Asian Journal of Economics, Business and Accounting

20(1): 42-58, 2020; Article no.AJEBA.63242
ISSN: 2456-639X

Impact of Working Capital Management on Firm's Profitability: A Study on Listed Companies in Sri Lanka

Vianny Jeniston Delima[1*]

[1]Department of Business and Management Studies, Trincomalee Campus, Eastern University, Sri Lanka.

Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

Article Information

DOI: 10.9734/AJEBA/2020/v20i130318
Editor(s):
(1) Dr. Fang Xiang, University of International and Business Economics, China.
Reviewers:
(1) Amir Ahmad Dar, B. S. Abdur Rahman Crescent Institute of Science and Techonology, India.
(2) M. Krishnamoorthi, Kristu Jayanti College (Autonomous), India.
Complete Peer review History: http://www.sdiarticle4.com/review-history/63242

Original Research Article

Received 15 September 2020
Accepted 21 November 2020
Published 09 December 2020

ABSTRACT

Aims: The main aim of the study is to identify whether working capital management has an impact on firm's profitability of listed companies in Sri Lanka.
Place and Duration of Study: Pooled panel data of 95 listed companies from 18 sectors are listed on the Colombo Stock Exchange (CSE) which comprised of 475 observations is used during the period of 2012/2013 to 2016/2017.
Methodology: Descriptive statistics, Pearson's Correlation analysis, ANOVA, and Pooled Regression analysis were employed as measures of analysis. Working capital management components and working capital policies are used as independent variables which comprised of number of days of account receivable (DAR), number of days of inventories (DI), number of days of account payables (DAP), cash conversion cycle (CCC), working capital investment policies (WCIP), and working capital financing policies (WCFP). Current ratio (CR), firm size (SIZE), sales growth (GROWTH), and Debt ratio (DR) were employed as controlled variables. Gross operating profit (GOP) and Return on assets (ROA) were used as dependent variable.
Results: In the descriptive statistics, average of DAR, DI, DAP, and CCC are 64, 63, 97, and 29 days respectively. The average WCIP and WCFP are indicated as 40% and 27% of total assets. For control variables, the average CR, SIZE, GROWTH, and DR are indicated as 2.27, 14.50, 33% and

**Corresponding author: E-mail: jenistond@esn.ac.lk;*

40%. In the Pearson correlation analysis, CCC has negative relationship with GOP and ROA. With regard to WCIP and WCFP, there are negative significant relationships with GOP and ROA. Regression analysis states that working capital management significantly impacts on firm's profitability of listed companies in Sri Lanka.

Conclusion: These findings would be useful to consider on maintaining optimal working capital management components and policies to avoid corporate collapse and to maximize firm's profitability.

Keywords: Working capital management; firm's profitability; gross operating profit and return on assets.

1. INTRODUCTION

Working capital management has been an important part of ensuring the success of companies in recent decades [1]. The increasing attention of working capital management has received because of global financial crisis and the collapse of many organizations such as Lehman Brothers, Worldcom, Enron, and Bear Stearns [2]. In general, globalization and rapid growth nature make more competition among organizations therefore, working capital management becomes vital in order to manage the day to day business operations and it is also important because it is linked to profitability. Maintaining sufficient funds is a key at any moment for businesses [3]. The working capital management concept is a process of managing firms' short-term capital and maintain liquidity in satisfactory level to achieve profitability of firms [4]. [5] states that working capital management is the process of making decisions that impacts the amount and effectiveness of working capital.

Working capital is related to current assets and current liabilities of the firm [6]. [7] defines current assets as "assets which in the ordinary course of business can be, or will be, converted into cash within one year without undergoing a diminution in value and without disrupting the operations of the firm". Current assets are assets which are converted into cash, generally within one year and it consists of cash balance, accounts receivable, short term investments, accrued income, prepaid expenses, and inventories [8]. On the contrary, current liabilities can be defined as "liabilities which are intended, at their inception, to be paid in the ordinary course of business within one year out of the current assets or earnings of the concern" [7]. Current liabilities are obligations which have to be settled generally within one year and it consists of short-term loans, payables, outstanding expenses, and etc. [8].

Profitability is the primary objective of financial management of business and it is measured not only by the success of the product, but also concerned about developing market for continuous success to maximize the owner's wealth [9]. [10] states that profit can be used to test the efficiency, control, and worth of the investment to the owner. A business's ultimate goal is to gain profit to sustain in prevailing market conditions [11].

According to [11,12], previous researches adopt that firm's management know about their optimal level of investment of their firm however firm's manager does not know about the actual optimal level in working capital management. Because of not having a proper understanding of optimal level in working capital would lead to reducing returns for firm [12]. Improper investment in working capital leads to lower profitability [12]. Some methods are used by the managers in companies for working capital management practices which are not depending on financial principles but they use poorly constructed models. Therefore, this practice leads to ineffective management of several working capital component mix which is available and finally it makes either overcapitalized or undercapitalized. Further, many companies are facing high levels of bad debts and high inventory cost due to lack of knowledge of financial managers to plan and control working capital which adversely affects firm's profitability. [13] states that shortage of cash may create more debt in short-term, but it affects the smooth operation in long-term and sudden requirement of cash is unable to finance by financial manager. Some financial managers ignore the companies' operating cycle which practice admits to allow the longer debtor's collection period and shorten creditors' payment period. To measure working capital management, cash conversion cycle is employed in this study and lack of researches has been studied in Sri Lankan context [14]. Most of previous researches have been studied

in developed markets however Sri Lanka is one of the emerging capital markets and examining the Sri Lankan context would provide deeper knowledge and evidence on working capital management. According to [15], majority of the listed companies have invested major proportion in working capital and it is significant to study the way of investing and its impact on profitability. However, there is insufficient evidence of working capital management practices in Sri Lanka. Companies play a major role in the development of GDP in Sri Lanka. Although companies are in a developing stage, those are significantly contributing to national income [16,17]. There is real challenge for Sri Lankan companies to maintain optimum level of working capital for sustaining in the market. Furthermore, this finding would help firms' managers to increase firm's profitability. Thus, investors' confidence would be raised in favor of Sri Lankan capital market and it would lead to the growth of economies in the future.

2. LITERATURE REVIEW

2.1 Theories of Working Capital Management

The working capital management concept has not received much consideration than long-term investment and financial decisions. [18] state that adverse short-term development may cause losses due to inability to manage the liquidity process properly. There is necessary to understand the crucial role of different measurement of company's liquidity position. [18] introduced cash conversion cycle approach to measure working capital management. These researchers focus on static view, operational cycle and cash conversion cycle. In the static view, current ratio is considered as a key indicator of firm's liquidity and capital asset pricing model is employed. Conventional liquidity measure consists of current ratio and quick ratio [19]. According to [18], current ratio provides the difference in the liquidity attributes of current asset investments and quick ratio just tests solvency than current ratio measures. It measures only liquidity but it is not beneficial regarding on-going concept. According to [20], current and quick ratios are not efficient measures in statistical view as well as forecasting future cash flows. Due to the drawback of liquidity measures, operating cycle concept introduced and this measure identifies working capital component life expectancy based on three basic activities such as production, distribution, and collection [18]. Operating cycle is average period needed to get initial outlay to produce, sell, and receive the cash from customers. It provides the realistic but it is not considering cash flow measures and fails to concern about liquidity requirement of a firm by a time dimension. Due to failure of operating cycle concept, cash conversion concept has been taken as alternative liquidity measure [18,21]. Cash conversion cycle is viewed as dynamic concept and it is a more realistic measure which is based on nature of cash cycle [13]. According to [22], cash conversion cycle engages income statement and balance sheet with time perspective. Cash conversion cycle is the net time interval between actual cash expenses and recovery from sales [18]. This measure is seen as the best indicator to measure working capital management [23].

2.2 Working Capital Management Components

Working capital management can be divided into account receivable, inventory management, and account payable however most of companies manage these components by different managers [24].

2.2.1 Cash Conversion Cycle (CCC)

Cash conversion cycle is a tool to measure the efficiency of working capital management. Cash conversion cycle is defined as "the length of time from the actual outlay of cash for purchases until the collection of receivables resulting from the sale of goods or services." [6]. Efficient management of cash becomes one of the major issue to firm because managers have to maintain shorten cash conversion cycle [25]. Shortage between short-term inflows and outflows or in order to maintain shorten cash conversion cycle, it can be either financed by borrowing or alternatively managers must reduce the credit period for account receivables, increase credit period for account payables, use efficient method to manage account receivables and account payables, and efficient management of capital surplus and deficits [26,25]. Positive or negative cash conversion cycle is a useful tool which indicates about the financial operations of the companies.

2.2.1.1 Number of Account Receivable Days (DAR)

Accounts receivable management is managing assets which are owned by the firm as a result of the sale of goods or service in business

activities. According to [27], account receivables is defined as short-term loans given by company to customers. Subsequently, offering credit period for the customers is also an important thing to increase sales over a period of time.

2.2.1.2 Number of Inventory Days (DI)

Inventory is a huge part of the company's total assets and effective management is required for production, selling, and holding required inventory at a minimum holding cost. Company hold inventory for effective production, reducing stock out problem, minimizing purchasing cost by buying an accurate amount of materials. Maintaining inventory is risky challenge because inventory should be reduced to reduce the cash conversion to reduce the cost. However, firm should know about demands to keep the correct level of inventory.

2.2.1.3 Number of Account Payable Days (DAP)

Account payable is defined as "when a firm makes a purchase on credit, it incurs an obligation to pay for the goods according to the terms given by the seller and until the cash is paid for the goods the obligation to pay is recorded in accounts payables" [28].

2.3 Working Capital Management Policies

Working capital policy is one of important guidance to manager current assets and current liabilities without increasing uncertain situations. Working capital policy can be seen from two perspective such as investment and financing. Investment perspective can be seen as the process of making a decision which is based on overall investment in current assets. Financial perspective can be seen as how the company finances its current assets from short-term debt. According to [26], aggressive investment policy can be viewed as companies reduce the holding of current assets and releasing capital from current assets on higher income yielding assets to earn higher returns. The advantages of this policy are reduction of costs due to maintaining lower level of stocks and lower risk involved in respect of default account receivables. Conservative investment policy is an approach in which companies maintain high level of cash reserves, high inventories, and giving generous customer credit facilities and this approach is appropriate when companies operate ambiguous environment in order to avoid stoppage of production [29]. The advantages of this policy are decreased supply cost, defensing during price fluctuation, and increasing goodwill and reputation. Aggressive financing policy can be defined as a high portion of short-term liabilities held by the company [30]. Conservative financing policy is defined as the company uses long-term assets and short-term assets to finance the company's short-term assets.

2.4 Firm's Profitability

Profitability ratio is a measurement of profit which is generated from the company and it can be measured by percentage of profitability. According to [31], high percentage of profitability increases the external finance into the business which helps to increase more profit in the future. Few profitability measurements are net profit margin, return on asset, gross operating profit, and return on investment. Net profit margin is percentages of each sale after deducting interest, dividend, taxes, expenses and costs. Higher return on sales denotes better performance [21]. Return on asset is measured the trend of the company's operating profit as a percentage of total assets and earnings before interest after tax (EBIAT) can be used due to minimized effects in comparing companies [32]. According to [10], gross profit is calculated the percentage of profit after deducting cost of goods sold. Return on investment is calculated net income as a percentage of total assets [32].

2.5 Past Studies on Working Capital Management on Firm Profitability

The literature on the working capital management on firm's profitability is extensive. However, the findings are inconclusive. One literature stream finds that working capital management is negatively associated with firm's profitability whereas other studies show positively linkage with firm's profitability.

[33] studies the relationship between working capital management and profitability for the period of 1992 to 1996. This research uses cash conversion cycle to measure working capital management and the findings state that there is a negative relationship between account payable and profitability which means less profitability leads to a large amount of account payable. There is a negative relationship between account receivable period and profitability. Furthermore, this research finds that gross operating income has a positive relationship with control variable of firm size, sales growth, and negatively related with debt ratio.

[34] investigate the impact of working capital management on profitability during 1975 to 1994.

This research examines the linkage between net trade cycle and firm profitability and findings states that there is a negative relationship between net trade cycle and firm profitability. Furthermore, findings conclude that shorten net trade cycle is more profitable, consequently it generates higher risk adjusted stock returns per unit of total stock.

On the other hand contradictory evidence has been found by few researchers. [35] analyses the relationship between working capital management of U.S manufacturing companies and profitability during the period of 2005 to 2007. This research uses gross operating profit instead of earnings before interest, tax, depreciation and amortization to measure profitability. The results conclude that there is a negative relationship between receivable collection period and profitability rather than that there is no significant relationship account receivable and inventory conversion period with profitability. But result finds that there is a positive relationship between cash conversion cycle and gross operating profit.

[30] examine that there is a positive relation which means higher profit can be achieved by loosening the three parts of a company's working capital management. Furthermore, researchers explain that positive relationship caused due to emerging market and reputations of creditworthiness of firms are not developed thus many companies are having untied working capital management and profitable firms can have loosen working capital due to high profitability but less profit generating companies would be affected by loosening working capital.

[36] state that contradictory evidence on current assets and risk and research states that there is no linear relationship between current assets and revenue systematic risk of US companies.

The working capital management on profitability studies are available related to the Sri Lankan context.

[37] examine working capital management policy and practices of the private sector manufacturing companies in Sri Lanka. Manufacturing companies in Sri Lanka practices working capital management policies as formal and informal policies. Mostly large companies practice formal policies whereas small and medium companies practice informal policies. Thus, company size has an effect on working capital policies. Working capital management components are decided by financial manager. Profitability and working capital policy are influenced by payable management and working capital finance. Profitability is influenced by methods of working capital planning and control. A comparison study is conducted with USA companies and results indicate that there is no difference between two nations.

[38] investigate working capital management on profitability and liquidity of manufacturing companies in the Colombo Stock Exchange during the period of 2008 to 2012. The findings suggest that profitability has a negative relationship with account receivable, inventory turnover period, and cash conversion cycle. Moreover, there is positive relationship between profitability and account payable period. The evidence states that there is negative relationship between leverage and profitability.

[9] examine working capital management and its impact on profitability of selected listed manufacturing companies during the period of 2003 to 2007. Results state that there is a significant negative relationship between cash conversion cycle and return on assets. Further, it reveals that companies' profitability can be increased by reducing the number of inventory days and account receivable.

[17] investigate working capital policy practice of 155 listed companies in the Colombo Stock Exchange. Results reveal that working capital management policies are being practiced by Sri Lankan companies which are different and affecting liquidity and profitability.

[39] examine working capital management and corporate performance of 36 manufacturing companies in Sri Lanka during the period of 2008 to 2013. Cash conversion cycle is used to measure working capital management. Findings explore that there is positive relationship between cash conversion cycle and net operating profitability.

[40] study the working capital management and profitability of 7 commercial banks in Sri Lanka. Findings explore that cash ratio has a high level of impact on net profit margin and return on asset. Sri Lankan listed commercial banks' profitability has been impacted by working capital management.

3. CONCEPTUAL FRAMEWORK

The following conceptual framework was developed based on the literature survey.

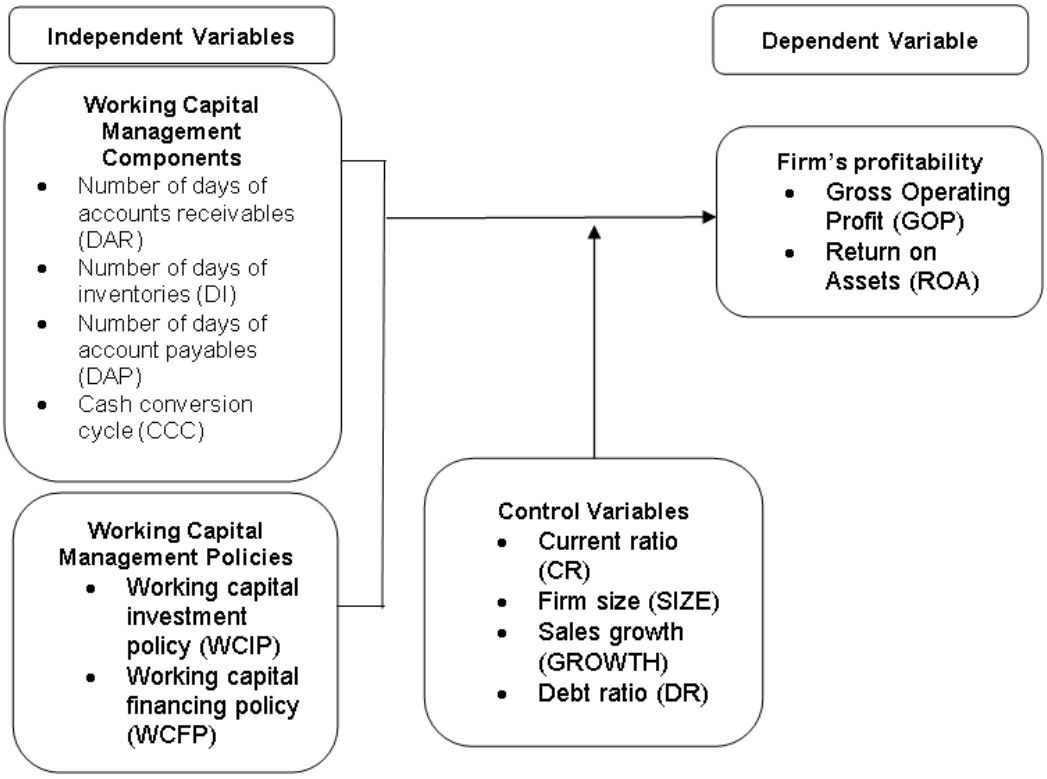

Fig. 1 Conceptual framework
(Source: Developed for the study)

4. METHODOLOGY

4.1 Population of the Study

The population of this study was consisted of all listed companies in Colombo Stock Exchange during the period of 2012/2013 to 2016/2017. There are 298 listed companies in Colombo Stock Exchange as at 29th June 2018 with a market capitalization of Rs.2,893.7 Billion.

4.2 Sample Size and Sampling Methods

This study selects 100 listed companies randomly from 19 sectors. Proportionate stratified random sampling method is applied to select the 100 listed companies as sample for the study. Proportionate stratified random is sample size of stratum is defined proportionally to the number of elements present in the stratum.

4.3 Data Analysis

4.3.1 Descriptive analysis

Measures of descriptive analysis are used such as mean, median, maximum, minimum, and standard deviation to analyze the variables. This analysis is used to assess the individual characteristic of the variables to understand the performance of the companies.

4.3.2 Correlation analysis

Correlation analysis is to examine hypothesis of relationship between working capital management and firm's profitability variables. [41] defines a correlation as "the relationship between two variables where change in one variable is accompanied by predictable change in another variable. The correlation coefficient (r) would be determined to identify the relationship between variables. The correlation coefficient ranges from -1 to +1 to explore the degree of relationship between the study variables. This study assesses the significant relationship of study variables, if the respective p-value is less than the 0.05.

4.3.3 Panel data regression analysis

Panel data regression analysis is efficient estimator to overcome multicollinear problems

Chart 1. These six regression models are developed based on models developed by [28] for firm's profitability

Model 1	**:**	**The effect of DAR on firm's profitability**
GOPi,t	=	$\beta_0 + \beta_1 DAR_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
ROAi,t	=	$\beta_0 + \beta_1 DAR_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
Model 2	**:**	**The effect of DI on firm's profitability**
GOPi,t	=	$\beta_0 + \beta_1 DI_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
ROAi,t	=	$\beta_0 + \beta_1 DI_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
Model 3	**:**	**The effect of DAP on firm's profitability**
GOPi,t	=	$\beta_0 + \beta_1 DAP_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
ROAi,t	=	$\beta_0 + \beta_1 DAP_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
Model 4	**:**	**The effect of CCC on firm's profitability**
GOPi,t	=	$\beta_0 + \beta_1 CCC_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
ROAi,t	=	$\beta_0 + \beta_1 CCC_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
Model 5	**:**	**The effect of WCIP on firm's profitability**
GOPi,t	=	$\beta_0 + \beta_1 WCIP_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
ROAi,t	=	$\beta_0 + \beta_1 WCIP_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
Model 6	**:**	**The effect of WCFP on firm's profitability**
GOPi,t	=	$\beta_0 + \beta_1 WCFP_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$
ROAi,t	=	$\beta_0 + \beta_1 WCFP_{i,t} + \beta_2 CR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DEBT_{i,t} + \eta i + \lambda t + \varepsilon i, t$

between variables [42]. According to [43], advantage of using the panel data regression analysis is panel data has higher degree of freedom and sample flexibility than cross sectional data. Pooled Time Series Panel Data Regression Analysis is used by these researchers such as [33] and [44].

5. RESULTS AND DISCUSSION

5.1 Descriptive Statistics

The summary of descriptive statistics for independent variables and dependent variables which represent descriptive statistics for 95 limited companies from 18 sectors for a period of five years from 2012/2013 to 2016/2017, which has a total of 475 firm year observations.

Table 1 states that the independent variable includes WCM components and WCM policies. In the WCM components, average DAR is 64 days, average DI is 63 days, and average DAP is 97 days which result that CCC is average of 29 days. The minimum and maximum collection periods from account receivable are 3 days and 517 days. The minimum and maximum periods of inventory conversion to sales are 0 days and 754 days. The minimum and maximum periods of firms pay to the account payables are 0 days and 550 days.

Table 1. Summary of descriptive statistics of limited companies

Variable	N	Mean	Maximum	Minimum	Standard Deviation
DAR	475	63.74	517.35	3.43	52.65
DI	475	62.88	753.96	0.00	66.39
DAP	475	97.19	550.37	0.00	91.03
CCC	475	29.42	377.37	-419.90	114.06
WCIP	475	0.40	0.99	0.10	0.77
WCFP	475	0.27	0.98	0.10	0.48
CR	475	2.27	22.90	0.08	2.87
SIZE	475	14.50	18.53	10.53	1.66
GROWTH	475	0.33	16.99	-0.91	1.56
DR	475	0.40	1.63	0.03	2.57
GOP	475	0.26	2.27	-0.19	0.28
ROA	475	0.05	0.85	-0.65	0.14

With regard to WCIP, the average value of is indicated as 40% of total asset, while WCFP denoted as 27% of total assets. For control variables, the average current ratio is indicated as 2.27, mean value of firm's size is reported as 14.50, average debt ratio is indicated as 40%.

In the dependent variable, Gross operating profit is an indicator which denotes the average profit of the listed companies is 26% (mean value). The maximum value for GOP is indicated as 227% and minimum value for GOP is indicated as -19%. It has standard deviation of GOP is reported as 28% which mean GOP of listed companies can deviate from the mean value. Return on assets is an indicator for firm's profitability and its mean value is 5%, the maximum value for ROA is indicated as 85%, and the minimum value for ROA is denoted as -65%. It has standard deviation of 14% by which it can vary from mean value of ROA.

5.2 Pearson's Correlation Analysis

The Pearson's correlation analysis is employed to identify the relationship between independent variable and dependent variable. WCM and Firm's profitability are taken as research variables with control variables. Correlation analysis was used to find out the results of main research question (Whether there is a relationship between working capital management, profitability and of listed companies of Sri Lanka?). Table 2 presents the correlation analysis results.

According to the Table 2, there is a positive significant relationship between DAR and GOP ($r = 0.138$, $p < 0.01$), there is a negative significant relationship between DAR and ROA ($r = -0.270$, $p < 0.01$), there is a negative significant relationship between DI and GOP ($r = -0.118$, $p < 0.01$), there is a negative significant relationship between DI and ROA ($r = -0.398$, $p < 0.01$), there is a positive significant relationship between DAP and GOP ($r = 0.407$, $p < 0.01$), there is a positive significant relationship between DAP and ROA ($r = 0.297$, $p < 0.01$), there is a negative significant relationship between CCC and GOP ($r = -0.330$, $p < 0.01$), and there is a negative significant relationship between CCC and ROA ($r = -0.594$, $p < 0.01$).

There is a negative significant relationship between WCIP and GOP ($r = -0.279$, $p < 0.05$) and there is a negative significant relationship between WCIP and ROA ($r = -0.475$, $p < 0.01$). There is a negative insignificant relationship between WCFP and GOP ($r = -0.013$, $p > 0.01$) and there is a negative significant relationship between WCFP and ROA ($r = -0.351$, $p < 0.01$).

There is a negative significant relationship between DAR and ROA ($r = -0.270$, $p < 0.01$), there is a negative significant relationship between DI and ROA ($r = -0.398$, $p < 0.01$), there is a positive significant relationship between DAP and ROA ($r = 0.297$, $p < 0.01$), and there is a negative significant relationship between CCC and ROA ($r = -0.594$, $p < 0.01$).

According to the Table 2, there is a negative significant relationship between WCIP and ROA ($r = -0.475$, $p < 0.01$) and there is a negative significant relationship between WCFP and ROA ($r = -0.351$, $p < 0.01$).

According to the Table 2, there is a negative significant relationship between CR and ROA ($r = -0.157$, $p < 0.01$), there is a positive insignificant relationship between SIZE and ROA ($r = 0.029$, $p > 0.05$), there is a positive significant relationship between GROWTH and ROA ($r = 0.096$, $p < 0.05$) and there is a negative relationship between DR and ROA ($r = -0.136$, $p > 0.01$).

5.3 Panel Data Regression Analysis

The Pooled Time Series Regression Analysis is developed based on pre-developed models and hypotheses are developed for examining the effects of WCM components such as DAR, DI, DAP, CCC on profitability of the companies such as GOP and ROA. The impact of WCM policies which includes WCIP and WCFP on profitability of the companies such as GOP and ROA.

5.3.1 The impact of DAR on GOP and ROA

According to the Table 3, the adjusted R2 of 0.100 stating that 10% of variation in GOP is explained by DAR of the listed companies. F-statistic is recorded as 11.486 and p-value is 0.000 which revealing that the overall model is statistically significant. There is a positive relationship found between DAR and GOP which evidenced by positive coefficient of 0.001 at significant level of 0.05. This result reveals that an increase in the number of days of account receivable (DAR) by a day has increased the firm's profitability (GOP) by 0.1%. There is

significant negative relationship among CR and SIZE with GOP but there is significant positive relationship between GROWTH and GOP and there is insignificant negative relationship between DR and GOP. The result reveals that adjusted R2 of 0.100 stating that 10% of variation in ROA is explained by DAR of the listed companies. F-statistic is recorded as 11.508 and p-value is 0.000 which revealing that the overall model is statistically significant. There is a negative relationship found between DAR and ROA which evidenced by negative coefficient of 0.001 at significant level of 0.01. This result reveals that an increase in the number of days of account receivable (DAR) by a day has decreased the firm's profitability (ROA) by 0.1%. There is significant negative relationship among CR with ROA but there is insignificant negative relationship between SIZE, DR and ROA and there is significant positive relationship between GROWTH and ROA.

This finding contracts the effective management of working capital and it contradicts from [33,45], [46] and [47]. However, this finding match with [30]. The nature of relationship is determined by strategies which are operated by listed companies in Sri Lanka. In order to sustain in the market and due to high competition, listed companies have to give longer period of time for credit to their customers.

5.3.2 The impact of DI on GOP and ROA

According to the Table 4, adjusted R^2 of 0.094 stating that 9.4% of variation in GOP is explained by DI of the listed companies. F-statistic is recorded as 10.822 and p-value is 0.000 which revealing that the overall model is statistically significant. Results reveals that there is negative significant relationship between DI and GOP by negative coefficient of -0.0003 at significant level of 0.1 (p-value 0.072 < 0.1). This result reveals that an increase in the number of days of Inventory (DI) by a day has reduced the firm's profitability (GOP) by 0.03%. There is significant negative relationship between CR, SIZE and DI however there is significant positive relationship between GROWTH and DI and there is insignificant negative relationship between DR and DI. The findings denote that adjusted R^2 of 0.183 stating that 18.3% of variation in ROA is explained by DI of the listed companies. F-statistic is recorded as 22.249 and p-value is 0.000 which revealing that the overall model is statistically significant. Results reveal that there is a negative significant relationship between DI and ROA by negative coefficient of -0.001 at significant level of 0.1 (p-value 0.000< 0.01). This reveals that an increase in the number of days of Inventory (DI) by a day has reduced the firm's profitability (ROA) by 0.01%. There is significant negative relationship between CR and ROA, there is significant positive relationship between GROWTH and ROA, and there is insignificant positive relationship between SIZE and ROA. It is supported by the previous studies such as [33] and [44].

5.3.3 The impact of DAP on GOP and ROA

According to the Table 5, result indicates that adjusted R^2 of 0.195 stating that 19.5% of variation in GOP is explained by DAP of the listed companies. F-statistic is recorded as 23.969 and p-value is 0.000 which revealing that the overall model is statistically significant. Further, it indicates that there is positive significant relationship with GOP by positive coefficient of 0.001 at significant level of 0.01 (p-value 0.000 < 0.01). It indicates that an increase in the number of days of account payable by a day has increased the firm's profitability (GOP) by 0.01%. There is a significant negative relationship between CR and SIZE with GOP, there is an insignificant positive relationship GROWTH and GOP, and there is an insignificant negative relationship between DR and GOP.

The results reveal that adjusted R^2 of 0.108 stating that 10.8% of variation in ROA is explained by DAP of the listed companies. F-statistic is recorded as 12.523 and p-value is 0.000 which revealing that the overall model is statistically significant. There is a positive significant relationship with ROA by positive coefficient of 0.0004 at significant level of 0.01 (p-value 0.000 < 0.01). It indicates that an increase in the number of days of account payable by a day has increased the firm's profitability (GOP) by 0.04%. There is a significant negative relationship between CR and DR with ROA, there is a significant positive relationship between SIZE and ROA and there is an insignificant relationship between GROWTH and ROA.

Table 2. Correlation analysis: Pearson correlation

	DAR	DI	DAP	CCC	WCIP	WCFP	CR	SIZE	GROWTH	DR	GOP	ROA
DAR	1											
DI	0.006	1										
DAP	0.158**	0.081	1									
CCC	0.338**	0.520**	-0.678**	1								
WCIP	0.393**	0.533**	-0.368**	0.785**	1							
WCFP	0.233**	0.304**	-0.079	0.348*	0.431**	1						
CR	0.066	0.143**	-0.143**	0.227**	0.237**	0.067	1					
SIZE	-0.171**	0.066	-0.216**	0.132**	0.040	-0.026	-0.188**	1				
GROWTH	-0.053	0.087	0.151**	-0.094*	0.011	-0.055	0.140**	0.074	1			
DR	0.000	0.212**	0.048	0.085	0.061	0.047	-0.365**	0.240**	-0.027	1		
GOP	0.138**	-0.118**	0.407**	-0.330**	-0.279**	-0.013	-0.101*	-0.249**	0.063	-0.040	1	
ROA	-0.270**	-0.398**	0.297**	-0.594**	-0.475**	-0.351**	-0.157**	0.029	0.096*	-0.009	0.090	1

***. Correlation is significant at the 0.01 level (2-tailed); *. Correlation is significant at the 0.05 level (2-tailed)*

Table 3. The impact of DAR on GOP and ROA

Variables	Regression Coefficients	
Independent Variable	Firm's Profitability – Model 1	
	GOP	ROA
DAR	0.001**	-0.001***
Control Variables		
CR	-0.018***	-0.009***
SIZE	-0.044***	-0.004
GROWTH	0.020**	0.010*
DR	-0.051	-0.037*
Constant	0.921	0.176
Adjusted R Square	0.100	0.100
F-Statistics	11.486	11.508

*** Significant at the 0.01 level (p<0.01); ** Significant at the 0.05 level (p<0.05); * Significant at the 0.1 level (p<0.1)

Table 4. The impact of DI on GOP and ROA

Variables	Regression Coefficients	
Independent Variable	Firm's Profitability – Model 2	
	GOP	ROA
DI	-0.0003*	-0.001***
Control Variables		
CR	-0.016***	-0.005**
SIZE	-0.047***	0.001
GROWTH	0.020***	0.013***
DR	-0.014	0.023
Constant	0.998	0.080
Adjusted R Square	0.094	0.183
F-Statistics	10.822	22.249

*** Significant at the 0.01 level (p<0.01); ** Significant at the 0.05 level (p<0.05); * Significant at the 0.1 level (p<0.1)

Table 5. The impact of DAP on GOP and ROA

Variables	Regression Coefficients	
Independent Variable	Firm's Profitability – Model 3	
	GOP	ROA
DAP	0.001***	0.0004***
Control Variables		
CR	-0.011**	-0.007***
SIZE	-0.031***	0.007*
GROWTH	0.007	0.006
DR	-0.061	-0.054*
Constant	0.655	-0.055
Adjusted R Square	0.195	0.108
F-Statistics	23.969	12.523

*** Significant at the 0.01 level (p<0.01); ** Significant at the 0.05 level (p<0.05); * Significant at the 0.1 level (p<0.1)

5.3.4 The impact of CCC on GOP and ROA

According to the Table 6, adjusted R^2 of 0.153 stating that 15.3% of variation in GOP is explained by CCC of the listed companies. F-statistic is recorded as 18.136 and p-value is 0.000 which revealing that the overall model is statistically significant. There is a significant negative relationship between CCC and GOP by negative coefficient of 0.001 at significant level of 0.01 (p-value 0.000 < 0.01). It indicates that an increase in the number of days of cash conversion cycle by a day has decreased the firm's profitability (GOP) by 0.01%. There is a significant negative relationship CR and SIZE with GOP. There is an insignificant positive

relationship between GROWTH and DR with CCC.

According to Table 6, adjusted R^2 of 0.359 stating that 35.9% of variation in ROA is explained by CCC of the listed companies. F-statistic is recorded as 54.070 and p-value is 0.000 which revealing that the overall model is statistically significant. There is a significant negative relationship between CCC and ROA by negative coefficient of 0.001 at significant level of 0.01 (p-value 0.000 < 0.01). It indicates that an increase in the number of days of cash conversion cycle by a day has decreased the firm's profitability (ROA) by 0.01%. There is a significant positive relationship SIZE with ROA. There is an insignificant positive relationship between GROWTH and DR with CCC.

5.3.5 The impact of working capital management policies on firm's profitability

In this model, WCIP is considered as independent variables and CR, SIZE, GROWTH and DR are considered as controlled variables and GOP is considered as dependent variables in the first model and ROA is considered in the second model.

According to the Table 7, the working capital investment policy (WCIP) of listed companies show that there is statistically significant negative relationship between WCIP with GOP. The adjusted R^2 of 0.143 stating that 14.3% of variation in GOP is explained by WCIP of the firm. F-statistic is recorded as 16.821 and p-value is 0.000 which revealing that the overall model is statistically significant. It means that WCIP ratio as reflected by total current assets to total assets decreases, or in other words, degree of aggressiveness of WCIP increases, GOP of listed companies increases. It can be further explained that aggressive working capital investment policy leads to increases in GOP.

The working capital investment policy (WCIP) of listed companies show that there is statistically significant negative relationship between WCIP with ROA. The adjusted R^2 of 0.232 stating that 23.2% of variation in ROA is explained by WCIP of the firm. F-statistic is recorded as 29.692 and p-value is 0.000 which revealing that the overall model is statistically significant. It means that WCIP ratio as reflected by total current assets to total assets decreases, or in other words, degree of aggressiveness of WCIP increases, ROA of listed companies increases. It can be further explained that aggressive working capital investment policy leads to increases in ROA.

In this model, WCFP is considered as independent variables and CR, SIZE, GROWTH and DR are considered as controlled variables and GOP is considered as dependent variables in the first model and ROA is considered in the second model.

According to the Table 8, the working capital financing policy (WCFP) of listed companies show that there is statistically insignificant negative relationship between WCFP with GOP but it is not significant at 0.1. The adjusted R^2 of 0.088 stating that 8.8% of variation in GOP is explained by WCFP of the firm. F-statistic is recorded as 10.099 and p-value is 0.000 which revealing that the overall model is statistically significant. It means that WCFP ratio as reflected by total current liabilities to total assets decreases, or in other words, degree of aggressiveness of WCFP increases, GOP of listed companies decreases. It can be further explained that aggressive working capital financing policy leads to decrease in GOP.

The working capital financing policy (WCFP) of listed companies show that there is statistically significant negative relationship between WCFP with ROA. The adjusted R^2 of 0.144 stating that 14.4% of variation in ROA is explained by WCFP of the firm. F-statistic is recorded as 16.932 and p-value is 0.000 which revealing that the overall model is statistically significant. It means that WCFP ratio as reflected by total current assets to total assets decreases, or in other words, degree of aggressiveness of WCFP increases, ROA of listed companies decreases. It can be further explained that aggressive working capital investment policy leads to decrease in ROA.

5.3.6 The overall impact of working capital management components and policies on firm's profitability

According to the Table 9, adjusted R^2 of 0.166 stating that 16.6% of variation in GOP is explained by CCC, WCIP, and WCFP of the listed companies. F-statistic is recorded as 14.433 and p-value is 0.000 which revealing that the overall model is statistically significant. There are significant negative relationships among CCC, WCIP, CR, SIZE and GOP. There are significant positive relationships among WCFP, GROWTH and GOP and there is an insignificant positive relationship between DR and GOP.

Table 6. The impact of CCC on GOP and ROA

Variables	Regression Coefficients	
Independent Variable	Firm's Profitability – Model 4	
	GOP	ROA
CCC	-0.001***	-0.001***
Control Variables		
CR	-0.009*	0.000
SIZE	-0.040***	0.008***
GROWTH	0.012	0.003
DR	0.010	0.012
Constant	0.869	-0.057
Adjusted R Square	0.153	0.359
F-Statistics	18.136	54.070

*** *Significant at the 0.01 level (p<0.01); ** Significant at the 0.05 level (p<0.05); * Significant at the 0.1 level (p<0.1)*

Table 7. The impact of WCIP on GOP and ROA

Variables	Regression Coefficients	
Independent Variable	Firm's Profitability – Model 5	
	GOP	ROA
WCIP	-0.282***	-0.260***
Control Variables		
CR	-0.010**	-0.003
SIZE	-0.045***	0.003
GROWTH	0.018**	0.009***
DR	-0.029	-0.004
Constant	1.041***	0.123
Adjusted R Square	0.143	0.232
F-Statistics	16.821	29.692

*** *Significant at the 0.01 level (p<0.01); ** Significant at the 0.05 level (p<0.05); * Significant at the 0.1 level (p<0.1)*

Table 8. The impact of WCFP on GOP and ROA

Variables	Regression Coefficients	
Independent Variable	Firm's Profitability – Model 6	
	GOP	ROA
WCFP	-0.001	-0.204*
Control Variables		
CR	-0.018***	-0.008***
SIZE	-0.047***	0.001
GROWTH	0.019**	0.009**
DR	-0.043	-0.029
Constant	1.001***	0.140***
Adjusted R Square	0.088	0.144
F-Statistics	10.099	16.932

*** *Significant at the 0.01 level (p<0.01); ** Significant at the 0.05 level (p<0.05); * Significant at the 0.1 level (p<0.1)*

According to the Table 9, adjusted R^2 of 0.379 stating that 37.9% of variation in ROA is explained by CCC, WCIP, and WCFP of the listed companies. F-statistic is recorded as 42.330 and p-value is 0.000 which revealing that the overall model is statistically significant. There are significant negative relationships among CCC, WCFP and ROA and there is an insignificant positive relationship among CR and GOP. There is significant positive relationship between SIZE and ROA. There are insignificant relationships among GROWTH, DR and ROA and there is a significant positive relationship between SIZE and ROA.

Table 9. The overall impact of CCC, WCIP, and WCFP on GOP and ROA

Variables	Regression Coefficients	
Independent Variable	Firm's Profitability	
	GOP	ROA
CCC	-0.0004***	-0.001***
WCIP	-0.172**	0.031
WCFP	0.156***	-0.103***
Control Variables		
CR	-0.008*	-0.00007
SIZE	-0.040***	0.008**
GROWTH	0.015*	0.002
DR	0.011	0.014
Constant	0.888***	-0.030
Adjusted R Square	0.166	0.379
F-Statistics	14.433	42.330

**** Significant at the 0.01 level (p<0.01); ** Significant at the 0.05 level (p<0.05); * Significant at the 0.1 level (p<0.1)*

6. CONCLUSION

This study analyzed to find the impact of working capital management on firm's profitability and firm's value of listed companies during the period of 2012/2013 to 2016/2017. Working capital management plays an important role in the organizational operations and it is required to efficient management. Working capital management considers working capital management components such as account receivable, inventory, and account receivable and policies such as working capital investment policy and working capital financing policy. It is important to maintain working capital at the appropriate level however this level can be changed different types of sectors. Shortage of working capital leads to lack of liquidity which affects production and sales or excessive balance of working capital leads to loss of investment opportunities in future.

Most of the literature review suggests that there is negative relationship between working capital management on firm's profitability [48]. Results indicate that there is a negative relationship between cash conversion cycle and profit measurements of listed companies which supports the previous literature by [33,34,13, 46].

The findings say that there is a negative relationship between aggressiveness of working capital investment policies and working capital financing policies with firm's profitability measurements which is supported by [23] and [49]. Furthermore, it reveals that if the listed companies follow aggressive working capital investment or financing policies, then it leads to increase in profitability which indicates that total current assets to total assets decreases, there is an increase in aggressive working capital investment or financing policies which leads to higher profitability [23].

According to the panel data regression analysis, 15.3% of variation in gross operating profit and 35.9% of variation in return on asset are explained by cash conversion cycle of the listed companies. There is a significant negative relationship between cash conversion cycle and gross operating profit by negative coefficient of 0.001 at significant level of 0.01 (p-value 0.000 < 0.01). It indicates that an increase in the number of days of cash conversion cycle by a day has decreased the firm's gross operating profit by 0.01%. There is a significant negative relationship between cash conversion cycle and return on assets by negative coefficient of 0.001 at significant level of 0.01 (p-value 0.000 < 0.01). It indicates that an increase in the number of days of cash conversion cycle by a day has decreased the firms' return on assets by 0.01%. The result is consistent with pervious literatures such as [45] and [44] which means firm's profitability can be achieved decreasing cash conversion cycle days.

In the working capital policies, there is a negative relationship between working capital investment policies and financing policies and firm's profitability measurement. The result is consistent with pervious literatures such as [46, [50,51,52].

7. RECOMMENDATIONS

The research suggests recommendations such as the study period cannot be limited to five years of period but this study should be studied by extended the study period to obtain the full detailed findings. The profitability measurements include Gross Operating Profit and Return on Assets which can be categorized as accounting profitability measures. Furthermore, future quantitative researches about working capital management on firm's profitability should be examined in different economic cycles and this quantitative research should consider whether short-term borrowing can be included in cash conversion cycle, since short-term borrowing is an important concept which gives additional insight about working capital management. Future researchers can also consider the macroeconomics factors such as GDP to determine influence of working capital management on firm's profitability in Sri Lanka.

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Ng H, Chen Y, San Ong T, Teh BH. The impact of working capital management on firm's profitability: Evidence from Malaysian listed manufacturing firms. International Journal of Economics and Financial Issues. 2017;7(3):662.
2. Charitou MS, Elfani M, Lois P. The effect of working capital management on firms profitability: Empirical evidence from an emerging market. Journal of Business & Economics Research (JBER). 2010;8(12).
3. Hillergren M, Björkman H. The effects of working capital management on firm profitability: A study examining the impacts of different company characteristics; 2014.
4. Makori DM, Jagongo A. Working capital management and firm profitability: Empirical evidence from manufacturing and construction firms listed on Nairobi securities exchange, Kenya. International journal of accounting and taxation. 2013; 1(1):1-4.
5. Kaur J. Working capital management in Indian tyre industry. International Research Journal of Finance and Economics. 2010; 46(1):7-15.
6. Van Horne JC, Wachowicz JM. Fundamentals of financial management; 2008.
7. Azeema AS, Jahfer A. Working capital management and corporate performance of listed manufacturing companies in Sri Lanka; 2015.
8. Singhania M, Mehta P. Working capital management and firms' profitability: Evidence from emerging Asian countries. South Asian Journal of Business Studies; 2017.
9. Nimalathasan B. Profitability of listed pharmaceutical companies in Bangladesh: An Inter & Intra Comparison of Ambee & IBN Sina Companies. Universitatii Bucuresti. Analele. Seria Stiinte Economice si Administrative. 2009;3:139.
10. Weston JF, Brigham EF. Managerial Finance, Illinois: Dryden Press:150; 1978.
11. Sivathaasan N, Tharanika R, Sinthuja M, Hanitha V. Factors determining profitability: A study of selected manufacturing companies listed on Colombo Stock Exchange in Sri Lanka. European Journal of Business and management. 2013; 5(27):99-107.
12. Knauer T, Wöhrmann A. Working capital management and firm profitability. Journal of Management Control. 2013;24(1):77-87.
13. Eljelly AM. Liquidity-profitability tradeoff: an empirical investigation in an emerging market. International Journal of Commerce and Management. 2004;14(2): 48-62.
14. Anandasayanan S. Working capital management and corporate profitability: Evidence from Panel data analysis of selected quoted companies in Sri Lanka; 2014.
    Available at SSRN 2385940
15. Morawakage PS, Lakshan AM. Determinants of profitability underlining the working capital management and cost structure of Sri Lankan companies. In Proceedings of the 1st International Conference on Business and Information. University of Kelaniya. 2010;1-23.
16. Perera W, Wickremasinghe GB. Working capital management practices of manufacturing sector companies in Sri Lanka: Survey evidence. Investment management and financial innovations. 2010;7(4):34-8.
17. Bei Z, Wijewardana WP. Financial leverage, firm growth and financial strength in the listed companies in Sri Lanka.

Procedia-Social and Behavioral Sciences. 2012;40:709-15.
18. Richards VD, Laughlin EJ. A cash conversion cycle approach to liquidity analysis. Financial management. 1980;32-8.
19. Finnerty JE. Planning cash flow. American Management Association; 1993.
20. Kamath, R. How useful are common liquidity measures. Journal of Cash Management.1989;9(1):24-28.
21. Gitman LJ. Estimating corporate liquidity requirements: a simplified approach. Financial Review. 1974;9(1):79-88.
22. Jose ML, Lancaster C, Stevens JL. Corporate returns and cash conversion cycles. Journal of Economics and finance. 1996;20(1):33.
23. Sim, L. S. K. The effect of working capital management on profitability: evidence from Malaysia/Linda Sim Siew Kian (Doctoral dissertation, University of Malaya); 2013.
24. Sartoris W, Hill N. Cash and working capital management. Journal of Finance. 1983;38(2):349-60.
25. Lantz B. Operativ verksamhetsstyrning. Studentlitteratur; 2003.
26. Hillier D, Ross S, Westerfield R, Jaffe J, Jordan B. Corporate finance. McGraw Hill; 2013.
27. Baveld MB. Impact of working capital management on the profitability of public Listed firms in the Netherlands during the financial crisis (Master's thesis, University of Twente); 2012.
28. Hampton JJ, Wagner CL. Working capital management. Wiley; 1989.
29. Arnold G. Corporate financial management. Pearson Education; 2008.
30. Sharma AK, Kumar S. Effect of working capital management on firm profitability: Empirical evidence from India. Global business review. 2011;12(1):159-73.
31. Fabozzi FJ, Peterson PP. Financial management and analysis. John Wiley & Sons; 2003.
32. Bertone'che, M. knight, R. Financial performance; 2001.
33. Deloof M. Does working capital management affect profitability of Belgian firms?. Journal of business finance & Accounting. 2003;30(3-4):573-88.
34. Shin HH, Soenen L. Efficiency of working capital management and corporate profitability. Financial practice and education. 1998;8:37-45.
35. Gill A, Biger N, Mathur N. The relationship between working capital management and profitability: Evidence from the United States. Business and Economics Journal. 2010;10(1):1-9.
36. Carpenter MD, Johnson KH. The association between working capital policy and operating risk. Financial Review. 1983; 18(3):106.
37. Pandey IM, Gupta JP, Perera KL. Working capital management: Policies and practices in Sri Lanka. Journal of Euro-Asian Management. 1997;3(1):74-97.
38. Jayarathne TA. Impact of working capital management on profitability: Evidence from listed companies in Sri Lanka. InProceedings of the 3rd International Conference on Management and Economics. 2014;26:27.
39. Azeema ASF, Jahfer A. Working capital management and corporate performance of listed manufacturing companies in Sri Lanka; 2015.
40. GRM G, Yogendrarajah R. The impact of capital intensity & tangibility on firms financial performance: A study of sri lankan banking & insurance companies listed in colombo stock exchange. ACADEMICIA: An International Multidisciplinary Research Journal. 2013;3(1).
41. Bless C, Higson-Smith C, Kagee A. Fundamentals of social research methods: An African perspective. Juta and Company Ltd; 2006.
42. Baltagi, B. Econometric analysis of panel data. John Wiley & Sons; 2008.
43. Hsiao C, Mountain DC, Illman KH. A Bayesian integration of end-use metering and conditional-demand analysis. Journal of Business & Economic Statistics. 1995; 13(3):315-26.
44. Falope OI, Ajilore OT. Working capital management and corporate profitability: Evidence from panel data analysis of selected quoted companies in Nigeria. Research Journal of Business Management. 2009;3(3):73-84.
45. Lazaridis I, Tryfonidis D. Relationship between working capital management and profitability of listed companies in the Athens stock exchange. Journal of Financial Management and Analysis. 2006; 19(1).
46. Raheman A, Nasr M. Working capital management and profitability–case of Pakistani firms. International Review of

Business Research Papers. 2007; 3(1):279-300.
47. García-Teruel PJ, Martinez-Solano P. Determinants of trade credit: A comparative study of European SMEs. International Small Business Journal. 2010;28(3):215-33.
48. Lai L. The Impact of working capital management on firm value :Evidence from airline industry; 2012. Available:http://arno.uvt.nl/show.cgi?fid=129533
49. Nazir MS, Afza T. Impact of aggressive working capital management policy on firms' profitability. IUP Journal of Applied Finance. 2009;15(8):19.
50. Thakur OA, Muktadir-Al-Mukit D. Working capital financing policy and profitability: Empirical study on Bangladeshi listed firms. Journal of Economics, Management and Trade. 2017;1-6.
51. Afza T, Nazir MS. Is it better to be aggressive or conservative in managing working capital. Journal of Quality and Technology Management. 2007;3(2):11-21.
52. Afrifa GA, Tauringana V, Tingbani I. Working capital management and performance of listed SMEs. Journal of Small Business & Entrepreneurship. 2014; 27(6):557-78.

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sdiarticle4.com/review-history/63242