitability: An empirical study of Automobile sector in Pakistan. *Journal of Business Administration and Management Sciences (JOBAMS)*, 2(1), 214-227.
- Akey, A. (2019). *The impact of working capital management on the profitability of manufacturing companies listed on the Ghana stock exchange*. (Doctoral dissertation), University of Ghana, UG space, Accra, Ghana.
- Aktan, B., & Bulut, C. (2008). Financial performance impacts of corporate entrepreneurship in emerging markets: A case of Turkey. *European journal of economics, finance and administrative sciences*, 12(8), 1530-2275.
- Aktas, N., Croci, E., & Petmezas, D. (2015). Is working capital management value-enhancing? Evidence from firm performance and investments. *Journal of Corporate Finance*, 30, 98-113. doi:<https://doi.org/10.1016/j.jcorpfin.2014.12.008>
- Ali, R., Rehman, R. U., Suleman, S., & Ntim, C. G. (2022). CEO attributes, investment decisions, and firm performance: New insights from upper echelons theory. *Managerial and Decision Economics*, 43(2), 398-417. doi:<https://doi.org/10.1002/mde.3389>
- Alipour, M., Mohammadi, M. F. S., & Derakhshan, H. (2015). Determinants of capital structure: an empirical study of firms in Iran. *International Journal of Law and Management*, 57(1), 53-83. doi:<https://doi.org/10.1108/IJLMA-01-2013-0004>
- Aminu, Y. (2012). A nexus between liquidity/profitability trade-offs for working capital management in Nigerias manufacturing sector. *International Journal of Arts and Commerce*, 1(6), 55-58.
- Amponsah-Kwatiah, K., & Asiamah, M. (2020). Working capital management and profitability of listed manufacturing firms in Ghana. *International journal of productivity and performance management*, 70(7), 1751-1771. doi:<https://doi.org/10.1108/IJPPM-02-2020-0043>
- Asimakopoulou, I., Samitas, A., & Papadogonas, T. (2009). Firm-specific and economy wide determinants of firm profitability: Greek evidence using panel data. *Managerial finance*, 35(11), 930-939.
- Aulia, A., Syah, F., & Hidayat, M. (2022). Analysis of Working Capital Management Against Profitability At Cv. Dalvyn Photo Studio. *INVOICE: JURNAL ILMU AKUNTANSI*, 4(1), 153-162. doi:<https://doi.org/10.26618/inv.v4i1.7288>
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173-1182.
- Belay, T. (2010). *The effect of management of working capital policies on firms' profitability: evidence from manufacturing private limited companies in Tigray Region, Ethiopia*. (Master Thesis), Mekelle University, Ethiopia.
- Bhutto, S., Rajper, Z., Mangi, R. A., & Ghumro, I. A. (2018). Impact of working capital management on financial performance of firms: Evidence from Pakistani firms. *Sukkur IBA Journal of Management and Business*, 5(2), 24-44.
- Brigham, E. F., & Ehrhardt, M. C. (2013). *Financial management: Theory & practice*: Cengage Learning.
- David, M. (2015). The Influence of working capital management components on corporate profitability. *Research Journal of Business Management*.
- Dovita, Y. G., Rokhmawati, A., & Fathoni, A. F. (2019). The Effect of Sales Growth, Capital Expenditure, and Working Capital Efficiency on Indonesian-Listed-Consumer-Goods Firms' Financial Performance with Capital Structure as Moderating Variable. *Indonesian Journal of Economics, Social, and Humanities*, 1(1), 1-15. doi:<https://doi.org/10.31258/ijesh.1.1.1-15>

- Ebenezer, A. B., & Asiedu, M. K. (2013). The Relationship Between Working Capital Management and Profitability of Listed Manufacturing Firms. *International Journal of Business and Social Research*.
- Evcı, S., & Şak, N. (2018). The effect of working capital management on profitability in emerging countries: Evidence from Turkey. *Financial Management from an Emerging Market Perspective*, 10.
- Fama, E. F., & French, K. R. (1998). Taxes, financing decisions, and firm value. *The Journal of Finance*, 53(3), 819-843. doi:<https://doi.org/10.1111/0022-1082.00036>
- Gill, A., Biger, N., & Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. *Business and Economics Journal*, 10(1), 1-9.
- Gladson, J. (1951). The Accountant's Part in Creative Management. *National Association of Cost Accountants NACA Bulletin*, 33(1), 3-12.
- Gradzewicz, M. (2021). What Happens After an Investment Spike—Investment Events and Firm Performance. *Journal of Business & Economic Statistics*, 39(3), 636-651. doi:<https://doi.org/10.1080/07350015.2019.1708369>
- Grazzi, M., Jacoby, N., & Treibich, T. (2016). Dynamics of investment and firm performance: Comparative evidence from manufacturing industries. *Empirical Economics*, 51(1), 125-179. doi:<https://doi.org/10.1007/s00181-015-0991-2>
- Grozdić, V., Marić, B., Radišić, M., Šebestová, J., & Lis, M. (2020). Capital investments and manufacturing firms' performance: Panel-data analysis. *Sustainability*, 12(4), 1689. doi:<https://doi.org/10.3390/su12041689>
- Gul, S. (2018). The review and use of capital budgeting investment techniques in evaluating investment projects: Evidence from manufacturing companies listed on Pakistan Stock Exchange (PSE). *City University Research Journal*, 8(2), 247-260.
- Guthmann, H. G., & Douglall, H. E. (1948). *Corporate and Financial Policy* (1st ed.). New York: Prentice Hall.
- Hair, J. F. (2009). *Multivariate data analysis*. In. US: Prentice Hall.
- Hanif, H., Abdin, S. Z., & Mirza, B. K. (2019). The Dynamic Relationship between Working Capital Management and Financial Performance: Evidence from Asia. *Journal of Business & Economics*, 11(2), 75-85.
- Haresh, B. (2012). Working capital management and profitability: Evidence from India—An empirical study. *Ganpat University-Faculty of Management Studies Journal of Management and Research*, 5, 1-16.
- Herison, R., Sahabuddin, R., Azis, M., & Azis, F. (2022). The Effect of Working Capital Turnover, Accounts Receivable Turnover and Inventory Turnover on Profitability Levels on the Indonesia Stock Exchange 2015-2019. *Psychology And Education*, 59(1), 385-396.
- Hikma, N. (2019). The impact of decision investment, capital structure and growth on profitability and company value in manufacturing sector of firms in indonesia. *International Journal of Accounting & Finance in Asia Pasific (IJAFAP)*, 2(1), 1-7.
- House, W. C., & Benefield, M. E. (1995). The Impact of Sales and Income Growth on Profitability and Market Measures in Actual and Simulated Industries. *Developments in Business Simulation and Experiential Exercises*, 2, 56-66.
- Hunjra, A. I., Butt, B. Z., & Rehman, K. U. (2010). Financial management practices and their impact on organizational performance. *World Applied Sciences Journal*, 9(9), 997-1002.
- Hunjra, A. I., Faisal, F., & Khan, Z. A. (2017). Application of Lintner's Dividend Model in Pakistan: Sector-Wise Analysis. *NUML International Journal of Business & Management*, 12(2), 1-11.
- Ishaq, M. (2018). Factors Determining Dividend Payout in the Cement Sector of Pakistan. *City University Research Journal*, 8(2), 171-186.
- Ishtiaq, M., Latif, K., Saleem, M., Tahir, N., & Tahir, T. (2017). Investment Decisions and Capital Budgeting Practices in Manufacturing Sector of Pakistan. *Journal of Managerial Sciences*, 11(3), 149-184.

- Jovanovic, B., & Rousseau, P. L. (2014). Extensive and intensive investment over the business cycle. *Journal of Political economy*, 122(4), 863-908. doi:<https://doi.org/10.1086/676405>
- Kanwal, M., Shahzad, S. J. H., ur Rehman, M., & Zakaria, M. (2017). Impact of capital structure on performance of non-financial listed companies in Pakistan. *Pakistan Business Review*, 19(2), 339-353.
- Kirit, R. (2013). Trade-off Between Liquidity and Profitability: A Study of Selected Manufacturing Firms in India. *International Journal of Scientific Research*, 4(2), 34-40.
- Krichene, A., & Baklouti, E. (2020). Internal audit quality: perceptions of Tunisian internal auditors an explanatory research. *Journal of Financial Reporting and Accounting*, 19(1), 28-54. doi:<https://doi.org/10.1108/JFRA-01-2020-0010>
- Li, Q. (2016). *Working capital management and its effect on the profitability of Chinese listed firms*. (Doctoral dissertation), Instituto Universitario de Lisboa,
- Lidayat, O., & Adrianto, F. (2020). Analysis of capital expenditure effect for financial performance on mineral mining company. *Jurnal Program Studi Pendidikan Ekonomi*, 24-33.
- Michelon, P. d. S., Lunkes, R. J., & Bornia, A. C. (2020). Capital budgeting: a systematic review of the literature. *Production*, 30. doi:<https://doi.org/10.1590/0103-6513.20190020>
- Mohamad, N. E. A. B., & Saad, N. B. M. (2010). Working capital management: The effect of market valuation and profitability in Malaysia. *International journal of Business and Management*, 5(11), 140-147.
- Moyer, R. C., McGuigan, J. R., & Rao, R. P. (2014). *Contemporary financial management*. Ohio: Cengage Learning.
- Muneer, S., Ahmad, R. A., & Ali, A. (2017). Impact of financial management practices on SMEs profitability with moderating role of agency cost. *Information Management and Business Review*, 9(1), 23-30. doi:<https://doi.org/10.22610/imbr.v9i1.1593>
- Mustapha, M. Z. (2001). *Firm performance and degree of sophistication of capital budgeting practice: some Malaysian evidence*. Fakulti Perniagaan dan Perakaunan, Universiti Malaya,
- Myers, S. C. (1984). The capital structure puzzle. *Journal of Finance*, 39(3), 575-592.
- Nyabwanga, R. N., Ojera, P., Lumumba, M., Alphonse, J. O., & Otieno, S. (2012). Effect of working capital management practices on financial performance: A study of small scale enterprises in Kisii South District, Kenya. *African Journal of Business Management*, 6(18), 5807-5817.
- Penrose, E. (2009). *The Theory of the Growth of the Firm*. US: Oxford university press.
- Prempeh, K. B., & Peprah-Amankona, G. (2019). Does working capital management affect Profitability of Ghanaian manufacturing firms? *Journal of Advanced Studies in Finance*, 22-23.
- Quayyum, S. T. (2011). Effects of working capital management and liquidity: Evidence from the cement industry of Bangladesh. *Journal of Business and Technology (Dhaka)*, 6(1), 37-47. doi:<https://doi.org/10.3329/jbt.v6i1.9993>
- Raheman, A., Afza, T., Qayyum, A., & Bodla, M. A. (2010). Working capital management and corporate performance of manufacturing sector in Pakistan. *International Research Journal of Finance and Economics*, 47(1), 156-169.
- Raheman, A., & Nasr, M. (2007). Working capital management and profitability—case of Pakistani firms. *International review of business research papers*, 3(1), 279-300.
- Ross, M. (1986). Capital budgeting practices of twelve large manufacturers. *Financial Management*, 15(4), 15-22. doi:<https://doi.org/10.2307/3665776>
- Samiloglu, F., & Akgün, A. İ. (2016). The relationship between working capital management and profitability: Evidence from Turkey. *Business and Economics Research Journal*, 7(2), 1-14. doi:<https://doi.org/10.20409/berj.2016217492>
- Samosir, F. C. (2018). Effect of cash conversion cycle, firm size, and firm age to profitability. *Journal of applied accounting and taxation*, 3(1), 50-57.
- Shabbir, M., Iftikhar, U., & Raja, A. A. (2018). Impact of working capital management on profitability and value of firm: A study of manufacturing sector of Pakistan. *IBT Journal of Business Studies (JBS)*, 14(2), 1-12.

- Shah, N. (2016). Impact of Working capital management on firms profitability in different business cycles: evidence from Pakistan. *Journal of Finance & Economics Research*, 1(1), 58-70. doi:<https://doi.org/10.20547/jfer1601106>
- Shanmuganathan, M. (2020). Behavioural finance in an era of artificial intelligence: Longitudinal case study of robo-advisors in investment decisions. *Journal of Behavioral and Experimental Finance*, 27, 100297. doi:<https://doi.org/10.1016/j.jbef.2020.100297>
- Singh, N., Ma, J., & Yang, J. (2016). Optimizing environmental expenditures for maximizing economic performance. *Management Decision*, 54(10), 2544-2561. doi:<https://doi.org/10.1108/MD-01-2016-0037>
- Tariq, M., & Khattak, S. R. (2019). Practices of Capital Budgeting Techniques: Evidence from the Corporate Sector of Pakistan. *NUML International Journal of Business & Management*, 14(1), 16-28.
- Thafani, A., & Abdullah, M. (2014). Impact of dividend payout on corporate profitability: evident from Colombo stock exchange. *Advances in Economics and Business Management (AEBM)*, 1(1), 27-33.
- Ting Ren, N., Hongyan, Y., Youzhi, X., & Yijun, H. (2018). Working Capital Management and Firm's Performance in China. *Asian Review of Accounting*, 546-562.
- Toby, A. (2014). Working capital management policy and corporate profitability of Nigerian quoted companies: A sectoral analysis. *International Journal of Financial Mangement*, 3(1), 9-20.
- Trifosa, R. K., Ventje, I., & Hendrik, G. (2017). Capital Expenditures and Revenue Expenditure. *Journal Riset Akuntansi*.
- Tung, L. T., & Binh, Q. M. Q. (2021). The impact of R&D expenditure on firm performance in emerging markets: evidence from the Vietnamese listed companies. *Asian Journal of Technology Innovation*, 30(2), 447-465. doi:<https://doi.org/10.1080/19761597.2021.1897470>
- Tyagi, S., & Mahajan, V. (2022). What Determines Profitability in the Indian Automobile Industry? *The Indian Economic Journal*, 70(1), 71-87. doi:<https://doi.org/10.1177/00194662211063574>
- Van Horne, J. C., & Wachowicz Jr, J. M. (2008). Fundamentals of Financial Management. In: Prentice Hall.
- Vuong, N. B., Vu, T. T. Q., & Mitra, P. (2017). Impact of capital structure on firm's financial performance: Evidence from United Kingdom. *Journal of Finance & Economics Research*, 2(1), 16-29. doi:<https://doi.org/10.20547/jfer1702102>
- Wachira, A. N. (2017). *Effect of Capital Budgeting Decisions on Profitability of Listed Firms at Nairobi Securities*. (Doctoral dissertation), University of Nairobi,
- Yensu, J., Yiadom, E. K., & Awatey, S. (2016). Financial Management Practices and Profitability of Business Enterprises in Obuasi Municipality, Ghana. *Financial Management*, 7(16), 66-76.
- Yohanes, D., Debela, K., & Shibru, W. (2018). Effect of financial management practices on profitability of small-scale enterprise: Case Study Hawassa City Administration, Ethiopia. *IOSR Journal of Business and Management*, 20(6), 39-45.
- Yu, X., Dosi, G., Grazzi, M., & Lei, J. (2017). Inside the virtuous circle between productivity, profitability, investment and corporate growth: An anatomy of Chinese industrialization. *Research Policy*, 46(5), 1020-1038. doi:<https://doi.org/10.1016/j.respol.2017.03.006>