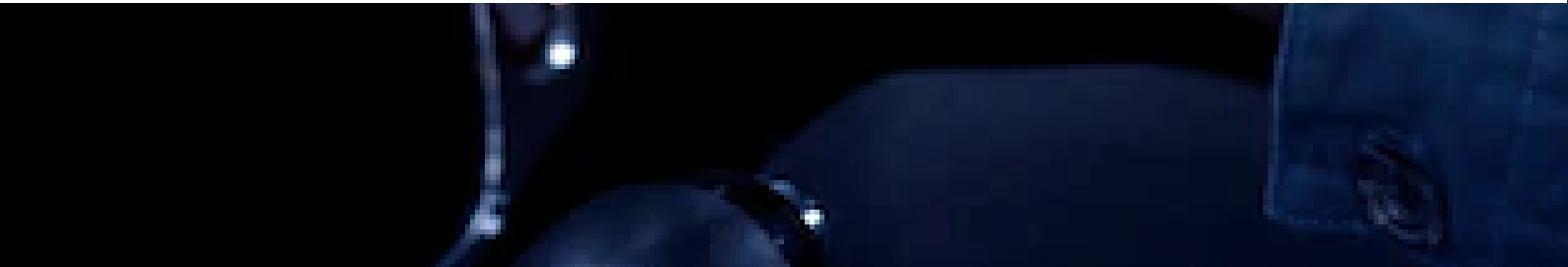
RESEARCH BASED APPROACH TO WORKING

CAPITAL MANAGEMENT - AUTOMOBILE SECTOR

Dr. Avani H. Raval

Dr. Ashvin R. Dave



Research Based Approach to Working Capital Management - Automobile Sector

EMPYREAL
PUBLISHING HOUSE

India | UAE | Nigeria | Uzbekistan | Montenegro
www.empyrealpublishinghouse.com

Research Based Approach to Working Capital Management - Automobile Sector

By:

Dr. Avani H. Raval
Assistant Professor, Finance at Insititution of Advance Research the University of Inovation, Gandhinagar, Gujarat, India

Dr. Ashvin R. Dave
Professor, Finance and Member Academic Council at Pandit Deendayal Energy University (NAAC A++ Ranking), Gandhinagar, Gujarat, India

First Impression: January 2023

Research Based Approach to Working Capital Management - Automobile Sector

ISBN: 978-93-93810-18-2

Rs. 650/- ($18)

Published by:
Empyreal Publishing House

PREFACE

Working capital is an inherent and important part of financial management. Management of working capital involves two aspects viz. Deployment of resources involving creation of current assets such as inventory, debtors, cash, bank, marketable securities and mobilization of resources involving creation of current liabilities creditors, short term bank loans and other provisions. Each of these aspects call for cost incurrence besides having the potential to generate revenue for the enterprise.

The word automobile sector includes passenger cars, commercial vehicles, two wheelers, three wheelers and four wheelers. The history of automobile dates back to 1885 when Karl Benz first built an automobile with petrol engine in Germany. Since then industry has witnessed developments on multiple dimensions be it engine technology, be it engine variants, interiors, exteriors, electricals, electronics, use of artificial intelligence, product market segment and spread across the national boundaries. At present automobile market is characterised by multiple fuel engines with high efficiency, convenient and comfort features, product aesthetics, fierce competition and greater preference to consumer needs. Even the government regulations play increasingly important role in this market. India has produced more than 30 million units of automobile in last year and in the same year India exported automobile worth Rs. 231000 crores. The performance of India in this sector is preceded by few developed countries such as USA, Japan, China and Germany. At present automobile sector contributes 7.1% of GDP and the government of India aims it to increase to 12 %. It provides employment to 37 million people at present and expected to reach 50 million marks by 2030.

The objectives of the study are (1) To understand working capital management practices in automobile sector. (2) To examine the relationship between working capital management and profitability of the automobile sector. (3) To assess the impact of working capital parameters on profitability of automobile sector.

We have considered the following variables: Net profit to sales ratio is treated as dependent variable and the remaining variables viz. Inventory Turnover Ratio, Debtors Turnover Ratio, Sales Growth Rate, Cash & Bank and Marketable Security to Turnover Ratio, Creditors Turnover Ratio, Fixed Assets Turnover Ratio, Long Term Debt Equity Ratio and Current Ratio are treated as independent variables. In this study first the research has been carried out using secondary data. Then a questionnaire based survey was carried out to map the perception of decision makers and find out whether their perception was in line with empirical results or not. For the secondary data exploratory research design was adopted. For primary data cross sectional convenient sampling design was adopted. For getting the respondents convenience and snowball technique was adopted. Structured questionnaire was successfully administered with 395 respondents. These were the company personnel at various levels involved in decision making for working capital management. We have examined for a period of ten years ending on 31st March 2019 with a view to neutralize cyclical effects of the economy and develop better understanding of the behaviour of the said variables. For this research study the companies were extracted from reputed databases viz. Capitaline and Prowess for greater reliability of data. From this the companies for which complete data for the entire time frame of ten years each of 12 months was not available were removed in order to avoid statistical inaccuracies in the data analysis. The study revealed that Cash, Bank, Marketable securities, Sales and Creditors are the important variables to be paid greater attention for optimizing the profitability of the enterprise. It was found that variables like inventory turnover ratio, debtors turnover ratio, sales growth rate, fixed assets turnover ratio, long term debt equity ratio and current ratio did not matter much in terms of influencing the profitability. The primary survey was carried out to map the perception of decision makers in the industry. The primary survey revealed that the decision makers feel that all the variables including cash, bank and marketable securities & creditors turnover ratio influence profitability.

The research has implications both for the corporates and the society at large. The corporates can improve upon their management control system and performance

appraisal parameters finally lending to better profitability. Better utilisation of available resources will also help them spare funds for their corporate social responsibilities.

The said research findings may as well help other sectors of the society such as government department, municipal corporations and non – government organisations to optimally utilise their resources and thus contribute towards social upliftment.

ACKNOWLEDGEMENT

Achievement or accomplishment of a task always depends on the commitment of an individual, and the help and support of others complementing it. A comprehensive book on Research Based Approach to Working Capital Management - Automobile Sector cannot be written without the guidance of experts in the field. We gratefully acknowledge their help which was of immense use.

Our whole hearted and deepest thanks go to our parents and family members, who have given us everything and from whom we have learned the value of life, the meaning of hard work and perseverance.

We also take this opportunity to the known and unknown friends and researchers who contributed one or the other way in this endeavor. Last but not the least without the blessings of the god almighty this attempt would not have seen the light of the day. We sincerely acknowledge everyone mentioned above for their immeasurable contribution for our efforts.

Dr. Avani H. Raval

Dr. Ashvin R. Dave

Table of Contents

 ISBN: 978-93-93810-18-2

Chapter – 1

Introduction

1.1.0 WORKING CAPITAL MANAGEMENT

1.1.1 Introduction

Whenever a company invests in current assets, it is considered as working capital in the traditional sense. Each and every manufacturing firm is influenced by working capital management decision as it has an impact on the liquidity of the firm. Working Capital Management is a very significant part for managing day to day expenses. Working Capital Management is practice that sustains current assets and current liabilities. It is an instrument of finance. Working Capital Management provides a solid foundation for any successful business. Just like long term investment decisions, there has to be a proper monitoring of the advantages and disadvantages with respect to each component of current assets when taking working capital decisions. Cash flow plays a vital role in working capital decisions and long term investment decision. The main point of difference between long term decisions and working capital decisions is the time line of the decision-making process. Working capital decisions in the normal scenario has an impact on the cash flows of the firm for a short time period that is maximum one year. On the other hand, the long term financial decisions affect cash flows for a longer period which can extend up to twenty years or more. Fundamentally working capital management is subset of financial management. Working Capital Management is the short duration finance of the company which is associated with liquidity and profitability and helps to improve the stakeholder's wealth. It has various parameters like cash, stock, bills payables, bills receivables, creditors, debtors, bank overdraft etc. which impact its management.

1.1.2 Definition

J.S.Mill, defines: "The sum of the current asset is the Working Capital of a business".

Weston and Brigham, defines: "Working Capital refers to a Firm's investment in short-term assets, cash, short-term securities, accounts receivables and inventories".

Bonneville, defines: "Any acquisition of funds which increases the current assets, increase working capital also for they are one and the same".

Shubin, defines: "Working Capital is the amount of funds necessary to cover the cost of operating the enterprises".

Genestenberg, defines: "Circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another, for example, from cash to inventories, inventories to receivables, receivables to cash".

(C. Paramasivan, T. Subramanian, 2018)

1.1.3 Concept

Gross working capital and net working capital are the two types of working capital.

- **Gross Working Capital :-**

The term "gross working capital" refers to the investment in present assets made by a corporation. Within an accounting year, current assets such as shares, cash, debtors, bills receivable, and short term securities are turned into cash. The total of all current assets is frequently used to define gross working capital. It is critical that investments in current assets be

balanced. Gross working capital however important, should not rise to a level where a huge percentage is invested in inventory. This is because there is an inherent risk of the inventory turning useless especially in those sectors where the rate of wastages is high.

- **Net Working Capital :-**

Net working capital is calculated as the difference between current assets and current liabilities. Net working capital is calculated using the formula:

Net Working Capital = Current Assets – Current Liabilities.

Current liabilities, such as creditors, bills payable, and unpaid costs, are external claims that are scheduled to mature for payment during an accounting year. There are two sides to net working capital: positive and negative. Net working capital is positive when current assets exceed current liabilities. There is a negative net working capital when current commitments exceed current assets.

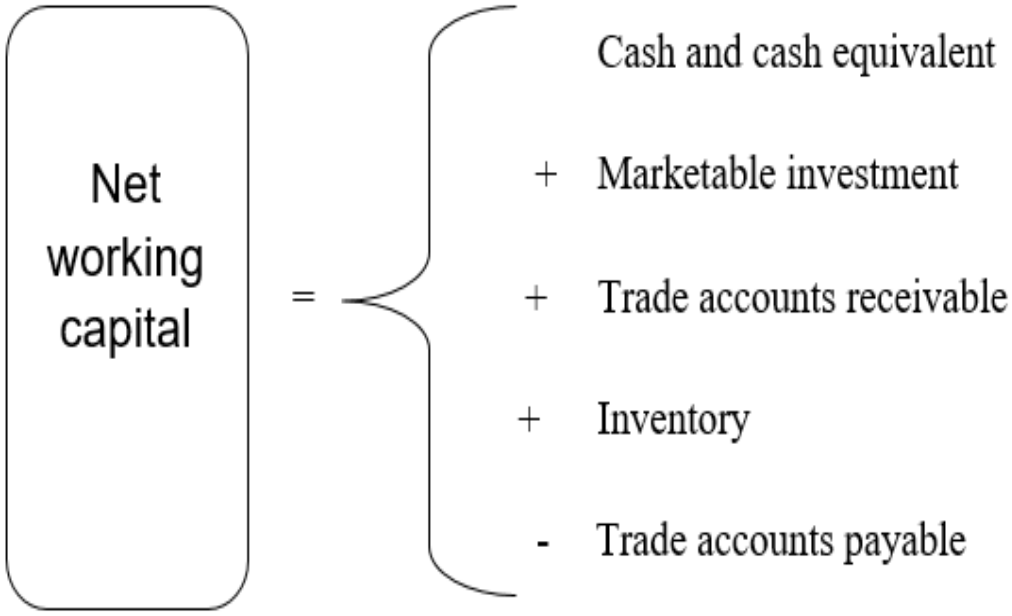


Figure 1.1 Net Working Capital

Gross working capital and net working capital are two diversion methods of defining working capital but both have an equal standing in managing working capital as both are interrelated.

1.1.4 Types

1. Permanent Working Capital Management :-

In order for a business to function efficiently, a percentage of the working capital has to be invested in the industry which is called permanent working capital. Permanent working capital contains sundry current assets for manufacturing process. Permanent working capital, often known as fixed working capital, is defined as a specified proportion of current assets. This is the bare minimum investment that must be made in the firm regardless of fluctuations in commercial activity.

- **Initial Working Capital Management :-**

While starting up the business, company requires some working capital for acquiring cash, stock etc. This is the minimum amount of money that is required to set the business in motion failing to which the business would be unable to initialize and gain momentum.

- **Regular Working Capital Management :-**

In order for a business to function smoothly a minimum level of raw material and inventory is required. As per traditional practices, investment informing credit sales is preferred on prior basis to keep sales invested under the head of debtors. The capital required for the above activity is known as the regular working capital. It is permanent in nature for the duration of the business and its level remains same for most scenarios except for cases where the capacity of business expands or reduces.

2. Flexible working capital / fluctuating :-

Whenever there is a change in the sales forecast and production schedule, the working capital requirement also changes in accordance with the revised schedule. For this purpose, additional working capital is required which is called flexible working capital management.

- **Seasonal working capital :-**

In case of seasonal businesses like kites, raincoat, woollen clothes etc. where the demand is only for a short duration the requirement for working capital is limited. In such cases, the working capital required is also seasonal in nature which is also known seasonal working capital. During the season, the firm's management must have the appropriate quantity of working capital on hand.

- **Special working capital :-**

Firms also undertake special projects from time to time. For such projects additional working capital required which is called as special working capital. Sometimes special working capital is required at the time of strike, fire, flood, earthquake etc. Any business organization which undertakes such special projects need sufficient working capital to fulfil their day-to-day operation. Also, in certain situation there can be a temporary rise in demand which would in turn requires an uptake of additional working capital.

1.1.5 Characteristics

1. Permanent Requirement:-

Working capital is needed consistently and continuously until the business form is active. The basic objective of working capital is procuring debtors, creditors, wages and other sundry short term expenses.

2. Fluctuating :-

For seasonal business working capital usually keeps fluctuating. It is also called temporary working capital. There may be many reasons of such trend in working capital such as change in sales, change in purchase units, change in purchasing policy, change in price, various techniques of advertisement etc. In comparison to fixed capital, working capital faces more fluctuations.

3. Short Term Capital :-

Working capital generally lasts until the current assets are transformed in to cash. Working capital is built up with the objective of acquiring current assets. The term of working capital is always short. Generally, it is from 1 to 18 months which is comparatively shorter than the period of fixed capital. Therefore, working capital can also be called as short term capital.

4. Circulating :-

Raw materials are purchased and converted in to finished goods. Once the finished goods are sold the entire cycle restarts from purchasing raw materials to producing finished goods and this process continues in perpetuity. Thus it is the circulating process which continues in day to day activities for any business.

5. Cash Liquidity :-

Current assets get transformed into cash liquidity post manufacturing and sales process. If cash liquidity is high the prestige of business is more and it is good for safety purpose of creditor. For this purpose, financial manager converts working capital into quick saleable investments.

6. Physical Risk :-

There are few physical risks in working capital management like fire, accident, theft etc. in working capital management. This risk can be recovered with the help of insurance coverage.

7. No Depreciations :-

There is no depreciation calculated on working capital management as this working capital is invested in current assets which are sooner or later converted into cash.

8. Different Requirement :-

Working capital requirement depends upon size and nature of business. For example, car industry requires more working capital while public utility service and business requires less working capital management.

9. Specific Sources :-

Following are the sources of working capital “stock, bill receivable, debtors, cash, bank, bank overdraft, creditors and bills payables etc.”

10.Specific Accounting Method :-

Each current asset requires an individual statement like inventory statement, suppliers, customers etc. are part of the specific accounting method in the working capital management. Its intakes bulk accounting treatments.

1.1.6 Operating Cycle and its Relevance for working capital management

The operating cycle is the total average period of time taken by a business to complete one cycle of operation that includes procurement of inputs transformation of inputs into output and distribution of output. The operation cycle is calculated keeping in mind the following three constituents.

1 Inventory Conversion Period

2 Receivables/ Debtors Conversion Period

3 Payables/ Creditors Conversion Period

1 Inventory Conversion Period :-

The inventory conversion period encompasses the whole time span from the acquisition of raw materials through the conversion of finished items.

2 Receivables/ Debtors Conversion Period :-

It refers to the time it takes to convert credit sales into cash. The credit period is determined by the time period granted to clients and the firm's collection attempts. It is also known as debtors conversion period or Book debts conversion period.

3 Payables/ Creditors Conversion Period:-

It refers to the duration periods for which the corporation can postpone payments or the typical amount of time it takes to pay its debtors.

1.1.7 Factors Influencing Working Capital Composition

1 Nature Of Business:-

In their production process, capital goods manufacturing enterprises require a significant share of current assets in the form of inventory and working capital. Trading firms, on the other hand, required more completed stock and account receivables. The sort of business determines the quantity of working capital necessary. There are two different kinds of businesses: manufacturing businesses and trade businesses.

2 Nature Of Raw Material Used:-

The quantity of raw materials required in the production process determines the investment to be made in the inventory procurement. For example, if the company requires raw material that is seasonal in nature then it will required huge investment in order to sustain and maintain its operating cycle.

3 Process Technology Used:-

The work in process stock is high in industries where multi techno process is needed.

4 Nature Of Finished Goods:-

In case of seasonal industries, the finished goods requirement is high during sales seasons.

5 Degree of Competition in The Market:-

In order to remain in the competitive market companies give credit to the customers which leads to an increase credit sales. Increase in credit sales demand leads to maintenance of higher level of finished goods stock and debtors.

6 Paying Habits of the Customers:-

Some customers tend to pay late and buy more which leads to increase in inventory and debtors requirement.

7 Degree of Synchronization Among Cash Inflows and Cash Outflows:-

For the free flow of working capital, the company needs to maintain synchronization between cash inflow and outflow.

8 Easy Availability of Working Capital:-

The quantity of current asset investment is influenced by the availability of working cash. If the firm has easy access to operating money, investing in current assets is not an issue. The ready availability of money aids in the preservation of working capital.

9 Management of the Firm:-

It relates to the company's organisational strategy for current assets and working capital.

1.1.8 Components

1 Inventory Management

A. **Introduction**

Inventory management describes raw material management along with miscellaneous. It includes in depth description of inventory such as how, how much from where, what to purchase as well as its utility and storage. Inventory management includes planning for purchase of raw material along with its handling, storage and recording. Inventory holds the major part among various current assets as far as it is concerned with business. An inventory indeed plays a very crucial role for effortless functioning of business activities.

B. **Meaning**

Inventory can be defined differently with various points of views. In general terms, inventory means “stock of goods or list of goods.” In term of accountancy, inventory is stock of finished goods. From manufacturers view point inventory is summed up as “raw material, work in progress, store etc.”

C. **Type**

There are various kinds of inventory which are described below:

1. Raw materials consist of significant place while considering inventory. Raw material means goods which are not employed in production process of business unit.
2. Work in process describes material which is employed in manufacturing process.
3. Consumables are those materials which make the manufacturing process smooth.
4. Finished goods are those goods which are ready to be consumed by consumers. These are the final results of any manufacturing process.
5. Spares are the certain small spare parts also considered as a part of inventories.

D. **Objectives**

Inventory consumes the range of about 30 to 80% of overall current assets of a business unit. It plays major roles in various fields such as financial management, production management and

also different aria associated with it. Working capital decision taken with concern to inventory affects financial as well as production functions significantly. Therefore managing all inventories significantly and efficiently is considered as major concern in manufacturing process.

In the framework of inventory management, the company has been challenged to fulfil two opposing needs: keeping substantial inventories of raw materials and work-in-process for effective and convenient manufacturing, and of finished items for continuous sales activities; and maintaining a least inventory costs to maximise profitability. Excessive and insufficient inventory are both undesirable. These are two risk areas that the company should avoid. Inventory management should strive to determine and maintain the appropriate inventory investment. The ideal level of inventory will be midway between the two trouble spots of overstocking and understocking.

E. **Importance**

In an enterprise, effective control over inventory plays an important part in the success of any firm. Generally, a manufacturing unit holds 20 to 30 % of inventory from its total assets. A systematic inventory management will lead to profitability which is crucially high in a business enterprise. The nature of a firm plays significant role in deciding the direction of inventory classification and its control. For instance, in a spinning mill, the raw material and the finished good are cotton and yard, whereas, textile mill utilizes yard as raw material and generates fabric as a finished good. Also while considering a manufacturing unit - It consists of raw material, yard and finished good as inventory. But, the downstream supply chain management holds only finished good in form inventory. The production manager as well as financial manger holds a crucial role in inventory management. Therefore, it is vital for them to understand the inventory categorization, inventory cost, and products included.

F. **Impact of Inflation on Inventory Holding**

Inflation means rapid price rise. In times of inflation, huge inventories holding can affect carrying cost of inventory along with interest carried over on blocked funds. Antiquation degrading quality, limited life of a material, cheaper substitutes, competition, deflation etc. are some risks associated with high inventory holding. Inventory management should avoid hypothesizing and should focus on investing the blocked inventory for expansion towards diversified profit generation source. A standard amount of inventory should be predecided for efficient investment and also to avoid stock out. Along with inflation there are many other factors affecting the quantum of inventory.

G. **Inventory Management Techniques**

The firm is supposed to manage the optimum level of inventory in order to achieve firm objective in congruence with the shareholder. The firm manages inventory in accordance with wealth maximization principle. It is believed that in order to make the firm flexible, inventory should be control efficient. However, inefficient inventory may lead towards in flexibility, short run of the stock and the stock may also be piled up unnecessarily due to low sales. This imbalance may disrupt profit generation along with high investment.

- **Economic Order Quantity (EOQ)**

A firm comes across several issues while handling inventory management. One of the major issues which is necessary to be solved effectively is replenishing of inventory. Respective significant decisions are to be taken on the basis of managerial activity such as buying of raw material or production run. Order quantity problems are those issues which management faces on this stage. At last the firms' objectives are to define the economic order quantity. At the stage of determining EOQ, the firm faces cost such as ordering cost and carrying cost. EOQ lead to minimize the total expense (ordering cost + carrying cost).

Ordering Costs - Ordering cost is such costs which are incurred while acquiring raw material. It includes the expenses occurred while assembling of order, transportation, summoning, collecting, inspecting and store placement.

Carrying Costs – To sustain the prescribed level of stock, the cost incurred is known as carrying cost. This cost may occur in the firm of taxes, obsolescence, insurance, warehouse and stagnation.

- **Reorder Point**

The reorder point is that respective stage in which the management takes the decision to replenish the stock. Lead time, EOQ, average usage are the three aspects which should be determined significantly in order to know the reorder point. The lead time is that period which undergoes in replenishing of stock once the order is in place. In certain time, the usage of stock and its lead time remain stable. Here, the inventory level is maintained in accordance with consumption. The reorder point can be determined with the product of lead and average usage.

2 Receivables management

A. Introduction

In market, it is observed many times, that a good is passed through various stages starting from production to customers including various mediators in this stream of trade. Trade credit is defined as credit sales of a goods or services. Here, term credit signifies that there is no instant cash receipt. A credit period assigned to debtors for such settlement. A form practicing such credit trades with various reasons such as to beat competitors to increase sales and to make market storm by calling efficient customers for purchase favourably. Traders maintain a record of book debts consisting of essential details of trade debtors. Trade debtors are defined as those customers who will pay their debts in near future. Such debtors are also claimed as assets of firm.

The magnitude of account receivables has its impact upon top as well as bottom line. This account receivable includes a lump sum amount as a credit, which signifies management of account receivables. Credit policy plays a vital role in management of receivables. Applying indulgence in implementation of credit policy as well as receivables policy leads towards sales increment which results in hike of top line. Adversely, it affects collection cost along with increased bed debts. While making changes among credit policy of a business firm, the foremost question arises that the changes made will benefit the business or not. The significant factor most commonly observed while making policy changes is the relationship between the variables

of credit policy and its influence upon shareholders' wealth. The second most significant matter is collection of debts and its management.

B. Meaning of Account Receivable

Account receivable is also known as receivables. Receivables hold of around 20% to 25% considerable proportion among investment and generates a huge profit. Therefore, its management holds a vital place. Receivables are such current assets which includes the money value of unpaid consumers/ customers' invoices.

C. Feature of Credit Sales

1. There exists a risk element which needs to be analysed diligently, in contrast to the credit sales in which cash receipt are remaining. There are cash sales which are completely riskless.
2. It depends upon economic value which can get fluctuated in prescribed credit period. When the buyer purchases of goods or services, economic value get transferred immediately. But the seller bears the risk of getting same economic value after the completion of credit period.
3. Cash payment for good or services purchased by buyers is done in future after completing the credit period.

In a firm, debtors possess a significant proportion in current assets. Current assets constitutes trade debtors, inventories etc. in India. It concurs almost one third proportion in current by granting credit to debtors which leads to blocking a particular sum of firm's funds to fulfil the needs of the frim in this credit period which lies between the date of sales received, firms manage a certain amount named out as working capital. This fund of working capital is used to meet a day to day expense which occurs in this credit period. To meet the working capital requirements, the firm borrows from bank or NBFCs. Therefore a trade debtor requires analytical and vigilant management. The financial manager controls this components and manages its three major variables i.e.;

1. Volume of credit sales
2. Collection period
3. Investment in account receivable.

Trade debtors consist of significant proportion in firm's investment. Credit policy has three major components:

1. Credit Standards: Credit standard helps in choosing the kind of customers for credit sales. Such standards help in ignoring such customers who lead to hike the account receivable and manifest the high risk of default.
2. Credit Terms: A Credit term is a composition of two variables in it. Those are duration of credit and payment policy. Account receivable will have higher investment with customers consisting longer time period for repayments.
3. Collection Efforts: Investment in account receivables depends directly lower collection period will lead less investment in account receivables. Similarly, higher collection period

will lead more investment in account receivable. This actual period is governed by collection efforts.

D. Objectives of Credit Policy

- The key objective of credit policy in the enterprise is sales growth with maximum profit which will lead in enlarging the shareholders wealth. Higher the sales higher will be the operating profit including additional investment and cost.
- A credit policy can be determined in two ways i.e., lenient and stringent credit policy. Lenient credit policy allows sellers sell on liberal credit terms and standards. Such terms and conditions permit customers to hold or extend credit period for a long time. This credit policy has a limitation of customers whose financial position is unknown and who are not trustworthy. Stringent credit policy permits to provide credit to only those customers having financial soundness with prescribed and proven credit worthiness. Generally, firm practices credit policies aligned in between stringent and lenient credit policies.

E. Importance of Account Receivables

- The management gives a high degree of importance to account receivables as it forms a major chunk of assets. Also, the accounts receivables show the amount owed by debtors, the due date and any inherent subjective countdowns. This also helps in proper processing of all dues at the correct time without unnecessary hassle.
- Accounts receivable include "number of customers' length to each customer etc." credit sales are opted for two major reasons:-

(i) Sales growth

(ii) Competition

- As transfer of proportional value is legal obligation for purchaser as well as seller, it is disclosed as current liabilities for purchaser and current assets for seller in their book of accounts.
- Credit facilities are generally offered to raise sales among customers as it leads towards return on capital employed.
- Credit sales and receivables are generated by the market in which the firm is doing business actively.
- These credit receivables are categorised among operating line and are due between few days up to a year. Many companies practice indirect credit facility by making sales on credit. This practice is termed as revolving credit facility as practiced among daily customers.
- The key factors of management of receivables are,

i. Credit policy

ii. Credit analysis

iii. Credit control

iv. Management of investment in debtors balance

v. Increase in efficiency of short term funds management.

Liberal credit policy leads a hike in sales and profit simultaneously. Also, "high investment invisibles, risk of bed debt, cost of administration of receivables problems of liquidity, etc." are their related factor which affects credit policies. Policies help in cost minimization, risk minimization and profit maximization of account receivables of a firm.

F. Factors Affecting the Size of Receivables

I. **Sales Level:** Sales level significantly determines the size of receivables. A firm can gain from sales more, with broadened credit policy and related terms and conditions and will also expand the size of receivables.

II. **Credit Policy:** Credit policies consist of credit criteria and analysis, which are different from one company to the next also goods to goods of same industry. Liberal credit policy expands sales volume as well as size of receivables with policy which minimizes the size of receivables.

III. **Credit Terms:** The size of the receivables has a considerable influence on the credit duration.

IV. **Credit Period:** Credit period is also known as net days which can be defined as the time period of trade credit allotted to customer, if sales on credit is processed.

V. **Cash Discount:** A cash discount is an incentive given to credit customers for making on-time payments. Such cases also include special discount.

VI. **Management of Receivables:** A company can reduce the size of its receivables by managing them effectively and efficiently. This factor has significant impact upon receivables' size in a firm.

G. Impact of Credit Policy

Any kind of modification leads "The sales, investment level, bed debt losses, collection cost" towards a drastic change proposed alteration in credit policy has positive as well as negative server impact on above mentioned variables, thus modification should be carried forward with unfeigned observation.

(i) Sales:

Extension in credit period has positive impact on sales increment as a customer gets attracted towards the flexibility proposed by seller for selling his goods on credit. For firms practising streak credit policy or those who are stern for cash experiences least sales. Buyers prefer manufacture with flexible credit policy and credit worthiness, and these creditors only can extend the sale of firm at maximum. These are the two end points of any credit policy.

(ii) Investment Level:

More investment and expansion in production capacity is required for more sales in liberal credit policy. On other side this expansion leads funds blockage in inventory as well as receivables.

(iii) Bad Debt Losses:

This phenomenon occurs only in credit sales. The customers who are supposed to pay the credit period, fails to fulfil the transaction and are declared as bad debt. This loss includes the cost of manufacturing goods plus the profit on sale.

(iv) Collection Cost:

Liberal credit policies maximize account receivable. The costs of book keeping and invoicing, cost of collection are increased due to this liberalization in credit policy. The staffs need to supervise the receivable accounts for longer period and for more customers.

3 Cash Management

A. Introduction

Current cash is the most significant current asset and is mandatory for working capital cycle of the business which includes paying for obtaining resources as well as services for business activity; getting the finished product or services from raw material and making profit by selling the realised services or product. For efficient cash management, it is necessary for the firm to acquire optimal cash as less cash on hand will disturb the business cycle. Contrary to this, larger cash balance means less productivity due to an impact of firm's profitability. Financial manager plays a very remarkable role in maintaining firm's liquidity. In general terms, cash is defined as a combination of coins, currency, cheques, and bank balance acquired by a firm. This terminology of cash can diversely include marketable securities and bank term deposits, as such near to cash items can easily transform into cash. Thus, a firm can use cash extravagantly. Cash management includes cash inflows and outflows.

B. Objective of the Cash Holding

The cash holding's aims are as follows.

(i) Transaction Motive:

The transaction motive necessitates that a company keep cash on hand for its day-to-day operations such as paying dividends, taxes, miscellaneous expenses, buying raw material paying wages, salaries, other operating expenses etc. The primary goal of transaction motivation is to fulfil the day-to-day fluctuating cash requirements of the firm. A firm maintaining a sufficient cash buffer would help in meeting the asynchronous demand of cash. The concept of cash holding i.e. transaction motive was introduced to overcome the daily fluctuation in cash requirements of the firm. A firm will hold the cash in form of marketable securities having its maturity proportional with any anticipated payments i.e., dividend, taxes etc.

(ii) Precautionary Motive:

Precautionary motive acts as a cushion or buffer to overcome any contingencies. This includes meeting cash or near cash requirement in any case of future uncertainties such as floods, strikes etc. This motive allows firm to maintain a cash reserve for any emergency. The amount of cash reserve is fluctuating depending upon cash inflow, cash outflow and borrowing of cash for short period at quick notice. Cash borrowing is skill based activity which affects the precautionary balance significantly. This precautionary balance may also include marketable securities along

with cash. Marketable securities can allow an ideal cash reserve to earn some profit in a high liquid and low risk market. Therefore, experts recommend that precautionary balance should consist higher marketable securities compared to cash.

(iii) Speculative Motive:

Speculative motive helps in gaining profit from opportunities which are beyond the normal business routine. For instance, using reserve cash for making speculative investment or giving deep discount. The cash reserve in such speculative motive allows firms to grab such opportunities and generate indirect profit. The change in prices of securities also gives a business firm opportunity to generate profit. The firm can invest in securities when interest rate decreases. In addition to this, firms can also invest in short term marketable securities and gain an additional income by riding on the speculative wave. A firm may practice such speculations as a precaution but not compulsion.

(iv) Compensating motive:

Banks help a business in multiple ways like fund transfer, clearing of cheque etc. Firms need to keep adequate cash balance to pay the banks for the services that has been provided.

C. **Cash Management Techniques**

Cash management techniques include the managing of cash flow in such a way that it can balance cash inflow and cash outflow simultaneously by fulfilling the profit objective of the firm. The two main components of cash management are speedy cash collection and slowing disbursements.

- **Speedy Cash Collection:**

This cash management technique undergoes a systematic plan and has well- defined process techniques for speedy cash collection for customers. These methods primarily focus on motivating customers towards making quick cash payment. For this purpose, a business unit may apply some significant methods such as:

(i) **"Prompt Payment by Customers":**

This method generally focuses upon receiving a quick payment from customers with the help of discounts and occasional offers. This method keeps control upon credit balance and creditors by avoiding delays in receiving payment from customers. For this purpose a firm may adopt various techniques such as "billing devices, self-address cover with stamp etc."

(ii) **"Early Conversion of Payment Into Cash":**

General precautions should be taken by a business unit and should act carefully while processing the instant conversion of cash while making payment. "Postal float, processing float, bank float and deposit float" are methods adopted for successful conversion. (Ravi M. Kishor, 2015)

(iii) **"Concentration Banking":**

It is a technique for transferring funds from a collection of bank accounts to an investing account so that they may be used more efficiently. This process requires all the accounts to be placed in a single bank.

(iv) **"Lockbox System":**

In this approach, the consumer deposits money into a post box, and the bank retrieves it from the post office and transfers it into the firm's account. For this purpose a firm can hire a personal post box at its main collection point. Only the local bank or the firm owner is permitted to open the box and collect the amount received. These results in time saving with compared to a concentration banking system.

- **Slowing Disbursement:**

The speedy cash collection cannot give optimum result without slow disbursement of cash. This is the most significant and effective part of cash management. Delay in cash payment or avoiding the cash payment does not mean slow disbursement of cash. Following methods explain slow disbursement effectively.

(i) Avoiding Monetary Payments in Advance:

A firm should prefer paying of cash on the last day of bill clearing so that, if needed, cash can be utilised to fulfil various objectives.

(ii) Centralised Disbursement System:

Centralised disbursement system is opposites to decentralized collection system were instant cash is received. Centralised disbursement system allows a firm to collect cash slowly and making payment on time without making any delay.

D. **Profitability and Liquidity: Relationship**

Liquidity of any organization can be defined as "the ability of the organization to realize value in money, the most liquid of assets." It is any firm's capability of paying out outstanding commitment in cash. A business firm utilises its liquid assets into two dimensions. They are (1) quantitative (2) qualitative.

The quantitative dimension of liquidity consists of "(1) The quantum, (2) structure and (3) utilization of liquid assets."

The qualitative dimension of liquidity include the ability to come across the flare cash demand of present time with minimum cost and maximum profit along with the highest value of the firm. The finance manager accept the challenge of maintaining liquidity and profitability at equilibrium as of it significant objective. On the path of achieving this objective financial manager face certain major challenges such as paying due salaries and wages, paying unexpected expenses, pay off trade creditors, clear bills payable on due date etc. this shows a business is enough capable of utilizing its liquid cash in the form of cash equivalent and other liquid assets.

The ability of the firm can be known by how a firm utilise its liquid cash in paying off the due payment. Also, it reveals the firm's ability of realising the money value and making settlement of the obligation. Financial manager has to manage all the assets i.e., current as well as liquid in a way to reduce the cost to minimum and gain maximum return. The profitability concept describes the significant of resource i.e., "men, materials, money and machine" and also signifies its utilization in a firm. This signifies that the efficient use of resources would improve the profitability of the firm.

Liquidity is a crucial aliment in any business corporate. A financial manager must strike a balance between the firm's necessary liquidity and profit maximisation. The financial managers face certain challenges while managing the two contradictory objectives. There is an immerse relationship between liquidity and profit. As and when liquidity increases, the profit decreases and if the profit increases, the liquidity of the firm goes down. For this the financial manager has to manage all its current assets at lowest cost. Many a time a firm may earn profit in the firm of fixed assets or current asset other than cash. As a result, in rare situations the company may face liquidity issues such as lower rate on amount invested.

E. **Methods of Improving Liquidity Cash**

Many a times, a firm come across the situation of cash deficit. As such times no operation can be executed properly and there is no scope of improvement. In situations, there are a few methods to boost liquidity.

- **"Good Inventory Management" :-**

"Just in time inventory management" tool assures that the raw material or the inventory is supplied at the production site itself as per the requirement. This is made possible with effective planning and proper coordination with suppliers. For instance, automobile manufacture, Toyota and Suzuki (of japan) are the perfect example for this method.

- **"Rapid Stock Turnover" :-**

High stock turnover will reduce the need of cash. This can be made possible by "arranging exhibitions, sales melas, special sales week etc." which helps in boosting the sales. Textile industry must employ this technique.

- **"Negotiating with Suppliers" :-**

Credit with extended periods and high discount can help business to negotiate suppliers.

- **"Better Accounts Receivable Management" :-**

Proper account management can be done by managing sales ledger systematically. On time debt collection, prompting on regular basis and efficient strategy. A creditor should never be permitted with open account debt. A bill of exchange should be kept mandatory to be issued at the time of purchase. A discount on cash can help to obtain the amount of bill of exchange immediately.

- **"Invoice Discounting" :-**

Certain factors can help in trading the book debt on the time of arrival itself. This practice can be done on regular basis. This has certain limitations such as high cost but at the same time cash is received immediately.

- **"Disposal of Unnecessary Assets" :-**

Various assets are never used on time or are kept idle for life time. Such assets contribute in no productivity. They should be disposed or sold on scrap to get a lump sum in cash.

- **"Sale of Loss Making Division and Brand" :-**

If a particular brand or division is not making profit then it should be sold off and the cash generated should be used to improve liquidity.

- **"Conversion of Debt Into Shares" :-**

Many times companies prefer conversion of debenture, bonds, and term loans into equity and preference shares. This benefits the companies they do not have to pay any interest. The lenders should be given a proposal for such conversion as per their will.

- **"Growth Oriented Companies" :-**

On the basis of return to shareholders, the companies can be classified into two type.

(1) Dividend oriented companies:- They pay dividend to shareholders systematically.

(2) Growth oriented companies:- Such companies instead of paying dividend reserve the revenue generated. This move will benefit the shareholders as the market price of the share can increase and they can also be issued bonus shares.

- **"Dealer Deposits / Customer Deposit" :-**

A company or manufacture can ask for a deposit at order from customers as a security. These customer deposits will help manufacturers to relay upon the authorised dealers or the customers during the credit period until the actual delivery is received by customer. For suppliers' security, a customer can be asked for advance deposits. This may be possible in the case of "printing, fabrication work or in the case of automobile industry i.e., cars, two wheeler, trucks, containers, tankers."

F. **The Need for Cash Management**

The main objective behind managing cash is to invest or employ the idle cash of the firm. This transfers the ideal cash towards profit generation and increased investment. A systematic flow of cash avoids idle cash flow. Such cash management is ineffective on day to day business transaction and risk management of the business. Any business needs cash to fulfil its commitment and to meet daily expenses. A business can give cash discount as well as trade discount by keeping certain cash on hand; such discount may decrease the cost of input. Supplier gets cash discount while making cash payment and trade discount are given on mass orders. Certain crisis may arise during which a firm can overcome it with the help of liquid cash. Cash on hand can even help at the time of "strikes, fire and break-down of machinery."

Supplier gives benefit to purchaser in the form of cash discount. A firm bears certain amount of flows if supplier does not give any kind of discount. Purchaser has to bear a nominal loss if he refuses cash or trade discount.

1.2.0 AUTOMOBILE INDUSTRY

1.2.1 Automobile Meaning

Vehicle with engine that is Automobile or a transport mechanism with engine is known as automobile.

1.2.2 Technological Evolution of Automobile

Technological Development of the Automobile:

The automobile sector has always been one of the most open to new ideas. Automobile fuel consumption has already been redefined by technology, with electric, hybrid, and solar power systems will be the driving force of the future, replacing internal combustion engines and gas engines. Though, the advancement of autonomous technology and computer-based work has begun to boost user interaction while reducing the necessity to take direct control of "driving." The advancement of autonomous technology will transform the driving experience as the user acquires control of an on-board navigation system. One thing is certain: future automobiles will be autonomous and interactive, and the two developments are inextricably linked.

The Advancement of Self-Driving Technology:

The most significant technological revolution in the car industry is that of autonomy. Autonomous cars are being developed on a bigger scale by manufacturers. Most current automobiles feature self-driving capabilities, such as Autonomous Emergency Braking (AEB). AEB systems evaluate the road ahead and identify probable crashes using radar, camera, and lidar technologies. In general, these systems notify the driver that action is necessary to avert a potential accident, and if no action is taken, AEB brakes on the driver's behalf. Another recently mentioned autonomous technology on Google Car is a piece of road user interpretation software designed to interpret the general behavior of other cars on the road. The form and movement descriptions enable the car's central unit to make intelligent judgments in response to other road users' movements. The device is clever enough to detect if there are vehicles, bicycles, or motorbikes in the vicinity.

Increased User Interaction:

User involvement has expanded dramatically as computers have become increasingly significant in mass manufacture of vehicles. Today, every automobile made includes some form of computer that regulates numerous systems. Many on-board computers let you manage GPS, cruise control, car temperature, and even exhaust pollutants. These in-car technologies have increased the degree of user participation accessible to drivers worldwide. Currently, drivers may use the on-board GPS to input destinations and conduct on-board diagnostics to discover faults with vehicle subsystems. The way our cars are constructed and utilised has been distinguished by user engagement. Following the smartphone revolution, the automotive industry embraced smart dashboards, with automobiles using on-board tablets to read phone messages and play music via a radio via a single network.

Intelligent Car Technologies:

Users may enjoy the phone's functionalities without having to pick it up thanks to Apple Car Play and Google Android Auto are two examples of such technology. In effect, As a result of being able to interact with a bigger user interface, customers will spend less time staring at their phones. Nonetheless, working with the on-board computer is an annoyance from the road ahead. Is that the case? Manufacturers are integrating gesture control, a technique that allows users to operate their radios, is one of the features using hand gestures, as part of the emphasis on user involvement.

The Future is defined by Autonomy and Interactivity:

If growing user engagement and autonomous capabilities have shown anything, it is that the auto industry is still devoted to the goal of self-driving cars. As self-driving cars become more common, consumers will demand more user interaction while on the road. The less time the driver spends "driving," the more time the user will want to interact with the on-board technologies. This is why the development and advancement of self-driving technology in automobiles is the way of the future. That depends on whether it's sunny or not.

1.2.3 Types of Automobile

Different types of cars are classified according to the following:

Purpose:

According to their purpose, vehicles are classified as passenger vehicles and commercial vehicles. Vehicles that carry passengers are called passenger vehicles and those that transport materials or goods are called freight vehicles. Some examples of these vehicles are

1. Passenger vehicles: cars, buses, jeeps, rickshaws.

2. Freight vehicle: truck.

Capacity:

Based on their capacity, vehicles are classified as light motorized vehicles and heavy motorized vehicles. Light motorized vehicles can carry lighter items and smaller sizes and weights. But heavy motor vehicles can carry very heavy materials and have a large mass and larger size.

1. Light motor vehicles: motorcycles, cars, scooters.

2. Heavy motor vehicles: buses, tractors, trucks.

Fuel used:

According to the fuel used, vehicles can be divided into gasoline vehicles, diesel vehicles, electric taxis, steam trains and gas vehicles.

1. Gasoline vehicles: cars, motorcycles, jeeps, scooters.

2. Diesel vehicles: trucks, buses, tractors, cars.

3. Electric cab: Forklift truck, Battery truck.

4. Steam trolley: Steam compressor roller.

5. Gas vehicles: Gas fuelled vehicles.

According to the number of wheels, vehicles are classified as two, three, four, six and eight or more wheels.

1. Two-wheelers: Motorcycles, Scooters, Mopeds.

2. Three wheels: Time, Road roller.

3. Four wheels: cars, buses, jeeps, tractors.

4. Six wheels: Trucks, Buses, Arms Transport Vehicles.

5. Vehicles with eight or more wheels: Car Carrier Vehicles, Rocket Carriers

Propulsion Vehicles:

Depending on the mode of propulsion:

1. One-wheel drives vehicles.

2. Two- wheel drives.

3. Four- wheel drives.

4. Six- wheel drives.

1.2.4 Characteristic of Automobile Industry

The automotive industry includes various organizations and companies with various factors such as vehicle design, production, development, and sales of motorcycles. The automobile industry is regarded as one of the world's most important economic sectors in terms of turnover, but various spare parts such as tires and engines are excluded from it and many other organizations or companies are excluded from car maintenance, fuelling stations and repair shops. The automotive industry also provides main parts for heavy and light equipment, heavy trucks, and motorcycle manufacturers. Retailers, distributors, importers and wholesalers etc. are also included in the automotive sector. The modern automotive industry consists of more complex vehicles with new techniques and technologies. Various electronic and mechanical parts have now been updated with modern techniques. Basically, automotive industry companies include car manufacturers and auto parts manufacturers. This sector also offers various job opportunities in various sectors such as creative, financial, mechanical, commercial, and technical. Globally, various cars like Toyota, Honda, Hyundai etc. they lead the world. The industry changes from day to day with certain models, technologies, and materials.

Value chain in the automotive sector:

This automotive industry value chain covers the entire range of product activities through to their final delivery to the customer. If, on the other hand, the firm is involved in the manufacture of goods, the value chain begins with raw materials. Until the product is ready for sale, all procedures throughout the value chain add value to it. The value chain analyses issues and improves them. The automotive industry value chain includes design and manufacturing-related operations spanning the manufacturing stages. Most of the products are converted into raw materials. Some automotive industry manufacturers have their operations spread all over the

place which helps them save on shipping costs on various products. Incoming logistics is known as the main step in the production line. They include the collection of raw materials from other suppliers at various locations within them.

Vehicle Service:

In-car vehicle service is connected to a variety of other devices. Service is the most recent phase in the automobile industry's value chain, adding value to every product it includes. They also ensure various activities to provide various customer supports to a large number of customers. Infrastructure, human resource management, and information technology are some of the key operations in the value chain.

Advantages in the Automotive Industry:

The industry has less time for sales and marketing activities. The company must also be able to reach as many customers as possible with its new products. Some high costs lead to indications that they are of high quality due to customer requirements. Some companies are looking ahead to how automakers will perceive various information and factors and whether their need to overstock products. Inventory management needs to keep the mobility required by the modern automotive industry under control.

Some Key Terms in the Automotive Industry:

Autonomous Vehicles:

These are vehicles that can drive themselves and offer various benefits such as lower fuel consumption, increased mobility as well as reduced distractions and accidents.

Electric Vehicles:

These cars are propelled by an electric motor that draws power from rechargeable batteries.

Hybrid Electric Vehicle (HEV):

This vehicle can use both electricity and gasoline for its operation. The car's brake system is used to recharge the battery.

Advanced Driver Assistance Systems (ADAS):

This technology enables the vehicle to identify objects and alert drivers of potentially dangerous road conditions.

Battery Electric Vehicle:

Uses electricity for operation and an external charger socket to charge the battery. Telematics - This method is used to track cars with a GPS system. While driving a car, you may map and record where you are as well as how quickly the automobile goes and acts.

1.2.0 World History

The automotive industry is massive, competitive and just a few years older than a century. It is expected that the automobile industry will undergo major changes in the coming years due to decreasing oil reserves leading to high fossil fuel prices, globalization, increased regulations, and environmental concerns. Moreover, the industry will evolve owing to “various innovations

in fuels, vehicle components, societal infrastructure, and manufacturing practices, as well as changes in markets, suppliers and business structures."

Some historians refer to sail-mounted carriages of the year 1600 as the first vehicles while others refer to the development of the engine as the key starting point for the automobiles.

Karl Benz is credited with creating the first practical vehicle with a gasoline engine in Mannheim, Germany, in 1885. On 29 January 1886, he received a patent for his vehicle, and in 1888, he launched the first automotive manufacturing.

Other innovations include a steering wheel and a floor-mounted accelerator, were developed in the 1890s and early 1900s, making cars easier to use and hastening the growth of the automotive industry. Driver's licences have been issued, a petrol station has been created, and automobile sales have developed a loan system. During this time, famous vehicles such as Ford's Model T were created. By 1906, automotive design had begun to shift away from the appearance of horse-drawn carriages and toward a more car-like form.

During the 1910s, traffic lights began to appear in the United States, and BF Goodrich posted thousands of road signs on more than 100,000 miles of roads in the United States.

In 1913, the American industrialist Henry Ford launched the famous assembly line, which facilitated the mass production of vehicles and therefore achieved economies of scale. He also spoke on the usage of convertible and common parts to aid in mass production.

Automobile manufacturers also began to merge with other firms and expand into new markets. Apart from the continuing of company mergers, emphasis was placed on infrastructure development and the implementation of innovative production processes. Companies such as GM implemented innovative manufacturing strategies in order to increase product diversity and market share.

Several new brands emerged in the 1930s, such as Ford Mercury, Lincoln Continental, and Volkswagen, in response to changes in vehicle consumer preferences. Customers in America, for example, favoured expensive and powerful vehicles, but consumers in Europe chose smaller and lower-priced vehicles.

Many European and Asian-Pacific countries steadily led to the development for innovative trends and strategies. During World War II (WWII), civilian vehicle manufacturing was halted in the 1940s, and automotive industries were converted to produce military vehicles and weaponry. Following WWII, when most nations' economy were ravaged, Japan envisioned Just in Time (JIT) production as a corporate strategy to negotiate for the time necessary in the creation of new products. The method was successful; corporations such as Toyota have been able to improve return on the investment by diminishing in-process inventory and lowering carrying costs.

More technological innovations and new concepts, such as changing the look and feel of automobiles, fibreglass bodies, higher compression ratio fuels, vehicle comfort, look and feel, emerging safety and environmental regulations, vehicle speed limits, front seat belts, and heating and ventilation equipment, were introduced into the automotive industry in the 1950s and 1960s.

The 1970s saw the implementation of more strict environmental rules, and the early years of the oil crisis resulted in the creation of low-emission vehicles automobile technology; catalytic converters, for example. Foreign automobiles, such as Japan's Honda Civic, began to debut in the US market. Consumer interest in energy-efficient automobiles has begun to rise as a result of rising oil and gasoline prices. Asian-made fuel-efficient vehicles are beginning to gain in developed markets, market share. Japanese automakers also used lean manufacturing throughout this decade.

Throughout the 1980s and 1990s, the market share of cheap and fuel-efficient automobiles increased. The car industry's market share in the United States is beginning to be replaced by higher-quality, reasonably priced, and more fuel-efficient cars produced by Japanese automakers. Therefore, as automakers begin to assemble cars from all over the world, auto manufacturing has become more global. With the creation of abroad facilities and the merging of multinational automakers in the 1990s, this tendency increased. This worldwide growth enables manufacturers to enter new markets more rapidly and at a cheaper cost.

Massive foreign assembly factories were developed, and several mergers between huge, international automakers occurred. This resulted in a greater selection of vehicles on the market for customers to choose from, as well as intense demand amongst automotive manufacturers. Consumer maturity and power continue to develop, with these and therefore more professional markets with changing customer groups which including Southeast Asia and Latin America. As a result, the number of global alliances and corporate strategic partnerships developed with multinational automakers has expanded.

For car and light-duty vehicle producers, the current moment is turbulent. As a result of rising fuel prices and increased environmental concerns, industry income growth has been quite poor in contrast to past years. This has altered customer tastes away from large, gas-guzzling pickup trucks and toward smaller, more fuel-efficient automobiles. Beginning in 2007, worldwide economic downturn has brought too many of the largest car manufacturers in the world financial distress, and spread to other countries around the world, leading to rising unemployment and wealth. General Motors suffered particularly badly hit, in 2009 According to the US Bankruptcy Code 11 bankruptcy protection chapter. Automobile demand has declined due to fewer disposable income and more concern about the long term. Car sales fell in 2008 and 2009, but have subsequently rebounded dramatically.

1.2.1 **Indian History**

Automobile sector had a revolutionary journey since pre independence. Indian market majorly imported vehicles and assembled them. Key players of pre independence era were general motors and other miscellaneous brands. India majorly used to perform the activities such as providing finance, services and maintains dealership of imported vehicles. India started manufacturing almost a decade after independence. Up to 1950 Indian railway significantly supported transportation services. Indian auto sector faced several hurdles since it started manufacturing. Certain limitations were imposed on manufacturing activities “by the rules of license”. Despite all these challenges Indian auto sector achieved the road of success and performed well in leading the growth.

Since the manufacturing started in India "Hindustan Motors, Premier Automobiles and Standard Motors" were the key manufactures. The production capacity continues to be 40000 per annum for 30 years post-independence. Also, there were no guideline available through experts and research and development was inadequate. Labours were unskilled. Training process was time consuming with terms of trail and errors. The auto revolution started since 1950's

I. The Ambassador of the decade was the Morris oxford for the year 1950.

II. In the same year, the fiat 1100 was introduced as the Premier Padmini.

III. In 1960's the maximum production was done on the basis of autochthonous almost which was almost 98%.

IV. The automobile industry had undergone various important modifications in the decade of 1997. Many joint venture initiatives which involved the manufacturing of light commercial vehicles started as large projects but failed to succeed by the end of the decade.

V. Contrary to such failure, "contess, the rover and the premier 118NE" the new launches succeeded in the market.

VI. 1980's India largely followed the socialist economic system till the end of decade.

VII. The government largely focused on manufacturing which lead the economy towards initiative development including "heavy, long gestation and capital intensive projects." They mainly focused on delivering quality products and receiving feedback from customers.

The automobile was first introduced in India in 1897 in Bombay. The Indian automobile sectors are under gone a revolution since ages. "The pioneer Mr. J.R.D. Tata launched "the Tata group with high standard engineering research centre (ERC) in 1965". Mr. J.R.D. Tata played a key role in developing the automobile sectors. The centre he launched was equipped with advance technology. "Pioneering the indigenization of scientific knowledge for trucks in collaboration with Mercedes Benzes" and transformed the dynamics of heavy vehicles. Maruti 800 which was well known as people's cars, was a huge change in passenger car sector. Even today Tata motor leads "Indian commercial vehicle market" by 60%.

At present India is a well-known auto market around the globe growing with embryonic minds and powerful economy. There are many foreign participates making investments in the Indian automobile market. India has biggest "three wheeler & two wheeler market" a second highest tractor market, "fifth largest commercial vehicle" market. Two wheelers and motorcycles comprise 80% of the segment which made India a leader in passenger vehicle market. Also, among passenger market the cars lead the market by 79%. India is leading the motorcycle production by 5.2 Million. Ratan Tata launching NANO the cheapest car of world costing around one lakh was the recent revolution created in automobile industry. India becomes the fourth largest car market in Asia with the mark of one million.

1.2.2 **Automobile Industry in India at Present**

India has become "the fourth largest auto market" with leading exports in two wheelers and four wheeler market. On a futuristic view point, a vigorous growth is estimated in auto exports. In 2019, India dislodged Germany with a hike of 3.99 million units in sales, under the category of

passenger and commercial vehicles. Also, India is prognosticated to become the third largest auto market by overriding japan by 2021. Government made great manoeuvres for Indian automobile sector. The leaders among Indian auto market anticipated India as a global market leader by 2020 under the segment of two wheelers and four wheelers. The companies scout out the rural market with blooming interest among consumers which helped marketers in growing. Among various segment of auto market, two wheelers leaded the market with high sales in target market consisting of young middle class consumers.

"Trucks, cars, buses and three wheelers" also played a significant role while contributing in the growth of economy. India followed "Japan, south Korea and Thailand" and became "fourth largest exporter" of Asia in automobile industry. India is envisaged to reach up to 611 million vehicles nationally and lead the automobile sector by 2050. Its incredible achievement complements its story behind the strong economy and its progress which is clearly linked with proportion of goods and services manufactured which played the crucial role in increasing the sale of vehicles and boosting the transportation capacity. Easy availability of raw material such as "steel, rubber, plastics, glass, paint, electronics and services" indirectly boosted the manufacturing capacity of auto industry and reflected the catalyst effect in expanding demand and economic growth.

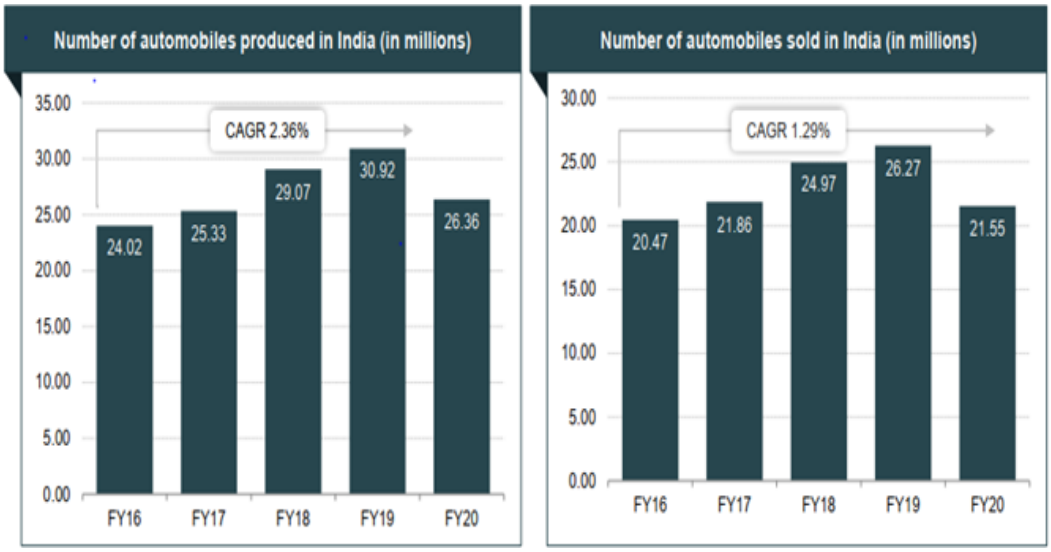


Figure 1.2 ***Source:*** Society of Indian Automobile Manufacturers (SIAM)

- The Indian auto sector is engaged in manufacturing of commercial vehicles, passenger cars, three wheeler and two wheelers.
- The country successfully produces 26.36 million vehicles as on 2020 and CAGR was recorded with 2.36% hike for manufacturing of auto sector and fulfilling domestic demands within the span of financial year 2016 to financial year 2020.
- With boost in domestic sales, the Indian auto mobile sector boosted CAGR by 1.29% during the financial year from 2016 to financial year 2020. In financial year 2020, the sale of vehicles increased to 21.55 million.

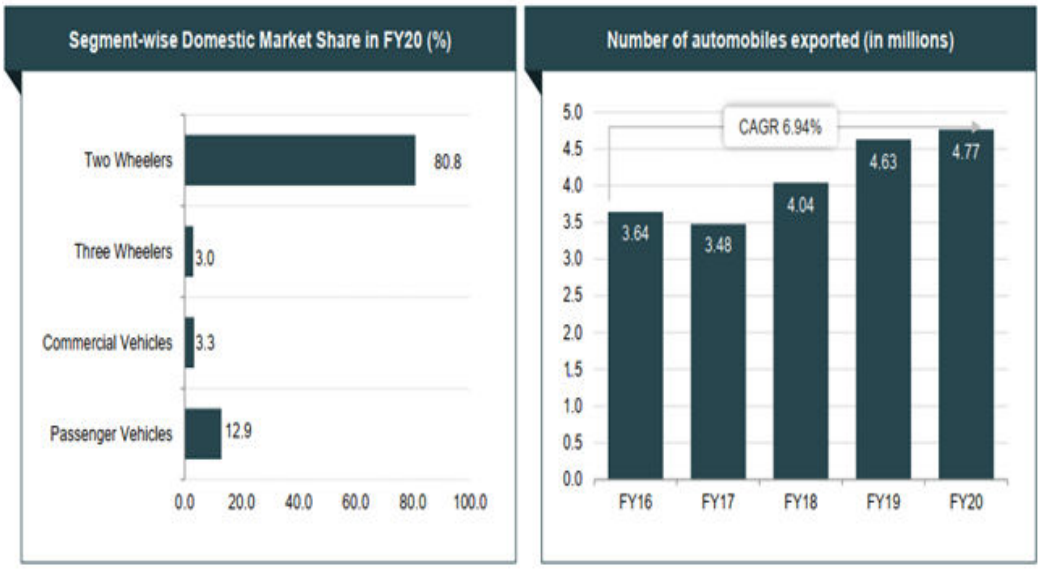


Figure 1.3 ***Source****:* Society of Indian Automobile Manufacturers (SIAM)

- Four wheeler vehicles and two wheeler vehicles generated market share of 12.9% and 80.8% and dominated the domestic Indian auto sector. Passenger cars are further divided into small and mid-sized cars, which also outshined in the market. In the financial year 2020 their overall sales increased to nearly 20.1 million vehicles.
- With regard to exports by automobile sector, CAGR accounted for of 6.94% in between the financial years 2016 to 2020. The exports were around 4.77 million vehicles for financial year 2020, comprehensively. With further segmentation, export for two wheelers, passenger vehicles, commercial vehicles and three wheelers were recorded as 73.9%, 14.2%, 1.3% and 10.5%.
- Various key players contribute from each section of Indian auto sector are:-

1. **Passenger Vehicle:-** Maruti Suzuki with 51% market share was considered a leader for the segment in financial year 2020. In 2019 to 2020 the firm sold 1.41 million units. Maruti Suzuki successfully accomplished the objective of BSVI compliant cars within the targeted time of 1st April 2020. They inaugurated "Wagon R" and "Swift petrol" in 2019 June which were BSVI compliant. The exports were recorded at 6,77,311 passenger vehicles in financial year 2020.
2. **Commercial Vehicles:-** Tata motors triumphantly announced an exclusive of 14 commercial vehicles with sustainable mobility the auto expo event of 2020. The sales of 717688 vehicles were recorded for the financial year 2020.
3. **Two Wheeler:-** The segment's two primary participants are "Hero Motocorp and Honda motorcycle and scooter India" with market share of 35.77% and 27.02% in financial year 2020. Chetak electric scooter was introduce by Bajaj auto with Rs. 1 lakh as its initial price. NTORQ 125, Race edition scooter was brought under limelight by TVS motor company in December 2019. The highest exports from India were noticed in January 2020 with 25 lakh units by Honda Motor cycle and scooter India.

4. **Three Wheelers:-** Bajaj auto and piaggio vehicles had the highest market share for the financial year 2020 in the three wheeler segment with 63.8% and 20.1% respectively. For the load category in three wheeler segment, piaggio vehicles and Bajaj auto recorded the biggest market share of financial year 2020 with 42% and 27%. The overall sales were of 636569 units for the financial year 2020.

1.2.3 Key Drivers

The automobile sector is influenced by four major business drivers: economic circumstances, customer preferences, the government, and technical advancement. Globalization is also having a significant impact on this business. Each of these business drivers will be discussed in depth in this essay.

Economic Situation:

The first key aspect is the state of the economy. Individuals are more likely to acquire new autos when economic conditions are favourable, boosting the industry's growth. The slowing of economic activity has resulted in a drop in consumer and company confidence, as well as a drop in automotive use. Automobile manufacturers must plan production capacity in order to obtain scale economies. Companies design their capacity based on sales projections, which seem to be entirely reliant on the trade activity. Because vehicle prices are established based on expected capacity, capacity decrease equals higher unit costs, capacity constraints have a significant influence on the industrial economics. As a result, economic conditions have a significant impact on automakers.

Consumer Requirements and Preferences:

Consumer interests, preferences, and wants are the second major motivator. The demand for more options continues to grow. Mass production may be similar to the production of high-end cars, and more vehicles are customized based on multiple options. Because buyers want more body form and aesthetic modifications, the market for specialty automobiles is expanding. As a result, many body kinds have been built using conventional platforms. People's awareness of the safety of occupants and pedestrians continues to increase, and consumers are also seeking higher fuel economy. The rising prices of fossil fuels are an example. Consumers are becoming more aware of specifications and want to include more in-vehicle electronics and telecommunication systems. Consumers in all markets place a high value on vehicle safety, and they are willing to pay a premium for automobiles with safety equipment.

Globalization:

Globalization and global industry impact are the third important drivers. The global car industry operates in a highly competitive climate today. The auto industry's globalisation developed dramatically in the second part of the 1990s, owing to the establishment of important international facilities and mergers amongst large multinational vehicle manufacturers. To cut manufacturing costs, the world's leading automakers invest in production plants in emerging regions. Automakers have merged with other automakers and, in other circumstances, formed corporate strategic alliances with other automakers, allowing them to grow into new markets. The world's automakers have been classified into three levels due to increasingly strong worldwide rivalry among global manufacturers and their placement in international markets.

The first tier includes General Motors, Ford, Toyota, Honda, and Volkswagen. The final two tiers of firms attempt to join or merge with lower-level manufacturers. First-tier automakers compete with Tier 1 automakers.

Technological Innovation:

Technology is the fourth important force that has a big impact on the automobile sector. Automobile manufacturers strive to deploy cutting-edge technology to combat competitive challenges and fulfil customers' rising quality and price demands. Because of technological advancements, they may add value to autos while lowering prices and profit margins. Technology also aids them in satisfying environmental legal requirements. Manufacturers may employ technology to address the growing customer need for more security and complexity. Consumers are also interested in improved navigation options, such as GPS, and expanded entertainment amenities, satellite radio and digital music access in the automobile are two examples. Vehicle advancements that may be required include more electronics and telematics, steering 42-volt electrical systems, safety innovations, electronically controlled steering, braking, ABS, and suspension. Drives that are electric, hybrid, or fuel cell may continue to develop, particularly for city automobiles and commercial vehicles. Complex route guiding, route planning between models, lane guidance, and proximity radars for speed control and warning systems are some of the capabilities that might be implemented. Consumers in this business are always in need of innovation, and technological advancements such as fuel-efficient, safer, and more comfortable low-emission automobiles will determine the industry's future.

The Government and its Rules:

The government is the fifth and most important driver of the automobile sector. The primary driving factor in the business is regulation; emissions and recycling rules have a significant influence on vehicle technology and construction. Governments in several countries have put stringent environmental rules on automakers in order to address fuel economy and pollution management. These regulatory conditions differ in numerous nations, and the criteria of network connection NE, which is necessary for all cars sold in these countries, are changing. This has had a significant influence on multinational automakers, because they should continually update their goods sold in different regions of the world to follow certain procedures. This will increase the production cost of connecting the display network to the ground.

1.2.4 Automobile Industry of the Future Scenario

India as per “automotive mission plan (AMP) 2016-26” is expected to bestow around 12% of GDP. Currently the industry’s contribution is accounted up to 7.1 of GDP. The sector has adopted notable modulation towards sustainable growth and productive gain. The ‘Make in India’ movement significantly improved India’s stature. They tried to reach maximum number of parameters and made pursuing business in India easy. India is destined as appropriate landmark for low budget manufacturing. India ranked 30 on “the global manufacturing Index” by the world economic forum. The expected FDI by 2026 with reference to industry is nearly US $ 51.4 - 282.8. There are 5 mega trends which are expected to play the key role in industry to make up a revolutionary change i.e. brisk extension in consumers requirement, technology’s

troublesome influence upon society, zestful environmental regulation, modification in mobility framework and worldwide associations. These mega trends are adopted for the first time with similar level of magnitude with multi-dimensional modification.

The original equipment manufacturers under goes the production process and assembling process of passenger vehicles, commercial vehicles and utility vehicles. They can be further bifurcated into two, three and four wheeler vehicles. Many companies compete globally in oligopolistic market to gain of market share. The original equipment manufacturer along with market share considers technology, production expenses, quality of production, economies of scale as the various criteria's for competitive market. The OEMs majorly prefer and use technology as their key tool to withstand competition. This helps manufacturers in increasing their labour, capital productivity and cost deduction. The original equipment manufacturers played a significant role in the Indian automobile industry by ushering in five mega trends.

OEMs and auto component manufactures (ACM) together try to fulfil the consumers demand. Auto component manufactures are the spare part manufacturers such as bearings, wipers, ties, breaks, AC systems etc. All the spare parts are finally assembled by OEMs Auto component manufactures are classified into tier-1, tier-2 and tier-3. They are classified as per their capacity of supplying the spare parts. The five mega trends which are imposed for betterment of industry i.e.

i. Brisk Extension in Consumers Requirement

- Modification of customer's sensibility
- Maximum consciousness among consumers
- Comprehensive knowledge of digital resources
- Rushing towards communal customers

ii. Technology's Troublesome Influence Upon Society

- Frequent improvisation in terms of technology with regard to vehicles, supply chain and business models
- Disturbance created due to advancement in products as well as services

iii. Zestful Environmental Regulation

- Regulatory interferences i.e. GST, ABS for two wheelers, BS IV to BS VI etc.
- High investment by industrialists in regulatory compliance.

iv. Modification in Mobility Framework

- Authorization of electric vehicles and associated infrastructure
- Financing for rehabilitation of roads and high ways.
- Alternative of sharing mobilities
- Developing smart cities with the help of information communication technology.

v. Worldwide Associations

- Worldwide recognition of Indian companies
- Opportunity of gaining investment globally
- Transference in economic power from one nation to another

1.2.5 Influence of COVID-19 in Indian Auto sector

India automobile sector contributes a major percentage of the total export with help of significant auto clusters i.e. "Chakan (Maharashtra), Oragadam (Tamil Nadu), Sanand (Gujarat) and the national capital region (NCR)." The major export hubs for Indian Auto industry are "Africa, Asia, Bangladesh, Mexico and the US." "China, Germany, South Korea, Japan, and Thailand" are the major import hubs from where India sources high quality components.

Despite, the companies performing up to the mark, the year 2019 brought several challenges along with sales depreciation. However, the companies managed to drive a decent turnover. The COVID-19 crisis was added as one among the several reasons for decline in auto industry performance. There was notable loss in country's GDP growth when compared to the performance of past six years. The auto manufactures were the real strugglers at time. IC engine vehicles were unfortunately not given any benefits under GST. Transmission from BS-IV to BS-VI emission norms was the key challenge for industry in 2020 where they were trying to omit the level of emission norm BS-V.

Starting from the financial year April 2019, the production of industry declined to 20,736,410 units when compared to the financial year 2018 which was 23,853,770 units. The decline was noticed in "passenger vehicles commercial vehicles, three-wheelers, two wheeler and quadricycles." The net fall due to the decline in sales was recorded at 13.07%.

The overall changes in Auto mobile industry in India during the period of April to December 2019 are described as below.

- Passenger cars sales fall to 23.59% and sales of passenger vans were 37.31%. Passenger vehicle segment shrunk an overall 16.40%.
- Utility vehicle's sale increased by 6.35%.
- Commercial vehicle's proportion decreased up to 21.09%.
- The medium and heavy commercial vehicle's share in sale deceased by 36.69%.
- Light commercial vehicles noted a negative growth of 11.34%.
- 2.7% of decrement was noticed in three wheelers sale and 15.8% of decrement was noticed for two wheeler sales.
- Bifurcating the two wheeler segment, "scooters, motorcycles and mopeds" recorded a fall in sales by 16.16%, 15.04% and 25.10% respectively. However in contrast to this overall export grew by 3.86 percent and passenger vehicles grew by 2. The union budget 2020-2021, was a major setback to the Indian Auto mobile industry as it had nothing substantial for the sector"

SIAM (society of Indian automobile manufactures) perceived the failure of the auto expo 2020. Also, the large players showed disinterest in participation. The SIAM proposed certain major modifications which were not considered by the union government i.e.

i. " An incentive-based vehicle scrapped scheme
ii. Budget allocation for diesel buses procurement by STUS,
iii. NIL customs duty for lithium ion batteries"

- **"Living with COVID-19 in 2020"**

Despite of downward trend in market, the auto industry faced massive loss. Before the trend was over, the bitter phase arrived due to COVID-19. The pandemic restricted entire world from working for more than a month or two. It spread like a wild fire in entire world. Many people died, economy paled, industrial growth declined. March 2020 witnessed one of the greatest fall in sales within the country, as stated by Rajesh menon, SIAM. It was never fathomed in ones wildest imagination that there would be zero domestic sales recorded in the month of April 2020 and also the exports would be meagre when compared to earlier months. April 2020 could be recorded as darkest month for Indian auto sector in history. He remarked negatively that for the first time ever in India auto industry's history, the year started with absolute zero domestic sales for entire month of April 2020. Starting from March 25 till May 03, 2020 the cumulative loss with zero revenue was derived as 92000 crore. Each day from 40 days calculated the loss of Rs. 2300 crore for OEMs.

China unpleasant behaviour spoiled the relations with many countries enforced India in infuriated manner to restrict the use of china-based applications, products and investments. This dispute the relationship of India and china affected adversely auto mobile industry. Great wall motors of china were about to announced MOU with Maharashtra government for a manufacturing plant in Talegaon, Maharashtra. This was later decline to be proceeded.

 ISBN: 978-93-93810-18-2

CHAPTER – II

Review of Literature

2.1.0 GENERAL

The research community has widely visited the area of working capital management and the variables involved therein. Some authors like Abdul Raheman et al (2007), Ahmad Ahmadpour et al (2012) and Taghizadeh Khanqah Vahid et al (2012) noticed that inventory turnover ratio had negative association with profitability. While Kaushik Chakraborty (2008) observed that inventory turnover ratio had positive association with profitability. In case of debtors turnover ratio, MS. Vasavi Pravallika et al (2018) and Syed Noorul Shajar et al (2016) noticed that debtors turnover ratio had positive relation with profitability. Moreover, as far as sales growth rate is concerned, Bana Abuzayed (2011) noticed that sales growth rate had positive association with profitability. While A.k.sharma et al (2011) observed that sales growth rate has negative relation with profitability. In case of cash & bank and marketable security, Ben le (2018) observed that there is negative influence of the cash conversion cycle with profitability. However, in case of creditors turnover ratio, Hakim Lyngstadaas et al (2016) noticed that creditors turnover ratio had negative association with profitability. As far as fixed assets ratio is concerened, Dr. M. Dhanabhakyam et al (2012) and P. Kalaivani et al (2017) observed that fixed assets turnover ratio had positive association with profitability. In case of Long term debt equity ratio, Joana Filipa Lourenco Garcia et al (2011), Parul Mehra (2013) and Dharmaraj Arumugam (2016) observed that debt equity ratio had negative association with profitability. In case of current ratio, Joana Filipa Lourenco Garcia et al (2011) noticed that current ratio had negative relationship with profitability. While, Dharmendra S. Mistry (2015) and Zill-e-Huma et al (2015) observed that current ratio had positive association with profitability.

2.1.1 The literature review carried out for the study is briefly described below.

V.S.Kaveri (1985) in his study titled as, "Financing of working capital in Indian Industry" examined large public limited firms of 12 major Industries over a period of eight years from 1975-1983. The data from the RBI, which focuses on the finances of major public limited firms, was utilised by the researcher. The author has examined the data of 385 companies in the year 1975, 415 companies in the year 1979 and 478 companies in the year 1983. The researcher had studied different financial aspects like assets and liability, profitability, solvency and capital structure of the companies. Sundry debtors as percentage of sales, current ratio , debt as percentage of equity, inventory as percentage of sales and bank borrowing as percentage of working capital gap or current assets were consider as ratios in this paper. The author had used two types of data for analysing viz., time analysis and industry wise analysis. It was decided that Indian industry, on the whole, did not adjust the pattern of working capital finance as proposed by the Chore committee in order to strengthen rule protection. It was found that improvement was observed in position of WCM during the period of 1975-79 and 1979-83. Researcher on the basis of different statistical tools has observed the firms have not widened their financial base.

Chun-hoo Chang et al. (1995) in their study titled as, "Current assets policies of European corporations: A critical examination", examined 766 companies over a period of 6 years i.e., 1985 - 1990. This study included 14 European countries and 12 industry groups for research. The description of sample data of companies selected for study were further divided into areas such as Automotive chemical, electronic, metal, oil and Gas and retailing etc. They had taken current assets, fixed assets, cash receivables, inventory, current ratio, Quick ratio, cash

conversion cycle, sales growth rate and asset growth rate as variables. They used K-S and K-W test. Result showed that European financial managers could be benefited with the usage of certain techniques that has emerged from this study. The study found that comparative study provided critical evaluation of company's performance lead to efficiency.

Hyun-Han Shin and Luc Soenen (1998) in their study titled as, "Efficiency of working capital management and corporate profitability" examined 58985 firm of compustat annual industry over 20 years from 1975 - 1994. They had taken net trade cycle, current ratio, total assets, IA, IS, DR, ALPHA, Treynor index, sales growth, inventory, receivables, payable, net sales, current assets, current liabilities, total debt, difference in net trade cycle as variables. It was noticed that there was adverse relationship among the profitability and company's net trade cycle. It was further noticed that lower net trade cycles were in relationship with more stock return and there was negative significant relationship between company's stock returns and net trade cycle.

Vedavanayagam Ganesan (2007) in his study titled as, "An analysis of working capital management efficiency in telecommunication equipment industry" examined the 349 telecommunication equipment firms over a time period of 2001-2007. He has taken days sales outstanding, days payable outstanding, days working capital, current ratio, cash conversion cycle, income to total assets and income to sales as component. The result shows that the companies in telecommunication equipment sector organized all the three element of working capital management equitably. It was noticed that days working capital of the companies is more than days working capital of the sector average and the working capital management variables days sales outstanding and days payable outstanding were in line with their sectors averages. It was recommended that the telecommunication sector should increase working capital management influence by focusing on decrease of stock and increase of days payable outstanding by receiving high credits from creditors.

Kaushik chakraborty (2008) in his study titled as, "Working capital and profitability: An empirical analysis of their relationship with reference to selected companies in the Indian pharmaceutical Industry." studied 25 businesses in the Indian pharmaceutical sector during a twelve-year period from 1996-1997 to 2007-08. He had taken working capital management and profitability as variables. The working capital management for the study includes: current ratio, inventory turnover ratio and debtors turnover ratio. The profitability for the study includes: profit before interest and tax margin and return on capital employed. The study was conducted on following companies: Parke Davis, Pfizer, Organon, Lupin, Matrix, Glaxosmithklinge, Dabur, Cipla, Aventis, Aurobindo, Dr. Reddy, Abbott, Anuh, Aarti drugs, Merck, Novartis, Fulford, Solvey, Daurala, Astrazeneca, Wyeth, Nicholas Piramal, Pharmaids, Ranbaxy and Phaarmasia. The margin of safety and profitability were shown to be positively related, whereas the current ratio was found to be adversely related to profitability. The results reveal that there was a favourable relationship between inventory turnover ratio, debtor's turnover ratio. The study found that as per the regression coefficients i.e., there was positive insignificant relation between liquidity management and profitability and there was insignificant influence of the liquidity management, inventory management and credit management on profitability.

Abdul Raheman et al. (2011) in their study titled as, "Sector-wise performance of working capital management measures and profitability using ratio analysis", examined the 204

manufacturing for 10 years from 1998 - 2007. There were 204 companies listed on Karachi stock exchange and 765 companies were listed on the stock exchange which includes 448 companies. They had taken receivable turnover in days, inventory turnover in days, payable turnover in days, cash conversion cycle and net trade cycle as variable. These variables of cash conversion cycle support them to analyse the payment policy, collection and inventory conversion on the basis of sectorial. The net trade cycle may be used to assess working capital management performance. It was observed that it supported them and to know the leading and laggard sectors was compared among various manufacturing sector of working capital management. The interpretation of empirical analysis applied in the study insinuated that leather sectors and jute, pharmaceutical, cable and electric goods and automobile parts have significant positive impact of cash conversion cycle and profitability. Cash conversion cycle was applied for sales increment which expanded profitability. It was argued that firm managers may create value for shareholders by reducing the number of days in inventory, cash conversion cycle, and net trade cycle to a logical minimum, and that finance executives should be concerned about it.

Joana Filipa Lourenco Garcia et al. (2011) in their study titled as, "The impact of working capital management upon companies' profitability: Evidence from European companies." examined eleven companies list on European stock exchange for twelve years from 1998 - 2009. They collected data from data stream database. Secondary sources were used in the research. They had taken two types of variable - dependent variable and independent variable. Gross operating profitability as dependent variable and receivables collection period, Inventory conversion period, payables deferral period, cash conversion cycle, size of companies, debt ratio, current ratio, financial assets to total and assets ratio as independent variables. Working capital management has a negative influence on gross operational profitability, according to the findings. The payment deferral duration, receivable collection period, inventory conversion period, and profitability were shown to have a strongly unfavourable relationship. It was revealed that firms could rise their profitability by abbreviate inventory, payables and receivables. It was discovered that the current ratio and debt ratio had a detrimental impact on the firm's profitability.

A.K.Sharma and Satish Kumar (2011) in their study titled as, "Effect of working capital management on firm profitability: Empirical evidence from India." examined 263 firms listed on Bombay stock exchange 500 firms for nine years from 2000 – 2008. Secondary data was used to conduct the research. They had collected data from the CMIE-PROWESS and Capitaline database. They had taken return on assets as dependent variables. Number of days accounts receivables, number of days account payable, and cash conversion cycle were taken as independent variable and size, sales growth leverage and current ratio as control variables. Profitability was shown to have a negative relationship with both the number of days of inventory and the number of days of account payables, but a positive relationship with the number of days of accounts receivables. The study indicated that profitability and working capital management was positively associated in Indian firms. It was shown that the cash conversion cycle had a detrimental impact on the profitability of Indian enterprises.

Arunkumar O.N. and T. Radharamanan (2011) in their study titled as, "Analysis of effects of working capital management on corporate profitability of Indian manufacturing firms." examined eight manufacturing industry for five years from 2005-06 - 2009-10. Secondary sources were used in the research. They had taken debtors days, cash velocity, working capital policy, net working capital leverage, size and current ratio as variables. There was negative association among profitability and creditor's days, inventory days, debtor's days as per the correlation analysis. It was noticed that positive association among profitability and inventory days, account payable days. It was found that profitability enhanced when the current liabilities and current assets were similar and when cash conversion cycle was shorter.

Swati Modi (2012) in her study titled as, "A study on the adequacy and efficacy of working capital in automobile industry in India." examined five automobile companies for 5 years i.e., 2004 - 2008. In this study, five auto mobile companies were Tata Motors, Bajaj Auto ltd., TVS, Hero Honda and Maruti Udyog. The objectives for this study were to study the influence, trend liquidity status, effectiveness and financing approach of working capital management in automobile business and examine the operating cycles. She had taken working capital, profit before tax, profit after tax, proposed dividend, tax liability, raw material purchase, depreciation, sundry debtors and inventories as variables. She used ANOVA and correlation matrix for analysis. The result indicated that Maruti Udyog and Tata motors were positive association with working capital however the result revealed that few firms like Bajaj auto, Hero Honda and Tata Motors had negative relation with working capital. The study, found that all firms did not have similar situation as per liquidity status. It was noticed that all the firms had negative operating cycles except Maruti Udyog; Maruti Udyog had positive operating cycle. It was concluded that Maruti Udyog and TVS were managing good balance among liquidity and profitability while Hero Honda was performing negative working capital. Bajaj auto had a same approach such as Hero Honda with respect to working capital management.

J. Aloy Niresh (2012) in his study titled as, "Working capital management and financial performance of manufacturing sector in Sri Lanka" studied the management of working capital effectiveness of 30 industrial companies during a four-year period (2008 to 2011). Here in this paper result shows that, there was no relation among performance measures and cash conversion cycle. It was also determined that manufacturing firms in Sri Lanka adhere to traditional working capital management policies. According to conservative policy, high investment in current assets may also raise profitability. If they handle more inventory, cost disruptions in the manufacturing process may be reduced, as will supplier costs and pricing changes.

Taghizadch Khanqah Vahid et al. (2012), in their study, "Working capital management and corporate performance: evidence from Iranian companies", examined 50 various companies for four years viz., 2006-2009. They had taken net operating profitability as dependent variable and average collection period, inventory turnover in days, average payment period, cash conversion cycle and net trading cycle were taken as independent variables and size, sales growth, financial liabilities to total assets ratio was taken as controlling variables. It was discovered that the average collection duration, inventory turnover in days, average payment period, cash conversion cycle, and business profitability all had a negative association. Aside from the Cash conversion cycle, every measure of the correlation coefficient was significant for working capital management. The cash conversion cycle and net operational profitability were shown to

have a negligible connection. According to the study, higher payment duration, collection period, and net trading led to a decline in the company's profitability. It was discovered that managers may boost the profitability of their enterprises by decreasing the payment length, collection period, and inventory turnover.

Nahid Maleki Nia et al. (2012) in their study titled as, "An analytical review of the effect of working capital development on financial performance measures", examined 478 firms for 17 years i.e., 1982-1998. This study evaluates various methods which were the sharp ratio, jensen's alpha and Eva. It was examined that factors affecting on working capital i.e., liquidity ratio, current asset ratio, combination of current items, liquidity risk management, capital market efficiency. In this study, working capital approach was basically two theories which include three approach i.e., conservative approach, the aggressive approach and the moderate approach. They had taken various component of working capital management that described cash conversion cycle, receivable collection period, inventory conversion period and payable deferral period. Researchers conducted analytical-descriptive study that was divided into two parts: the influence of working capital strategies on financial results and the impact of working capital measurements on financial performance. The study indicated that the influence of working capital strategies on liquidity should be considered.

Kesseven Padachi et al. (2012) in their study titled as, "Working capital financing preferences: the case of Mauritian manufacturing small and medium-size enterprises (SMEs)", examined the 145 Mauritian companies. In this study research was done on the basis of primary data only and they were collected 145 survey forms from Mauritian companies. In this study researcher represented eight main industry groups by using stratified sampling. They used two type of technique i.e., parametric and non-parametric test. The study was conducted on following companies: chemical, wood and furniture, food and beverages, jewellery, rubber and plastics, leather and garments, metal products, pottery and ceramics and paper products and printing. This study categorized industries in three different groups such as heavy industry, light industry and food and beverages industry. For descriptive statistics, ownership and structure, size, age, industry, financial preferences, information asymmetries, retention of control, sources of finance, focus on financing models, cluster analysis, financing patterns profiles of clustering firms such as reliance on formal working capital, reliance on formal working capital, reliance on internal equity, reliance on FWC and IE and none of the traditional sources of finance and financial boost rapping techniques were studied in this paper. It was observed that size, business life cycle and trade credit were different requirement. The result showed that the researcher represented the important sources of financing such as non-bank sources, internal resources and short term debt. Shareholder loans and bootstrap finance were informal sources used by small & medium enterprise sized Mauritian companies. From this study can help such financial institutions, which provide fund to SMEs and to policy makers.

Amir Hossein Jamali and Asghar Asadi (2012) in their study titled as, "Management efficiency and profitability theory to practice" examined 13 auto manufacturing firms for 5 years from 2006 to 2010. They had taken gross profit ratio and asset turnover ratio as their variables. The data were examined on Minitab statistical software. It was shown that managerial efficiency and profitability were highly associated. It was suggested that the management efficiency and profitability should be improved in auto manufacturing companies.

Bana Abuzayed (2012) in the study titled as, "Working capital management and firms' performance in emerging market: the case of Jordan." examined 52 non-financial firm for nine years from 2000-2008 has been taken for analysis. The research was conducted using secondary sources. The researcher has taken 3 kinds of variables which were dependent, independent and control. Gross operating profit and Tobin's Q were taken as dependent variables. Cash conversion cycle, number of days account receivable, number of days inventory and number of days account payable were taken as an independent variables. Also, size, sales growth, leverage, fixed financial assets to total assets, variability of net operating income and growth in gross domestic products were taken as control variables. They applied panel data for analysis. It was determined that there was a strong positive correlation between corporate profitability and the cash conversion cycle. The study revealed that highly profitable companies were less inspired to control their working capital management.

Dr. M. Dhanabhakyam and S. Kavitha (2012) in their study titled as, "A study on asset management of selected automobile companies in India", examined performance of 5 firms for ten years from 2001 to 2010 were taken for analysis. The data was collected from Capitaline plus and CMIC data base for the period ranging from 2001 to 2010. The study relied solely on secondary data. In this study, the main objective was to evaluate the efficient utilization of the assets financing pattern some automobile firms and to provide certain recommendations with the help of the results. The study was conducted on following companies: Apollo tyres ltd, Ashok Leyland ltd, Bharat forge ltd, Bosch ltd and Cummins India ltd. They had chosen Inventory turnover ratio, Debtors turnover ratio, Working capital turnover ratio, Fixed asset turnover ratio, total asset turnover ratio and sales to capital employed as variables. They used ratio analysis and Karl Pearson correlation analysis. It was recommended to enhance the financial situation strength of automobile firms in India and current assets should be decreased. Modification suggested was for speeding up of receivables by collection policy. It resulted in decrease of wasteful spending and leads towards improving highly profitable and more productive investments. It also makes long term and short term goals less complicated and high profitable for manufacturing. Further study recommended that Inventory turnover ratio be should increase. Again, automobile firms need to avoid dependence on external borrowing and plough back for diversification and expansion. It was concluded that pushing auto majors to consolidate, evaluate new markets costs, enlarge product range and upgrade technology using the globalization. It was also observed that improving asset management is a continuous process.

D P Singh (2012) in the study titled as, "Working capital management practices across industries in India." examined sixty three firms from seven industries. Financials of each firm had been acquired from an emerging market information service. Researcher had studied financials of various firms. The study was conducted on following companies: Automobile, Cement, Steel, IT, Telecom, Fertilizer and Chemicals and petrochemicals etc. He had taken current ratio, inventory turnover, return on capital employed, working capital turnover ratio, days inventory outstanding, days payable outstanding, days sales outstanding and cash conversion cycle as component. He had used ANOVA to investigate from descriptive analysis. The results demonstrate that there was no substantial difference in the diversified components of profitability and working capital management between manufacturing businesses and non-

manufacturing firms, since the difference was due to contingency in the manufacturing firms solely.

Omo Aregbeyen (2013) in his study titled as, "The effect of working capital management on the profitability of Nigerian manufacturing firms." examined 48 large manufacturing firms for thirteen years from 1993-2005. The research was done based on the secondary sources. Researcher considered variables which were, profitability of firm, average collection period, average payment period, inventory turnover in days, cash conversion cycle, current ratio, leverage, size, return on assets, net operating income and growth operating income. Researcher has used descriptive analysis, empirical analysis and regression analysis. It concluded that the enterprises had been ineffective with their working capital management and make loss in their profitability. The result indicated that boost the productivity of working capital management was necessary for the companies. According to the report, manufacturing enterprises in Nigeria could shorten their average collection duration, average payment period, inventory turnover in days, and cash conversion cycle in order to increase their profitability.

Srinivas K T (2013) in his study titled as, "A study on working capital management through ratio analysis with reference to Karnataka power corporation limited", examined the working capital management performance of single unit i.e., Karnataka power corporation limited for five years from 2007-08 to 2011-12 has been taken for analysis. The research was done on the basis of secondary data. He had taken current ratio, liquid ratio, working capital turnover ratio, net worth ratio, debtors turnover ratio, average collection period, inventory management, current assets ratio, receivables management and cash turnover ratio as variables To improve the firm's liquidity position, the cash balance must be improved. It was established that the firm's profits rose year after year, but the firm's money were mismanaged. Karnataka power corporation limited should improve its financial positions in future because the firm is in the process of expanding is not profit as well as production.

Richard Kofi Akoto et al. (2013) in their study titled as, "Working capital management and profitability: evidence from Ghanaian listed manufacturing firms" examined 13 industrial enterprises in Ghana covering a period of five years (2005-2009). The research was done on the basis of secondary data. They had taken Return on equity (ROE) ,Account payable days (APD), Account receivable days (ARD), current ratio (CR), Size and Cash conversion cycle (CCC) as variables. An adverse association among account receivables and profitability was observed. They used descriptive statistics and regression analysis for analysing data. In this study results showed that account receivable days has negative influence on profitability of industrial corporations in Ghana. It means that companies should decrease their average collection period to 30 days. It was discovered that there is a favorable and irrelevant relationship amongst account payable and profitability. They concluded that sales, cash conversion cycle and current assets have a significantly positive influence on the companies' profitability. Also observed that sales also affect the profitability and therefore managers should improve their product quality and focus on advertising to increase sales and also firm should increase current assets holdings to increase sales.

Kesseven Padachi (2013) in his study titled as, "Sourcing working capital finance: the case of Mauritian SMEs", examined that collected sample of 145 survey forms out of 420 companies.

Research was done on the basis of only primary data collected from small business and owner managers. They had taken ordinal and binary as variables. Researcher used parametric and non-parametric tests for analysis. Researcher was also used the statistical package for social sciences. They further used multivariate regression and logistic regression analysis. They had selected debtors, creditors, late payment problem, trade credit, advance payment as variables. In this study, observed that, there was no difference in female and male rules of finance but companies suffered more due to financial crisis. The result showed that for increased need of finance the firm's production cycle needed to be extended. Results found that there are significant implications for the firm practitioners, lending institution and government agencies also construct policy decisions for improved serving diverse group of companies.

Salla Marttonen et al. (2013) in their study titled as, "Profitable working capital management in industrial maintenance companies." examined 18 large enterprises over a time period of five years from 2004 – 2008 has been taken for analysis. The research was done on the basis of secondary sources. They had taken return on investment and cash conversion cycle as variables. Researcher applied a mix of empirical analysis and analytical modeling for analysis. They also used flexible asset management model in this paper. The findings revealed a adverse and substantial association amongst the return on investment and the operational working capital cycle durations. Working capital management was also shown to be important in the industrial maintenance service sector because to its low fixed assets and efficient profits.

Parul Mehra (2013) in her study titled as, "Effect of working management on the profitability of the Indian pharmaceutical sector", examined the 20 Indian pharmaceutical companies for five years i.e., 2008 to 2012. She took net operating profit, cash conversion cycle, average collection period, inventory turnover in days, average payment period, current ratio and debt ratio as variables. The data were analysed on the basis of SPSS and Gretl software for the period ranging from 2008 to 2012. She was used descriptive statistics analysis for this study. It was observed in this study that if cash conversion cycle was decreased then company could increase their profitability which could be used as working capital management. This study discovered that by shortening the inventory conversion period and receivables collection duration, the cash conversion cycle may be reduced. It was shown that there is a adverse association amongst net operational profitability and average payment duration. In this study, it was discovered that there was a positive association amongst the company's liquidity and the current ratio. It was discovered that the leverage of pharmaceutical businesses demonstrated a adverse association amongst debt ratio and company profitability. So, pharmaceutical companies used more debt and low profitability.

Titto Varghese and Kamal Kishore Dhote (2014) in their study titled as, "Impact of working capital management on firm profitability: A case study of HUL ltd., India." In the study, they looked at the performance of Hindustan Unilever Limited's working capital management during a ten-year period, from 2004 to 2013. The research was done on the basis of secondary sources. They had taken current ratio, liquid ratio or quick ratio, cash turnover ratio as variables. They applied spearman's Rank correlation co-efficient and T-test for analysis. It was notice that net working capital was unfavourable and harmful for the company due to unfavourable trends. It was concluded that there was no important distinction in the profitability of the enterprise. The

risk element of the firm was more than profitability and return on capital employed which was useless for the future expectation of the Company.

Mr. N. Suresh Babu and Prof. G.V.Chalam (2014) in their study titled as, "Study on the working capital management efficiency in Indian leather industry – An empirical analysis", The study was conducted using secondary data during a 14-year period (1997-1998 to 2010-2011). The name of source from where secondary data was collected as "Industry financial aggregates and ratios" the corporate database of the Centre for monitoring Indian economy and different issues of newspaper, magazines and journals, working paper etc. Return on assets (ROA) was taken as dependent variable and Inventory conversion period (ACP), Average collection period (ACP), Average payment period (APP) and Cash conversion cycle (CCC) were taken as independent variable. Researcher used SPSS 20 software as quantitative data analysis and Karl-pearson's correlation and regression as descriptive method. Profitability has a strong positive association with average collection duration but a negligible positive relationship with inventory conversion period, according to their findings. They further noticed that cash conversion cycle and average payment period had significant adverse relationship with profitability. Working capital management was discovered to have a major impact on company profitability in the Indian leather sector.

Sunil kumar et al. (2014) in their study titled as, "An empirical study on efficiency of working capital management of Indian pharmaceutical industry" has determined the they had taken a 10 Indian pharmaceuticals firms for 15 years spanning from 2000 to 2014. They had taken Gross working capital, Net working capital, Long term financing of working capital, Working capital as variables. They were using certain statistical analysis techniques such as ratio analysis and descriptive statistics analysis. The study was conducted on following companies: aurobindo Pharma ltd., cadila healthcare ltd., cipla ltd., Divis laborator ies ltd., Dr. Reddy's laboratories ltd., Glaxo smithkline pharmaceuticals ltd., glenmark pharmaceuticals ltd., lupin ltd., primal enterprises ltd. and sun pharmaceutical Inds-ltd. It was discovered in this study that the nature of working capital and its concept indicates that "investment in current assets was turned over many times in a year. Investment in current assets such as inventories and book debts was realized during the firms operating cycle which was usually less than year".

Padachi DK and Curole howorth (2014) in their study titled as, "focus on working capital management practices among Mauritian SMEs: survey evidence and empirical analysis", the research was done based on primary data only. Researcher examined 141 samples of the small & medium-sized Mauritian production companies. The study was conducted on following companies: chemical, rubber & plastics, wood & furniture & paper products, metal products food & beverages, leather, and garments. Researcher used ANOVA and t-tests, statistical package for social sciences (SPSS), Mann-whitney, kruskal-wallistest and chi-square test for performing statistical analysis. They had taken binary and ordinal as variables. In this study the sample size of industry group was divided into four sub samples i.e., up to 5 employees as very small, 6 to 20 as small, 21 to 50 as medium and 51 and above as large. They also described some characteristics of companies and working capital management such as size of firm, industry grouping, firms working capital policy, age of business, education level, focus on working capital management routines & cluster analysis and profiles of firm types. They were using a survey based approach in this paper. The findings revealed that the working capital

management of small to medium-sized manufacturing enterprises was not comparable. Researcher has also used exploratory factor analysis. Working capital management routines were identified having three underlying features namely stock review, debtor review and finance review of Mauritian small to medium sized manufacturing firms with the help of exploratory factor analysis. It is concluded that companies with more severe late payment felt a greater need for finance and thus were more financially strained and needed to pay attention to working capital financing.

Repalle vinod (2014) in his study, "Evaluation of working capital management on profitability of Indian automobile Indian industries", examined three top automobile companies over a period of 5 years from 2009 - 2013. Author had used convenient sampling technique for the study. He has taken stock, debtors, cash and bank balance, other current assets, loans and advances and gross working capital, current ratio, inventory conversion period, and debt equity ratio as variables. In this study he also used net profitability ratios. They also displayed the net profit margin, return on capital invested, and earnings per share of the selected vehicle businesses. It was discovered that their costs and long-term funds had an impact on a company's profitability and the influence of profitability on working capital management of the association amongst profitability and liquidity. Instead of utilising a working capital management ratio, it is calculated the efficiency of performance, overall efficiency, utilisation, and working capital management.

Dr. S. kalaiyarasi (2014) in his study titled as, "A study on working capital management of select companies in Indian auto mobile Industry", examined the seven automobile companies over a time period of 10 from 1998-1999 to 2007-2008. The study relied solely on secondary data. In this study the seven auto manufacturing firms which were evaluated are Hero Honda motors Ltd., Tata group, Bajaj Auto group, Mahindra and Mahindra Ltd., Ashok Leyland, Yamaha Motors ltd and Hyundai motor India Ltd. They had taken inventory, receivable, payables and work in progress as variables. This study found a positive relationship between inventory and working capital. It was suggested that the company reduce its expenditures under numerous headings. Firms should also obtain equity capital to pay off long-term and short-term debt. It was decided that the aforementioned proposals should be implemented in order to improve the firm's financial situation.

Nadeem Iqbal et al. (2014) in their study titled as, "The relationship between working capital management and profitability: Evidence from Pakistan" examined the 10 financial reports for one year i.e., 1st January 2009 to 31st December 2009. In this paper, research was done on the basis of secondary data only. They had taken gross operating profit as dependent variable and account receivable, account payable, cash conversion cycle, inventory turnover, debt asset ratio and financial asset ratio as independent variables. It was discovered that the entire manufacturing industry of working capital had no minor influence on the company's profitability. It was discovered that the cash conversion cycle had a detrimental impact on the company's profitability. It was determined that the outcome may be strengthened if the firm managed its working capital in a more methodical manner. It was recommended that companies' profitability could be increased if cash, account receivables and inventories were in a definitive manner.

Jisha Joseph (2014) in the study titled as, "Impact of working capital management on firm's profitability & liquidity: an empirical study of Ashok Leyland ltd." examined the Ashok Leyland firm for ten years i.e., 2004 – 2013. The research was done based on secondary data. The researcher has taken working capital position, current ratio, liquid ratio or quick ratio, cash position ratio, and working capital turnover ratio as variables. The researcher applied spearman's Rank correlation and t-test for analysis. It was discovered that there was no substantial difference between the company's liquidity and profitability. Further, notice that there was a important difference among risk and profitability of the company. It was suggested that the firm should increase the liquidity position and the firm needs to maintain optimum balance among profitability and liquidity of the working capital management.

Darush Yazdanfar and Peter Ohman (2014) in their study tittle, "The impact of cash conversion cycle on firm profitability: an empirical study based on Swedish data." examined 13797 in Swedish firms over four years from 2008 to 2011. The research was done based on secondary sources. They had taken three types of variables which were dependent, independent, and control. Profitability was taken as a dependent variable; cash conversion cycle as an independent variable and firm size, age as a control variable. They used ANOVA, univariate descriptive analysis, correlation analysis, regression model for analysis. They undertook four industries for their study which were Metal, Restaurant, Retail and Wholesale. According to the findings, the cash conversion cycle has a considerable influence on profitability. It was discovered that size, age, and industry all have a significant influence on an enterprise's profitability. According to the findings, increasing the impact of working capital management can enhance profitability.

Dr. Sanjay Rastogi and Dr. Pradeep Saxena (2015) in their study titled as, "Working capital management and profitability in state owned companies: A case analysis of national fertilizers ltd." examined the working capital management and profitability over 12-year period beginning in 2000-01 and ending in 2011-12 The research was done based on secondary data. They were using SPSS software for data analysis. They had taken return on equity as a dependent variable and working capital ratio, acid test ratio, current assets to total assets ratio, current assets to sales ratio, working capital turnover ratio, inventory turnover ratio, and cash turnover ratio as independent variables. It was discovered that size, age, and industry all had a major influence on an enterprise's profitability. The findings indicate that improving the efficiency of working capital management can boost profitability.

Dharmendra S. Mistry (2015) in his study titled as, "Working capital management profitability: A case study of automobile industry in India." examined the twelve automobile firms for ten years from 2004-2005 - 2013-2014. The research was done based on secondary sources. This study considered the four major Segments which were two-wheelers, three-wheelers, passenger vehicles, and commercial vehicles. The study was conducted on following companies: HMT, force, motors, Tata motors, Escorts, Eicher Motors, Mahindra & Mahindra, Ashok Leyland, Maruti Suzuki India, TVS motors company, Hindustan Motors, Bajaj Auto, and Hero Motocorp, etc. The researcher has taken two types of variables i.e., dependent variable and independent variable. The dependent variable was profitability and the independent variables were working capital management. The researcher used correlations coefficients and ANOVA tests for analysis. There was shown to be a favourable association between return on capital and debtors

turnover ratio and inventory turnover ratio. Return on capital as a dependent variable of profitability and current ratio, liquid ratio as an independent variable of working capital management were shown to have a negative association. The results suggest that the current ratio and liquid ratio under sector average have a beneficial impact on profitability performance. The study revealed that working capital management has a major influence on business performance.

Zill-e-Huma and Faiza Maqbool Shah (2015) in their study "Impact of working capital on the profitability a case of Pakistan state oil", examined working capital performance of Pakistan state oil over 10 years from 2005-2014. The research was done based on secondary data. They had taken return on assets and return on equity as dependent variables and cash conversion cycle, current ratio, and current liabilities to total assets as independent variables. According to the study, the current ratio has a negligible link with return on equity but a large positive relationship with return on assets. It was also shown that the negative relationship of debt ratio with the profitability though, cash conversion cycle has an insignificant association with the Pakistan state oil's profitability. Thereby, the study suggests that the Pakistan state oil needed to maintain the current assets and decrease of debt ratio.

Fatemeh Jafari (2015) in his study titled as, "Study the relation between working capital system and profitability in Auto manufacturing industry in India", examined the six auto manufacturing companies during ten years i.e., 2003 to 2012. The research was done with help of secondary sources only. The researcher was using qualitative and quantitative approaches for doing analysis. Index analysis and ratio analysis were also employed. They had taken Inventory turnover ratio, debtor turnover ratio, total assets turnover ratio, and fixed assets turnover ratio as variables. Hero Motocorp and Maruti Suzuki were found to need to increase their average inventory, credit policy, and fixed assets. TVS motor has been observed to have poor sales performance and limited inventory. As a result, it was necessary to enhance fixed assets in order to raise average sales. Along with the aforementioned remarks, Ashok Leyland emphasised on capital constraints. Its findings revealed that Tata Motors and Mahindra & Mahindra need to raise their sales due to heavy inventory, re-evaluate their lending strategy, and spend heavily in fixed assets.

M. Sangeetha (2015) in her study titled as, "Determinants of working capital. A study with special reference to Indian pharmaceutical industry", examined working capital performance of pharmaceutical firms which were listed in Bombay stock exchange during ten years from 2007 to 2013. The sample for the study was selected based on the non-probability sampling method. They had taken current ratio, quick ratio, account receivable days, current asset turnover ratio, working capital turnover ratio, inventory turnover ratio, current liabilities to total assets, and natural log on sales as independent variables and return on total asset as a dependent variable. In this study, the result indicated that the working capital component like current ratio and accounts receivable days had insignificantly negatively correlated with the company's profitability. It was observed that the current asset turnover ratio, capital turnover ratio, sales, current asset, inventory in days, and inventory turnover ratio had positively correlated with the profitability of the company.

Joseph Ugochukwu Madugba and Amah Kalu Ogbonnaya (2016) in their study titled as, "Working capital management and financial performance evidence from manufacturing companies in Nigeria" examined that the influence of working capital management performance of manufacturing firms in Nigeria. They had taken earnings per share and return on capital employed as dependent variables and average payment period and average collection period as independent variables. The study's findings indicate that working capital management has an impact on the financial performance of Nigerian manufacturing firms. It was recommended that the management of production companies in Nigeria should reveal cautiousness in managing inventory. Investors at the minimum have to certify that their inventory would not be below least stock level. Further, recommended that the period at which consumers make payments to the firm for commodities purchase should be increased. Efficiency and effectiveness of working capital management should be maintained by firms through professionals hired in a systematic way. Lastly, it was necessary to ensure that the price of the stock should not be affected adversely.

Tanveer Bagh et al. (2016) in their study titled as, "The impact of working capital management on firms financial performance: evidence from Pakistan" examined 50 firms during ten years from 2005 - 2014. They were using three types of variables which were independent, dependent, and control variables in this study. Average collection period, average payment period, inventory turnover, and cash conversion cycle as independent variables and firm performance, return on assets, return on equity, and earning per share as dependent variables. Control variables used in the study were firm size, Leverage, and Age, etc. They were using multiple regressions for analyzing the data. Average collection period, Average payment period, inventory turnover and cash conversion cycle were considered independent variables while firm performance, Return on Assets, Return on Equity and Earning per Share as dependent variables. Control variables used in study were firm size, Leverage and Age etc. They used multiple regressions for analysing the data. The average collection duration had a considerably favourable influence on Return on Assets, whereas the average payment period, inventory turnover, and cash conversion cycle had a significantly negative effect on Return on Assets. Average Payment Period was found to have a considerable negative impact on Return on Equity.

Hakim Lyngstadaas and Terje Berg (2016) in their study titled as, "Working capital management evidence from Norway" examined 21075 companies' over four years from 2010 - 2013. The research was done based on secondary sources. They had taken three types of variables which were dependent variable, independent variables, and control variables; Return on assets as a dependent variable, number of days of inventory, number of days of account receivable, average rate of value added tax, number of days account payable and cash conversion cycle as independent variables; and size of the firm, growth in sales, leverage, current asset ratio, and current liabilities ratio as control variables. They were applied panel data regressions for analysis. It was observed that, the adverse association between profitability and the inventory, cash conversion cycle, account receivable, and account payable. It was noticed that, significant and a favourable relationship exists between profitability and size, growth, GDPR, current assets ratio, current liabilities ratio. Further, noticed that, significant adverse association between debt and profitability.

Syed Jamal Abdul Nasir bin Syed Mohamad et al. (2016) in their study "A study on relationship between inventory management and company performance: A case study of textile chain store", examined inventory management affects the company's performance over a period of five years (2008 to 2012). They used both qualitative and quantitative methods for analysis. . Research was done on the based on primary and secondary data. A source of primary data was obtained from the interview and sources of secondary data were obtained from the textbook, journal, report, and article. Researcher calculated ratio analysis for the primary data. They used two types of variables which were dependent and independent. Inventory management was taken as an independent variable and performance was taken as a dependent variable. In this study, statistical data was used as quantitative research. They used ratio analysis, descriptive statistics, correlation analysis, and hypothesis testing were measured as quantitative results. It was observed that the problems the company were facing, included no accurate records; Additionally, the company failed due to ineffectual management of the scattered inventory. The researcher recommended the company should maintain the record of inventory by the worker. The inventory should be classified into low, medium, high value and firm must use sales force composite technique, to forecast the demand. It was also noticed that the company should be able improve their performance in terms of profit, inventory management practice by decreasing inventory cost and maximum utilization of resources.

Mrs. Poonam Gautam Sharma and Ms. Risham preet kaur (2016) in their study titled as, "Working capital management and its impact on profitability: A case study of Bharti Airtel Telecom company" studied of Bharti Airtel firm for 8 years i.e., 2007-2008 to 2014-2015. The research was done on the basis of secondary data. Data were obtained from secondary sources such as the Capitaline database and money control.com website. They had taken current ratio, quick ratio, absolute liquid ratio, inventory turnover ratio (in times), inventory turnover (in days), debtors turnover ratio (in time days) working capital turnover (days) and current assets turnover ratio as independent variables and net profit margin, the gross profit margin as dependent variables. It was concluded that the performance measured had shown positive and significant trend growth rate except for cash and bank balance. The result also indicated that the current ratio was unsatisfactory whereas operating profit ratio, debtors turnover ration, gross profit ratio and quick ratio where found to be satisfactory. The working capital turnover ratio was found to be negative for the years 2012 and 2014. It was also determined that profitability has a negative association with liquidity.

Syed Noorul Shajar and Saleem Akhtar Farooqi (2016) in their study titled as, "Impact of working capital management on the profitability of automobile study of selected automobile companies" examined the three automobile firms during a decade i.e. 2005 to 2014. In this study, only one variable was dependent i.e., return on capital employed, and the rest were independent variables like current ratio, inventory turnover ratio, and debtor turnover ratio. The result indicated that all the dependent variables were having a significant positive association with profitability. Also, it was identified that the remaining independent variables were positive but less correlated with profitability. It was found that only one variable had a very low ratio i.e. rate of inventory turnover. Further found that debtor's turnover ratio was positive in Maruti Suzuki India Ltd. It was also found that debtors turnover ratio was less positively correlated with Tata motors ltd, and Mahindra Limited. Moreover, the current ratio was positive with

return on capital employed of Tata motors companies. It was also significantly correlated with Maruti Suzuki India Limited and Mahindra ltd but it was having an insignificant relation with the profitability of particular firms.

Dharmaraj Arumugam et al. (2016) in their study titled as, "Factor determining profitability in Indian automobile industry", examined sixteen firms in the Indian automobile industry for fifteen years i.e., 2000 to 2014. The study was conducted using a secondary source. The data were collected from the Centre for Monitoring the Indian economy and capital line plus. They had taken current ratio, quick ratio, inventory to total assets ratio, quick assets to total assets ratio, a current asset to total assets ratio, working capital to total asset ratio, return on equity, return on asset, return on capital employed, operating ratio, net income to total debt ratio, inventory turnover ratio, debtors turnover ratio, fixed assets turnover ratio, working capital turnover ratio, total debt to total assets ratio, net fixed assets to equity ratio, debt-equity ratio, total assets to equity ratio and long term debt-equity ratio as independent variables and return on sales as dependent variables. It was found that the profitability of automobile firms was more dependent on operation ratio.

Inna (2016) in her studied titled as, "Comparative analyses of working capital management in automobile industry of India", examined working capital management, in particular, five two-wheeler companies for 5 years with the span of 2011 to 2015. The research was done based on secondary data only. In this study, descriptive research design or expressive was used. They had taken current assets, current liabilities, gross working capital, and networking capital for analysis of working capital and current ratio, quick ratio, and debtor's turnover ratio as variables. It was found that four two-wheeler companies were working with insignificant working capital. In this study, the result showed that the inventory turnover ratio was higher for all firms. It has been concluded that adverse working capital would continue to work for the two-wheeler automobile companies. The firms should use the inventory, payables and cash flow data for analysis of current scenario and better implementation.

Dr Bilal Aziz and Muhammad Shahazad Aslam (2016) in their study titled as, "Impact of working capital & firm size on firm performance: An evidence from BRIC automobile industry", examined 25 companies of BRIC automobile industry. They had taken sales log, current ratio, profitability, Earning before interest and tax, degree of an operating lease, return on asset, return on equity, degree of financial lease, firm size, and liquidity ratio as a variable. They used descriptive statistics, regression analysis, chow test analysis, Dickey filler test analysis, and Karl Pearson's coefficient correlations analysis for analyzing the data. It was discovered that there was a negative association between the firms' growth, performance, and operational lease. They had a detrimental influence on the enterprise's performance as well as its earnings. It was concluded that companies' performance and growth are directly related to the companies' size so it should not be ignored.

Dr. Anil K. bhatt and Nirmala Shorotriya (2016) in their study titled as, "Measuring working capital trends in Indian steel Industry", examined ten firms of steel industry over five years from 2009-10 to 2013-14. The information was gathered from CMIE, stock markets, securities companies, articles, and journals. The researcher was done based on secondary sources. The data was analyzed by using SPSS-19 software. They had taken net profit and working capital as

variables. They were using autocorrelation and chi-square analysis. In this study, it was noticed that previous years' working capital, had a significant impact on Tata limited, SAIL, RINL and Jindal steel limited. It also showed that last years' working capital has had an insignificant impact on Visa steel, JSW steel, Welspun Corporation Bhushan steel, electric steel, and Adhunik industries.

Xose H. Vazquez et al. (2016) in their study titled as, "Watch the working capital of tier-two suppliers: a financial perspective of supply chain collaboration in the automotive industry." examined 116 Spanish automotive element industry for nine years i.e. 2001 - 2009. They had taken operational efficiency as a variable. They applied ANOVA and panel data for analysis. It was found that tier-one and tier-two firms had a salient difference in their working capital. Researchers' approach might help tier-one firms to raise their efficiency in the short run but it could also reduce the plants' manufacturing ability across the entire value chain.

Sherry Bulin et al. (2016) in their study titled as, "Impact of working capital management on firm's profitability." examine 50 firms listed on the Kuala Lumpur stock exchange over a time period of five years from 2011-2015. The research was done based on secondary data. They had taken inventory turnover ratio, cash conversion cycle, collection period, and working capital turnover ratio as an independent variable. It was noticed that there was insignificant relation among inventory turnover ratio, working capital turnover ratio, and collection period on return on asset. Further notice that, there was a significant association amongst the cash conversion cycle and return on assets.

R. Sivaranjani and Mrs. B. Kishori (2016) in their study titled as, "A comparative analysis of working capital management among Top 5 NSE listed Indian steel companies." examined 5 steel firms listed on the national stock exchange over a time period of five years with the span of 2010-11 to 2014-15. The research was done based on secondary data. They had taken return on assets as a dependent variable and operating cycle as a constant variable. It was noticed that there was a significantly positive association amongst return on assets and operating cycle. In this study, the analysis of the data showed the efficiency of the working capital management, which could be used to boost the financial performance of the firm. It was suggested, that firms need to boost effective hold of payables, receivables, and inventory.

Priyank Sharma (2016) in his study titled as, "Impact of working capital management on firm's profitability & liquidity: An empirical study of Tata motors Pvt. Ltd." examined the performance of working capital management in Tata motors Pvt. Ltd. for decade i.e., 2003 - 2012. The research was done based on secondary sources. The researcher had taken the current ratio, quick ratio, level of cash to total assets, and working capital turnover ratio as a variable. The researcher applied Karl Person's correlation and T-test for analysis. It was noticed that there was a significant difference amongst profitability and liquidity of the company. It was further noticed that there was a significant association amongst profitability and risk of the enterprise. It was suggested that the firm needs to improve its liquidity position and generate higher returns from its assets.

Shahid Husain, Saad Alnefaee (2016) in their study titled as, "The effects of working capital management on profitability of firm" Evidence from agriculture and food Industry of kingdom of Saudi Arabia" examined three firms for six years i.e., 2009 - 2014. The research was done

based on secondary sources. They had taken two types of variables i.e., dependent variable and independent variable. Here, the dependent variable comprised of gross operating profit and independent variable included cash conversion cycle, average collection period, inventory turnover in days, and average payment period. It was revealed that working capital management had no discernible influence on profitability. According to the findings, gross operational profitability has a adverse association with average payment period, inventory turnover in days, and cash conversion cycle. It was also discovered that there was a link between the average collecting duration and gross operational profitability.

Hien Tran et al. (2017) in their study titled as, "How does working capital management affect the profitability of Vietnamese small- and medium- sized enterprises?" examined the 200 firms for three years i.e., 2010-2012 has been taken for analysis. The research was done based on secondary sources. They had taken three types of variables which were dependent variables, independent variables, and control variables. Gross operating income as the dependent variable; and accounts payable and cash conversion cycle as independent variables and firm size, sale growth, and financial debt as control variables. The researcher was using SPSS software for data analysis. It was noticed that a significant adverse association between gross operating income and the cash conversion cycle account receivable and account inventories. It was recommended that small and medium-sized owners or managers could improve their company's profitability by decreasing independent variables. Further, it was suggested that small and medium-size could have high profitability as long as the optimal level was accomplished.

M.S. Prathibha Raj and Dr. G. Dinakar (2017) in their study titled as, "Analysis of selected automobile companies in Indian by using Altamin Z score", examined 8 automobile firms listed on the Bombay stock exchange during two years from 2014-2015. The research was done based on secondary sources. The study was conducted on following companies; Eicher Motors, Ashok Leyland, Maruti Suzuki, Bajaj Auto, Hindustan Motors, Atul auto, Hero Motor Corporation, and Force Motors. They had taken total assets, working capital, retained earnings, EBIT, the book value of total debt, market value, and sales as variables. It was noticed that few manufacturers had continued to progress in India, for many years across many vehicle segments.

H. Kent Baker et al. (2017) in their study titled as, "Working capital management practices in India: Survey evidence." examined 1582 companies listed on the National stock exchange. The research was done based on the primary data. They had been collected data from the prowess IQ database. They had taken return on investment, net working capital, cash conversion cycle, current ratio, working capital turnover, benchmarks against competitors, and a weighted average cost of capital as a variable. It was indicated that most of the companies go along with a moderate approach.

Janina Jedzzejczak-Gas (2017) in the study titled as, "Net working capital management strategies in the construction enterprises listed on the new connect market" examined 12 companies listed on the new connect stock market over a time period of six years from 2009-2014. The research was done based on secondary sources. Researchers had taken stocks turnover, receivables turnover, and share of current liabilities in financing current assets as indicators. The study type was descriptive research. It was observed that moderate strategies

were dominating in the long term, and in short-term liability management, aggressive strategies were dominating. Also, moderate aggressive strategies and aggressive strategies were the most repetitive strategies as a percentage of the overall strategies, which were applied in current assets and liabilities management. Also, such companies were sharing short-term liabilities comparatively more for generating capital at low-cost. Such practices depreciate liquidity, but still could stay stable at the optimal level.

C.A. (Dr.) Pramod Kumar Pandey (2017) in his study titled as, "Effect of negative working capital on stock prices – A comparative case study of Maruti Suzuki India limited and Tata Motors limited", examined two firms for five years i.e., 2011-12 to 2015-16. They had taken net working capital, earning per share, current liabilities, and inventories as variables. The findings of the study were: Indian automobile industry suffered due to a longer operating cycle, firms were forced to maintain inflated stock by the volatile global market. Liquidity crisis also inflated due to high competition and low demand, due to which time duration of collecting receivables was increased. High investment in current assets could help in reducing the cost of funds and therefore improve the earning per share. Cost of borrowings also increased due to rising NPAs in Indian banks by production firms. Industries in India especially referred to working capital loan segment, as the reason behind making lump sum short term investment which was a requirement for higher working capital. The study concluded that the Automobile industry should decrease their operating cycle period. Efficient inventory management method should be incorporated to decrease investment in inventory. Excess diversification should be decreased, efficient receivable management should be implemented. Financing high working capital was required and larger funds should be secured from foreign sources. Negative working capital proved to be better for a short period only.

Ruqsana Anjum (2017) in her study titled as, "Impact of working capital management on automobile firm's profitability", Over a ten-year period from 2007 to 2016, 23 vehicle enterprises listed on the Bombay stock market were examined. The data was collected from prowess IQ database of CMIE and Capitaline database for the period ranging from 2007-2016. She has considered components i.e., return on assets, net operating profit, gross operating profit, receivables conversion period, raw material conversion period, work in progress conversion period, finished goods conversion period, inventory conversion period, payment deferral period, cash conversion cycle, sales growth, size of the firm represented by sales, current ratio and quick ratio. It was discovered that the receivables conversion period and the cash conversion duration had a statistically significant adverse association with profitability. It was observed that the component of the inventory conversion period has a favourable impact on profitability. Further observed that working capital management was more concerned in operational terms rather than being strategic for financial executives.

Dr. Yellaswamy Ambati (2017) in his study titled as, "Working capital management in Indian paper industry", examined the sirpur paper mills limited for 5 years i.e., 2007-2008 to 2011-2012. The research was done based on secondary sources. The researcher had taken inventories, sundry debtors, cash & bank balance, loans & advances, other current assets, and gross working capital as a variable. Data were analyzed based on percentages, averages, trends, and coefficients of correlation were used. In the conclusion of the study, the major findings were: current assets included sundry debtors as the most important element which lied between the

range of 26.41% (2007-08) to 38.34% (2011-12). A firm's liquidity position was impacted hugely by an aggressive working capital financing policy. Net working capital of the firm was observed fluctuating between the ranges of -677.08 lakhs (2007-08) to 3025.25 lakhs (2009-10). Current ratio indicated an unfavourable liquidity position and it lied between the range of 0.90 to 1.30 and the average was 1.07 times. Quick ratio also indicated an unsatisfactory liquidity position which lied between 0.64 to 0.95 and average was 0.72 times. There was the inclination that the aggressive working capital financing represented an adverse liquidity position of the firm. The net working capital turnover ratio was pessimistic for 3 out of 5 years which indicated an unnecessary usage of short term sources. The debtors turnover ratio helps in recognizing the efficiency of the firm from debtors point of view and organization was able to generate miniscule sales despite having a liberal credit policy. The cash turnover ratio of the firm lied between the range of 29.48 and 74.60 for the entire period of study. The inventory turnover ratio describes the efficient management of the inventory of a firm.

Claudiu BOTOC et al. (2017) in their study titled as, "Is profitability driven by working capital management? Evidence for high-growth firms from emerging Europe", examined 13 countries listed of CESEE over a time period of ten years from 2006-2015. The research was done based on secondary sources. They had taken return on assets, working capital ratio, debt ratio, sales growth ratio, cash and cash equivalents to total assets ratio, financial system deposits to growth domestic product, Boone Indicator, and a dummy for year crisis. They used descriptive analysis, correlation matrix, and regression analysis. It was discovered that there was an inverted U-shape association amongst company profitability and working capital management. The outcome indicates that in order to manage the best amount of working capital management, the company's profitability should be maximised. It was established that the company applies numerous approaches, sub-samples, working capital management components, and profitability components to increase its efficiency.

Akshay Seedoyal et al. (2017) in their study titled as, "Financial management in Mauritian SMES", study the responses of 125 candidates, and 96 candidates from the sample of 125 gave a positive response. They used a stratified random sampling method for selecting the sample. They used chi-squared test analysis for analyzing the data. The study concluded that on average, Mauritian SMEs had poor knowledge of financial management. As a result, it was proved to be a limitation in managing the business, and business activity was very disturbed.

Syed Noorul Shajar (2017) in his study titled as, "Relationship between working capital management and profitability of automobile companies in India: A paradigm shift towards economic strengthening", examined 26 automobile companies over 10 years i.e., 2006 to 2016. They had taken three types of variables i.e., explanatory variable, control variable, and explain variable. Researcher had taken accounts receivables, accounts payables, inventory and cash conversion cycle as explanatory variables; firm size, leverage & sales growth as control variable; and return on assets ratio, Tobin's Q as an explained variable. The findings discovered a negative association amongst account receivable, account payable, inventory, and the cash conversion cycle and profitability. There was shown to be a favourable association between leverage and growth and profitability. Furthermore, a substantial negative association was discovered between payables, receivables, inventories, cash conversion cycle, and the profitability of return on assets and TOBIN-Q value of car enterprises in India.

Arpita Naskar and Prasanta Guha (2017) in their study titled as, "Working capital management and firm profitability: A study of listed companies in India", examined the 53 firms during a five years (2011 - 2015). The research was done based on secondary data. They had taken receivable days, inventory days, payables days, cash conversion cycle, quick ratio, current ratio, and firm size as independent variables and earnings before interest and tax, return on assets and return on equity as dependent variables. It was concluded that receivable, payable, inventory holding period, Quick ratio, and current ratio had a strong impact on profitability. Further found that the firm size has a positive effect on earnings before interest and tax but a adverse influence on return on assets and return on equity.

Dimple (2017) in her study titled as, "Working capital management of auto component industry", examined five auto components companies over 4 years i.e., 2011-2012 to 2014-2015. The study was conducted on following company: spark minda, JMT auto limited, jamna auto industries limited, Rico, and automotive respectively. The researcher used the ratio analysis technique. The researcher had taken current ratio, quick ratio, absolute liquid ratio, inventory turnover ratio, debtors turnover ratio as variables. She was using ratio analysis for analyzing the data. The research was done based on secondary data only. The researcher suggested that firms must maintain balance amongst external and internal sources of capital: they should also increase cash generating sources. Further recommended that all the firms need to reduce operating expenses and utilize their internal sources. It was also found that firms have to maintain cash to pay their current liabilities. Efficient management of current liabilities would improve the operational efficiency of the firms. Fixed capital at optimal levels was a mandatory requirement for efficient working capital management.

P. Kalaivani and Dr. K. Jothi (2017) in their study titled as, "A study on working capital analysis of selected auto mobile manufacturing companies in India", examined eight firms over ten years i.e., 2005-2016. The research was done based on secondary data. They had taken net working capital and net sales as variables. They used 'T'-test analysis for analyzing the study. The study was conducted on following firm: fiat, ford, gen motors, Hindustan Motors, Honda, Hyundai motors, Mahindra, and Toyota. It was recommended that the automobile companies regularly increase the automotive centres in various parts of India. Further, recommended that the government should take requisite steps to decrease the tariff and duties for import of automobile inputs. They also need to clarify the customs regulations, arrange economic zones in all cities, and introduce credit facility at low-interest rates to the borrowers through financial institutions and commercial banks. Lastly, the government need to boost the export opportunities of automobiles to make the industry attractive in future and fulfill the goal of becoming a developed nation. It was concluded that all the automotive sectors started in the previous years were consistently increasing, with the help of government and a special focus on exports operations.

M. Eswarareddy (2017) in his study "An empirical study on working capital management and profitability." examined ten firms for 5 years i.e., 2010-11 to 2014-2015. Operating profitability was used as a dependent variable; average collection period, accounts payable, inventory turnover in days and the cash conversion cycle was used as independent variables. The findings of this study revealed a positive association amongst profitability and account payable, as well as a negative relationship amongst profitability and account receivables. It was suggested that

the company's executives create value for its shareholders by minimising account receivables. It was determined that if businesses maintained their working capital in a methodical manner, their profitability could be raised and reinforced. It was concluded that profitability could enhance if companies maintain cash, inventories, accounts payable, and account receivables in a more efficient way.

P. Kalaivani and Dr. K. Jothi (2017) in their study titled as, "Impact of working capital management on profitability of the select car manufacturing companies in India", studied eight Indian Automobile companies for 10 years from 2007 to 2016. They used descriptive and analytical studies as their research design. They used regression, average, average annual growth rate, compound annual growth rate, percentage, and correlation coefficient analysis for analyzing the data. In this study, they had taken two types of variables i.e., dependent and independent. Debtor turnover ratio, inventory turnover ratio, current asset turnover ratio, and fixed asset turnover ratio as independent variables and return on asset as a dependent variable. It was discovered that the businesses' effectiveness of working capital management affected the debtor turnover ratio, inventory turnover ratio, and current asset turnover ratio. It was concluded that the firms which provided stable employment opportunities as well as career growth to employees stood a better chance of becoming more efficient in the long run.

Basman Al Dalayear (2017), in his study titled as, "Working capital management and profitability of real Estate industry in Jordan: An empirical study", studied for fifteen years i.e., 2000 to 2015. In this study, only one variable was dependent which was the return on capital employed and the other were independent variables like current ratio, inventory turnover ratio, and Debtors turnover ratio. The study was conducted on following companies: Jordan Decapolis properties, real estate development of Jordan, and Al-tajamouat for touristic projects co plc. It was discovered that working capital management has a major impact on the profitability of a certain real estate corporation. The inventory turnover ratio was determined to transform the inventory into sales, it was concluded. However this ratio either improved or created a problem for the firms in the long term. Further concluded that the current ratio was significantly associated with return on capital employed of Al-tajmouat for touristic project and the remaining two firms were positively correlated at a moderate level.

Shubham Bansal and Ekta Arora (2017) in their study titled as, "Impact of working capital management on profitability with special reference to ITC Company in India", examined the Indian ITC firm over 5 years i.e., 2011-12 to 2015-16. They had taken return on capital employed as dependent variable and inventory turnover ratio, current ratio, and working capital turnover ratio as independent variables. In this study, results indicated that return on capital employed had an adverse association with inventory turnover ratio. Also, current asset had a positive impact on the working capital turnover ratio. Furthermore, it was noticed that there was insignificant relation between current ratio and working capital turnover ratio. Similarly, inventory turnover ratio had an insignificant relationship with return on capital employed. Due to this, null hypotheses were accepted.

Dr. Jayaramaih N and Dr. P. Amalanathan (2017) in their study titled as, "Effect of working capital management on selected FMCG companies in India", examined the five FMCG companies for fifteen years i.e., 2002-03 to 2015-16. They had taken three types of variables

which were dependent, independent, and control. In this study, only one variable was dependent i.e., return on assets. Acid test ratio or quick ratio, current assets to sales ratio, and current ratio were taken as independent variables and Debt equity ratio, growth, and size as control variables. It was found that the working capital requirements of selected firms were limited. Further the study indicated that the firms involved in this research process were having limited funds. It was noticed that there was a positive association among return on assets and acid test ratio, current assets to total assets ratio, and current ratio. The findings revealed that the size of the firm, leverage, and growth all had a substantial impact on the company's profitability.

Mihir Dash (2018) in his study titled as, "Working capital management and profitability of construction sector in Bangalore." examined the effect of working capital management on profitability of five major builders based in Bangalore for a 5 years from 2006 - 2011. The study was conducted on following builders in Bangalore: Brigade developers, Larsen & Tourbo, Puravankara group, and Sobha developers. He had taken three types of variables viz. dependent, independent, and control. The researcher had taken net operating profit as a dependent variable; current assets, current liabilities, total loans, account receivable, account payable, inventory, average collection period, average payment period, average inventory conversion period, cash conversion cycle as an independent variable, and size of the firm as a control variable. The researcher applied regression analysis for analyzing data. It was observed that the current assets and current liabilities had an effect on profitability in construction firms. It was discovered that the average collection duration had a considerable favourable influence on profitability. Also, there was a significantly positive impact of account payables on profitability.

Ms. Vasvi Pravallika, Dr K.S. Sekhara Rao (2018) in their study titled as, "A critical study on impact of working capital management on profitability of manufacturing industry in India" examined working capital performance of five companies over a period of 10 years with the span of 2006 to 2016. The study was conducted on following companies: Asian, Berger, Shalimar, Kansai Nerolac, Jenson, and Nicholson. The study was done based on secondary data. They had taken two types of variables for the study i.e., dependent variable and independent variable. They had taken debtors turnover ratio, current ratio, liquid ratio, average payment period, working capital turnover ratio, and inventory conversion period as independent variables and earnings before interest and tax as a dependent variable. They used Karl Pearson coefficient of correlation analysis for analyzing the data. In this study, all of the manufacturing businesses' working capital management had no funds for investment, which would have a substantial influence on their profitability. It was discovered that the selected company's management may increase shareholder value by reducing the conversion of inventories and accounts receivable into cash. It was also shown that there was a negative association between return on assets and average collection duration, average receivable days, and a positive correlation between return on assets and inventory kept by the business.

Hadri Kusama and Ahmad Dhiyaullatief Bachtiar (2018) in their study titled as, "Working capital management and corporate performance: evidence from Indonesia", examine the performance for fifty-four firms listed on the Indonesian stock exchange over a time period of 5 years from 2010 to 2014. They used regression, coefficient, descriptive data, and panel data analysis for analyzing data. They had taken cash conversion cycle, inventory turnover ratio, average payment period, current ratio, net working capital turnover ratio, average collection

period, leverage/debt ratio, size of sales and return on asset as variables. They used adjusted R-squared as to measure the relationship amongst working capital and firm performance. It was found that the company's performance had significantly improved by working capital management. Further found that working capital management calculated by inventory turnover was a great model in describing company's performance. It disclosed practical implications.

Podile Venkateswararao et al. (2018) in their study titled as, "Working capital management in small enterprise – A case study of Power Oxides Pvt. Ltd.", examined working capital management over ten years from 2006-07 to 2015-16. They had taken average collection period, debtors turnover ratio, inventory turnover ratio, cash turnover ratio, net working capital turnover ratio, gross working capital turnover ratio, quick ratio, super quick ratio, and current ratio as variables. They used chi-square test analysis for analyzing the data. It was concluded by this study that there were huge fluctuations in the average collection period, cash turnover ratio, inventory turnover ratio, and debtors turnover ratio which were earmarked for this study. In this study, results showed that two components which had very poor performance were collection of debts and cash utilization. Further concluded that networking capital turnover ratio, gross working turnover ratio, quick ratio, current ratio, super quick ratio, and gross working capital to total assets ratio were identified for the purpose of this study.

Hassan Subhi Al-Abass (2018) in his study titled as, "Effect of working capital management on profitability of cement sector listed companies", studied the performance of the working capital management of 30 manufacturing concerns spread over three sectors for sixteen years from 2001 - 2006. There had taken two types of variables i.e., dependent and independent. They had taken return on assets and return on equity as dependent variables and receivable, payable, inventory and cash conversion cycle as independent variables. The study was conducted on following companies: cement industry, textile industry, automobile industry, personal care products sectors, fertilizer sectors and food sector. It was found that the independent component was affected to a large extent by the dependent component.

R. Uma Devi (2018) in her study titled as, "Impact of working capital management on the profitability of the company- A case study of Maruti Suzuki India limited" examined the performance of working capital position for five years from 2012-13 - 2016-17. The research was done based on secondary data only. The researcher had taken current assets, current liabilities working capital, working capital ratio, stock turnover ratio, debtors turnover ratio, operating margin, gross profit margin, and net profit margin as variables. It was discovered that there was a adverse association amongst the firm's working capital and profitability. The results showed that the impact of the inventory management process in cases where less amount of cash was required to finance the requisition of new stocks. It showed that the firm was able to sustain a quick and effective recovery process. It was also concluded that the profitability of the company was increasing significantly.

Viswanath M S et al. (2018) in their study titled as, "Analysis and optimization of working capital management in construction industry", examined the eleven sectors for 23 years from 1994-2017. The study was conducted on following companies: L & T limited, construction, agriculture, automobile, cement, chemicals, industrial equipment, mining, petrochemicals, real estate, and textiles. They had taken sales outstanding, payables outstanding, inventory

outstanding, cash conversion cycle, current ratio, quick ratio, fixed financial assets ratio, firm size and return on capital employed as variables. It was recommended that by improving credit policies with suppliers will help to raise cash resources and also facilitate quick collection of receivables. This would help to release cash from the working capital cycle at a much faster pace. Further, recommended that an adverse cash conversion cycle should be maintained to generate revenue from clients. Also even the companies have to pay their suppliers without unnecessary delay which will help prolonging goodwill.

Parul Bhatia and Priya Gupta (2018) in their study titled as, "Impact of working capital efficiency on firms' profitability: A study on manufacturing sector in India" examine 141 firms listed on the S&P Bombay stock exchange over eight years from 2009 to 2016. They had taken two types of variable i.e., dependent and independent. Net profit margin was taken as dependent variable and cash conversion cycle as independent variable. It was noticed that in these firms' cash conversion cycle had significant impact on net profit margin of the company.

Nufazil Altaf and Farooq Ahmad Shah (2018) in their study titled as, "How does working capital management affect the profitability of Indian companies?" examined the 437 non-financial Indian firms over ten years from 2007-2016. The research was done based on secondary sources. They had taken three types of variables which were dependent, independent, and control. Return on assets and gross operating profit as the dependent variable; cash conversion cycle, account receivable period, inventory conversion period, and account payable period as independent variables and firm size, growth, asset tangibility, firm age, leverage, current ratio, and economic growth as control variables. The findings demonstrate that the relationship between working capital proficiency and firm profitability was influenced by a variety of factors. It was noticed that there was an inverted U-shape association amongst variables of cash conversion cycle and company's profitability. The study concluded that the company's gains were high at the lower level of the cash conversion cycle whereas the gains were significantly lower at higher level of cash conversion. The outcome demonstrates that the cash conversion period has a negative influence on profitability within 63 days.

Tiago Cruz Goncalves et al. (2018) in their study titled as, "The impact of working capital management on firm profitability in different economic cycle: Evidence from the United Kingdom" examined the UK unlisted firm over nine years from 2006 to 2014. They had taken cash conversion cycle, return on assets, and gross operating income as components. The researcher used descriptive statistics analysis. It was noticed statistically that there was a significant negative association between cash conversion cycle and return on assets as well as gross operating income. It was recommended that the companies could raise profitability by decreasing the range of their cash conversion cycle. It was concluded that effective working capital management was more significant through economic downturn.

Ajaya Kumar Panda and Swagatika Nanda (2018) in their study titled as, "Working capital financing and corporate profitability of Indian manufacturing firms." examined the performance of working capital management and profitability of 1211 manufacturing companies over seventeen years from 2000 to 2016. They had taken return on total assets, short-term bank borrowing, long-term investment, working capital requirements, sales, total assets, liquidity, debt ratio, and markup as variables. The study recommended that various industries of Indian

manufacturing sectors should work on profitability and working capital financing. It was noticed that the companies which were into the textile, metal, and machinery sectors indicated raising debt investment for satiating their working capital requirements which was imperative to increase their gains.

Pawel Mielcazz et al. (2018) in their study titled as, "Working capital management through the business cycle: evidence from the corporate sector in Poland." examined 719 polish firms listed on the Warsaw stock exchange over nineteen years from 1997 - 2014. They had collected data from the Notoria database. They had taken size, growth opportunities, leverage ratio, Investment, operating cash flow, dividend pay-out, external finance, and sales and sales growth as variables. They used regression models for analysis. The study's conclusions highlighted the fact that companies, whether it was a profit-making company, or an underperforming firm, practiced reserving working capital at times of recession. This reserved working capital, which was usually in the form of cash, worked as a precautionary measure at times of economic turmoil.

N Sumathi (2018) in his/her study titled as, "Comparative study of working capital management on profitability of JSW steel ltd and Tata steel ltd", Over a ten-year period, from 2005-06 to 2014-15, two steel corporations listed on the Bombay stock market were studied. The study relied solely on secondary data. The study was conducted on following companies: JSW steel ltd and Tata steel ltd. The researcher had taken current ratio, quick ratio, absolute liquidity ratio or cash position ratio, and net working capital ratio as variables. The author had used convenience sampling method. It was observed that both companies needed to take steps, to upgrade short-term solvency issues. It was concluded that each firm needed to decrease its current liabilities and use its idle cash as well as bank balance. From a manufacturing viewpoint, firms having higher proportion of current liabilities in comparison to current assets tend to be in a precarious position.

Pambayun Kinasih Yekti NASTITI et al. (2019), in their study titled as, "Working capital management and its influence on profitability and sustainable growth." examined 136 manufacturing companies listed on the Indonesian stock exchange over a period of eight from 2010 - 2017. The research was done based on secondary sources. Sustainable growth had taken as the dependent variable; working capital management and profitability as independent variables; and firm size, sales growth, leverage, and total assets turnover as control variables. It was recommended that companies be required to maintain their working capital to raise their profit, which would lead to sustainable growth. It was discovered that working capital management has a significant influence on a company's profitability. The study suggested that companies might avoid putting a major chunk of their finance in inventories, marketable securities, receivables, and cash. The result shows that consideration of financing cost and holding cost of assets should be managed properly for sustainable growth and profitability.

Ramneek Kaur and Dr. Sunita Sukhija (2019) in their study titled as, "Trends in Gross and Net working capital in Auto industry in India." examine the five automobile firms over a period of 15 years from 2002-03 to 2016-17. The research was done based on secondary sources. They considered gross working capital and net working capital for the purpose of their study. Data was analysed based on coefficient of variation and compound Growth rate were used. It was

concluded that growth was seen in cases where working capital was managed efficiently as per the data from automobile companies. It was further concluded that networking capital registered a significant uptick in the case of only two automobile companies i.e., Mahindra and Mahindra and Bajaj autos. For the rest of the companies, the networking capital didn't indicate a significant increase or decrease.

Dr. Aniruddha das and Debasree dutta (2019) in their study titled as, "Working capital management and cash flow analysis of selected Indian companies in automobile industry." examined three firms in the automobile industry listed on NSE firms over a period of five years i.e., 2012-13 to 2017-18. The research was done based on secondary sources. They had taken current ratio, quick ratio, inventory turnover ratio, debtor's turnover ratio, and asset turnover ratio as variables. They used ratio analysis for analyzing the data. It was found that Maruti Suzuki India ltd. had constantly increased their debtor's turnover ratio while the rest two firms' debtor's turnover ratio had decreased. It was recommended that Tata Motors ltd need to decrease the inventory turnover days and account receivables. It was noticed that operating activities for each firm was positive which describes the capability of the business.

Mahdi Salehi et al. (2019) in their study titled as, "Association between the availability of financial resources and working capital management with stock surplus return in Iran." examined 91 companies listed on the Tehran stock exchange over eight years from 2009 to 2016. The research was done based on secondary sources. They had taken three types of variables i.e., dependent variable, independent variable, and control variable. The surplus stock return as the dependent variable; finance and investment in working capital and returns ratio to share value, dividends paid and changes in cash as independent variables; and earning before deducting invest and taxes, financial leverage, and financial cost as control variables. The analysis discovered a strongly negative relationship between cash and excess stock return. There was no correlation found between changes in working capital and excess stock return. It was determined that the end value of working capital in enterprises dealing with financial constraints was greater than in firms not dealing with financial constraints. The findings indicate that there was no statistically significant association between the stock's real return and the company's worth.

Ben Le (2019) in the study titled as, "Working capital management and firm's valuation, profitability and risk" examined 497 companies for ten years i.e., 2007 - 2016. Researcher considered some components i.e., Age, capital expenditure, cash dividend, cash conversion cycle, days payable outstanding, days sales inventory, days sales outstanding, government ownership, growth, interest, leverage, market to book ratio, net working capital, return on invested capital, sales, size, and stock return volatility, etc. Researcher used regression analysis for analyzing data. It was determined that there was a considerably negative relationship between net working capital and company valuation, risk, and profitability. According to the report, in managing a company's working capital requirements, managers should strike a balance between profitability and risk control. Furthermore, working capital management is especially important in enterprises with limited capital access as well as those boosting investment during the economic recovery.

Dr. Nabaghan Mallick and Miss Abhipsa Priyadarshini (2020) in their study titled as, "A comparative study of working capital management of selected four wheelers companies in India" examined the three four-wheelers firms for five years from 2015 to 2019. They had taken total assets, total liability, gross working capital and net working capital as variables. It was noticed that the firms had favourable working capital management in the organizations. The study revealed that current liabilities were larger than that of current assets. It was pointed out that Maruti Suzuki Ltd. and Tata Motors Ltd. were working with adverse working capital, while Mahindra & Mahindra Ltd had a favourable working capital position.

Charalampos Basdekis et al. (2020) in their study titled as, "Profitability and optimal debt ratio of the automobiles and parts sector in the Euro area" examined 13 automobile firms in the Euro area over thirteen years viz. 2005 to 2017. They had taken return on equity as a dependent variable and debt-equity ratio as an independent variable. They were used descriptive statistics and a regression model for analyzing the data. It was pointed out that the debt ratio had a significantly positive association with profitability. It was discovered that financial leverage at a lesser level is appropriate for the firm, but it becomes detrimental at a certain point.

Kafeel, Javed Ali et al. (2020) in their study titled as, "working capital management and firms' profitability: Dynamic panel data analysis of manufactured firms" examined **1**7 firms over nine years i.e.2007 to 2018. The research was done based on secondary sources. They had taken two types of variables viz. dependent and independent. Return on assets, inventory conversion period, and Payable Deferral period as a dependent variable and receivable collection period, cash conversion cycle, debt-equity ratio, current ratio, and liquidity as independent variables. The inventory conversion duration and payment deferral period were shown to have a favourable association with return on assets. Furthermore, the cash conversion cycle had a negative influence on return on assets, whilst the receivables collection period had a favourable but statistically insignificant impact.

Dr. T. Priyadharshini and Ms. A. Menaka (2021) in their study titled as, "A study on working capital management on Maruti Suzuki and Hyundai Motor limited in India" examined the two firms for four years i.e., 2015-2016 to 2019-2020. The study was conducted on following companies: Maruti Suzuki and Hyundai Motor limited. The research was done based on secondary sources. They had taken current ratio, liquid ratio, absolute liquid ratio, inventory turnover ratio, working capital turnover ratio, average collection period, average payment period as variables. Researchers used ratio analysis for analyzing the data. It was noticed during the research that efficiency and working capital position of the firms were not at acceptable levels. The firms can put forth the effort to increase the profits through proper management and by proper utilization of available resources.

Lieutenant Dr. Yashodhan P Mahajan (2021) in their study titled as, "An Analytical Study of Solvency, Liquidity and Bottom Line, of Listed Indian Automobile Companies" examined three auto manufacturing firms for four years viz. 2016 - 2020. The research was done based on secondary sources. The researcher had taken quick ratio, return on capital employed, solvency, and liquid ratio as variables. The researcher used the T-test, Altman Z- score test, and Piotroski F- score test method for analyzing the data. There was shown to be a strong negative association amongst liquidity, profitability, and solvency.

Ajmera Tushar Rameshbhai (2021) in their study titled as, "working capital management and it impact on tyre Industry: A study of selected companies" examined three organizations for eight years i.e., 2011-12 to 2018-19. The study was conducted on following companies: Balkrishna Industry, Apollo, and Ceat. Research had taken net profit margin ratio as dependent ratio and current ratio, quick ratio, inventory turnover ratio, and working capital turnover ratio as independent variables. The researcher used the regression method for analyzing the data. It was noticed that Balkrishna's performance with reference to working capital was well off using net profit margin ratio. Further noticed, that Ceat had an extremely favourable working capital management, whereas Apollo had an adverse working capital management.

Nabil Ahmed Mareai Senan et al. (2021) in their study titled as, "working capital management Banks' performance: evidence from India" examined 98 Indian banks for eleven years viz. 2008 - 2018. They had taken return on assets and return on equity as a dependent variable and working capital cycle, profit after tax, assets size, financial leverage, quick ratio, current ratio, return on capital employed, return on total assets, net profit margin, and monetary policy rate as independent variables. They were used descriptive test, Pearson correlation, unit root test, model estimation, GMM estimation, and robustness regression methods for analysing the data. It was discovered that the current ratio, asset size, net profit margin ratio, and return on capital employed all had a positive impact on return on equity. It was discovered that the key working capital components that influenced a bank's performance, as measured by return on assets, were net profit margin, profit after tax, monetary policy, and working capital cycle.

Grzegorz Zimon and Hossein Tarighi (2021) in their study titled as, "Effects of the COVID-19 global crisis on the working capital management policy: Evidence from Poland" examined 61 firm for six years viz. 2015 - 2020. The researchers had taken financial liquidity, short-term receivables turnover ratio in days, short-term liabilities turnover ratio in days, inventory turnover ratio in days, cash conversion cycle, operating cycle, the share of working capital, short-term receivables, short-term investment, and inventory ratio as variables. They were used descriptive statistics, conclusive statistics, F- limer and Hausman tests, Heteroskedasticity and Multicollinearity Tests. The result shows that the companies operating in huge towns had lower sales returns whereas it was possible that the central unit could have higher sales returns.

Muhammad Yousaf et al. (2021) in their study titled as, "working capital management and firms' profitability: evidence from Czech certified firms from the EFQM excellence model" examined 332 Czech firms for five years viz. 2015 - 2019. Researchers had taken two types of variables i.e., dependent, and independent. Return on assets as dependent variable and days sales outstanding, days inventory outstanding, days payable outstanding, cash conversion cycle as independent variables. They were using regression analysis for analyzing the data. Working capital management was found to have a negative impact on company profitability. The interaction effects of EFQM certified companies with the variables of working capital management revealed a positive relationship between the variables of working capital management and profitability.

Minhas Akbar et al. (2021) in their study titled as, "Global financial crises, working capital management, and firm performance: Evidence from an Islamic Market Index" examined 26 Islamic market indexes in Pakistani firms for twelve years viz. 2002 - 2013. Researchers had

taken return on equity as a dependent variable and net trade cycle, days account receivables, day inventory, day account payables as independent variables and cash to assets ratio, cash conversion cycle, current ratio, size of the firm, and variability of net operating income as control variables. The findings revealed that the net trade cycle had a considerably favourable influence on profitability, but the net trade cycle had a negative impact on company performance.

Okerekeoti, Chinedu U. (2021) in their study titled as, "effect on working capital management and financial performance of food and beverage companies in Nigeria" examined twelve food and beverage firm for one year i.e., 2020. The research was done based on secondary sources. The study was conducted on following companies: 7-Up Bottling Company, Cadbury Nigeria, Dangote Flour Mills, Dangote Sugar Refinery, Ferdinand Oil Mills, Flour Mills Nigeria, Foremost Dairies, National Salt Co. Nigeria, Nestle Foods Nigeria, Nigerian Bottling Company, Northern Nigeria Flour Mills, and Union Dicon Salt. The researcher had taken return on assets as a dependent variable and inventory as the independent variable. The researcher used regression analysis for analysing the data. Inventory and return on assets have been found to have a negative insignificant relationship.

Dr.M. Yasodha et al. (2021) in their study titled as, "working capital management of Wipro limited" examined the Wipro Ltd for 5 years viz. 2016 - 2020. The research was done on the basis of secondary sources. They had taken gross working capital, networking capital, debtors turnover ratio, inventory turnover ratio, current ratio, quick ratio, cash ratio as variables. They have used ratio analysis for analyzing the data. It was concluded that the overall working stability and soundness had improved over the years and will continue improve the financial performance in the upcoming years.

 ISBN: 978-93-93810-18-2

CHAPTER – III

Research Methodology

3.1.0 **FOCUS:**

3.1.1 In the first chapter it is clearly brought out that Working capital is an essential component of financial management. Working capital management involves two aspects viz. Deployment of resources involving creation of current assets such as inventory, debtors, cash, bank, marketable securities and mobilization of resources involving creation of current liabilities creditors, short term bank loans and other provisions. Each of these aspects call for cost incurrence besides having the potential to generate revenue for the enterprise.

3.1.2 Naturally these twin aspects of working capital management involve several variables. We evaluated the following variables in our study:

(1) Net profit to sales ratio (NPSR)

(2) Inventory Turnover Ratio (IR)

(3) Debtors Turnover Ratio (DR)

(4) Sales Growth Rate (SGR)

(5) Cash & Bank and Marketable Security to Turnover Ratio

(CBMSR)

(6) Creditors Turnover Ratio (CTR)

(7) Fixed Assets Turnover Ratio (FTR)

(8) Long Term Debt Equity Ratio (LTDER)

(9) Current Ratio (CR)

The variables are expressed in terms of ratios and each of them is explained below:

1. Net Profit to Sales Ratio:

The profit left to shareholders as a percentage of net sales is represented by the ratio. It assesses the total efficiency of manufacturing, pricing, administration, sales, finance, and tax administration. When combined, gross and net profit margin ratios give important insight into a company's cost and profit structure, allowing the analyst to uncover causes of inefficiency in business efficiency.

Net profit to sales ratio = Profit after Tax / Net Sales * 100.

2. Inventory Turnover Ratio:

Inventory turnover is the rate at which inventory flows through a corporation, accelerating sales. Inventory turnover represents inventory management efficiency. The higher the ratio, the better the inventory management, and vice versa. This does not have to be the case all of the time. Low inventory levels can create high inventory turnover, resulting in frequent stock outs and loss of revenue and consumer goodwill. Because stocks fluctuate during the year, we utilise the

average of stocks at the beginning and end of the year. In general, when connecting a flow figure to an inventory figure, averages can be employed.

Inventory Turnover Ratio = Sales / Inventory

3. Debtors Turnover Ratio:

This ratio displays how many times the Sundry debtors turnover occurs during the year. If the net credit sales figure is not available, the net sales figure may have to suffice. Of course, the larger the turnover of debtors, the more efficient debtor management will be.

Debtors Turnover Ratio = Sales / Debtor

4. Sales Growth Rate:

Sales growth is the percentage growth of net business revenue from one year to the next. Net sales are total sales minus returns, discounts, and rebates. You would compare an earlier period of higher sales. Usually the two periods are also of corresponding duration. For example, you wouldn't compare net sales in one quarter of one fiscal year to the full year of another. Instead, you can compare the sales of two consecutive fiscal years ending March 31.

Sales Growth Rate = Current Year Sales – Previous Year Sales / Previous Year Sales

5. Cash & Bank and Marketable Security to Turnover Ratio:

Because cash and bank balances, as well as short-term marketable securities, are company's most liquid assets, financial analysts examine the cash ratio. Of fact, the cash ratio may be the most accurate indicator of liquidity. It is true that it is overly exact. If the corporation can postpone its payment or borrow money on short notice, a lack of immediate cash may not be an issue.

Cash & Bank and Marketable Security to Turnover Ratio = Cash & Bank / Net Sales

6. Creditors Turnover Ratio:

The creditor turnover ratio is a useful indicator of short-term liquidity. The creditor turnover rate measures the frequency with which credit purchases are paid to creditors. This ratio is determined in about the same time frame as the receivable turnover ratio.

Creditors Turnover Ratio = Sales / Creditors

***7.* Fixed Assets Turnover Ratio:**

This ratio calculates the value of sales per rupee of capital investment in fixed assets. The ratio is designed to assess the effectiveness with which fixed assets are utilised. A high ratio implies that assets are being used efficiently, whereas a low ratio shows that assets are being used inefficiently. However, while analysing this ratio, one must use caution. Remember that when

the firm's fixed assets are old and heavily depreciated, the fixed assets turnover ratio is generally large since the ratio's denominator is quite low.

Fixed Assets Turnover Ratio = Sales / Fixed Assets.

8. Long Term Debt Equity Ratio:

This debt ratio takes into account the proportionate contributions of creditors and owners. In a rising-priced environment, the book value of stock may be an underestimation of its underlying value. This occurs because the assets are appraised based on their past worth minus depreciation, rather than their present value.

Long Term Debt Equity Ratio = Long Term Debt / Equity

9. Current Ratio:

The current ratio assesses a company's capacity to fulfil its current liabilities by comparing its current assets to current liabilities, which are turned into cash within the company's business cycle and provide the money required to pay current liabilities.

Current Ratio = Current Assets / Current liabilities

3.1.3 From amongst the variables mentioned above Net profit to sales ratio is treated as dependent variable and the remaining variables viz. Inventory Turnover Ratio, Debtors Turnover Ratio, Sales Growth Rate, Cash & Bank and Marketable Security to Turnover Ratio, Creditors Turnover Ratio, Fixed Assets Turnover Ratio, Long Term Debt Equity Ratio *and* Current Ratio are treated as independent variables.

3.1.4 In this study first the research has been carried out using secondary data. Then a questionnaire based survey was carried out to map the perception of decision makers and find out whether their perception was in line with empirical results or not.

3.2.0 RESEARCH DESIGN

3.2.1 In general there are two types of research method viz. exploratory research and descriptive research.

Exploratory Research: the process of researching an issue that has not previously been examined or completely investigated is known as exploratory research. Exploratory research is typically undertaken to gain a better knowledge of an existing problem, but it seldom yields a clear outcome. Exploratory research is used by researchers to become acquainted with an existing occurrence and obtain fresh insight into it in order to build a more precise problem. It begins with a broad concept, and the research findings are utilised to identify challenges relating to the study topic. In exploratory research, the process of the research varies according to the finding of new data or insight. Also referred to as interpretative research or grounded theory approach, the outcomes of this research provide answers to questions like what, how and why. For data collection and investigation, numerous exploratory research methodologies are

accessible. However, exploratory research has been divided into two categories: primary and secondary research methodologies. When dealing with an issue that hasn't been thoroughly examined before, the research procedure becomes more complex.

Descriptive research: Descriptive research methods are those that describe the features of the variables being studied. This technique focuses on answering questions on the "What" of the study issue rather than the "Why." Instead of focusing on the "Why", the primary goal of descriptive research is to simply explain the characteristics of the demographics under examination. Descriptive research id referred t as an observational research approach since none of the variables in the study are modified throughout the research process.

The researches types are in the area of management frequently used are qualitative research and quantitative research.

Qualitative research: Qualitative research methods are aimed to expose the behaviour and perceptions of a target audience in relation to a certain issue. In-depth interviews, focus groups, ethnographic research, content analysis, and case study research are all common forms of qualitative research methodologies. The findings of derived from the data gathered relatively simply. Qualitative research methodologies have their roots in the social and behavioural sciences. Today's world is more convoluted, making it harder to comprehend what individual believe and perceive. Because it is more conversational and descriptive, online qualitative research methodologies make it simpler to grasp.

Quantitative research: Quantitative research is described as the systematic examination of phenomena via the collection of measurable data and the use of statistical, mathematical, or computer methodologies. Quantitative research collects information from existing and future consumers using sampling methods and the distribution of online surveys, online polls, questionnaires, and other similar tools, the results of which may be represented numerically. Following a thorough grasp of these figures, one may forecast the future of a product or service and make modifications appropriately.

3.2.2. For the secondary data exploratory research design was adopted. For primary data cross sectional convenient sampling design was adopted. For getting the respondents, convenience and snowball technique was adopted. Structured questionnaire was successfully administered with 395 respondents. These were the company personnel at various levels involved in decision making for working capital management.

3.3.0 RESEARCH OBJECTIVES:

3.3.1 The Research Objectives, In This Study Are:

(1) To understand working capital management practices in automobile sector.

(2) To examine the relationship between working capital management and profitability of the automobile sector.

(3) To assess the impact of working capital parameters on profitability of automobile sector.

3.4.0 HYPOTHESIS:

The following are the study's hypotheses:

(1) H_0: Inventory Turnover Ratio has no impact on Net profit to sales ratio

H_1: Inventory Turnover Ratio has an impact on Net profit to sales ratio

(2) H_0: Debtors Turnover Ratio has no impact on Net profit to sales ratio

H_1: Debtors Turnover Ratio has an impact on Net profit to sales ratio

(3) H_0: Sales Growth Rate has no impact on Net profit to sales ratio

H_1: Sales Growth Rate has an impact on Net profit to sales ratio

(4) H_0: Cash & Bank and Marketable Security to Turnover Ratio has noimpact on Net profit to sales ratio

H_1: Cash & Bank and Marketable Security to Turnover Ratio has an impact on Net profit to sales ratio

(5) H_0: Creditors Turnover Ratio has no impact on Net profit to sales ratio

H_1: Creditors Turnover Ratio has an impact on Net profit to sales ratio

(6) H_0: Fixed Assets Turnover Ratio has no impact on Net profit to sales ratio

H_1: Fixed Assets Turnover Ratio has an impact on Net profit to sales ratio

(7) H_0: Long Term Debt Equity Ratio has no impact on Net profit to sales ratio

H_1: Long Term Debt Equity Ratio has an impact on Net profit to sales ratio

(8) H_0: Current Ratio has no impact on Net profit to sales ratio

H_1: Current Ratio has an impact on Net profit to sales ratio

3.5.0 PERIOD OF STUDY:

3.5.1 The variables Net profit to sales ratio, Inventory Turnover Ratio, Debtors Turnover Ratio, Sales Growth Rate, Cash & Bank and Marketable Security to Turnover Ratio, Creditors Turnover Ratio, Fixed Assets Turnover Ratio, Long Term Debt Equity Ratio and Current Ratio of various business enterprises have been examined for a period of ten years ending on 31st March 2019 with a view to neutralize cyclical effects of the economy and develop better understanding of the behaviour of the said variables.

3.6.0 DATA COLLECTION:

3.6.1 Criteria

For this research study the companies were extracted from reputed databases viz. Capitaline and Prowess for greater reliability of data. In order to eliminate statistical flaws in the data analysis, firms for whom complete data for the whole time frame of 10 years each of 12 months was not available were excluded. The final set of enterprises so derived comprises of 25 companies placed at Annexure – 1.

3.6.2 Type and Nature of Data

The required data pertains to each variable viz. Net profit to sales ratio, Inventory Turnover Ratio, Debtors Turnover Ratio, Sales Growth Rate, Cash & Bank and Marketable Security to

Turnover Ratio, Creditors Turnover Ratio, Fixed Assets Turnover Ratio, Long Term Debt Equity Ratio and Current Ratio as stated in this chapter at paragraph no. 3.1.2 for each company in the list and that too for a period of ten years ending on 31st March 2019. As a result, the data required was historical and extensive.

3.6.3 **Data Collection Tools**

The data was first extracted from a reputed database CAPITAline and Prowess IQ. The data so extracted the said databases were cross checked with each other and further validated as under:

(1) The data taken from the database for a firm was compared to the said company's audited Profit & Loss Account and Balance Sheet for a particular year, since these are the legitimate records.

(2) The said comparison was carried out for each year of the study period.

(3) The exercise at point (1) and (2) above was carried out for each of the 25 companies.

(4) The necessary audited Profit & Loss Accounts and Balance Sheets of companies were obtained personally from the companies, chartered accountants, Bombay Stock Exchange Ltd. and National Stock Exchange Ltd.

Thus, the data collection tools viz. Audited Profit & Loss Accounts and Balance Sheets and CAPITAline and Prowess IQ database were put to rigorous use to collect necessary data. The said sources of information have been stated at Annexure – II.

3.7.0 DATA ANALYSIS:

The data for all the variables viz. Net profit to sales ratio, Inventory Turnover Ratio, Debtors Turnover Ratio, Sales Growth Rate, Cash & Bank and Marketable Security to Turnover Ratio, Creditors Turnover Ratio, Fixed Assets Turnover Ratio, Long Term Debt Equity Ratio and Current Ratio was entered for each company and for all the ten years. The measures of central tendency, namely average, median, and standard deviation, were then calculated. The Multiple Regression Analysis approach was then used to investigate the connection between independent factors and the dependent variable and to determine the amount to which independent variables exert influence over the dependent variable. To further understand how the variables behave, the F test and multi co linearity tests were performed. To facilitate the process SPSS programme has been used.

 ISBN: 978-93-93810-18-2

CHAPTER – IV

Analysis, Interepretation and Limitations

4.1.0 SECONDARY DATA ANALYSIS & INTERPRETATION.

4.1.1 Regression Co-efficient

The standardized regression co-efficient (β) of independent variables with their direction, value, significance level and respective VIF statistics are placed at Table – 1 below

Table – 1: Regression Co-efficient with significance level and VIF

	Regression Standardized Co-efficient		t	Significance Level	VIF
	Direction	Value β			
Constant		0.287			
IR	-	0.011	-0.249	0.803	1.109
DR	-	0.011	-0.271	0.786	1.012
SGR	-	0.003	-0.070	0.944	1.021
CBMS	-	0.762	-18.173	0.000	1.026
CTR	+	0.059	1.340	0.181	1.116
FAR	-	0.011	-0.261	0.794	1.029
LTDER	-	0.020	-0.466	0.642	1.022
CR	-	0.022	-0.524	0.600	1.059

Dependent variable: NPSR $R^2 = 0.600$ Independent variables: IR, DR, SGR, CBMS, CTR, N = 250

FAR, LTDER, CR

4.1.2 Inventory Turnover Ratio (IR):

As stated in the said Table – 1, IR has negative association with NPSR as β (IR) stands at -0.011. The corresponding significance level of 0.803 suggests that β (IR) is statistically not significant at all. The evidence therefore propounds that H_0 (IR) be accepted and H_1 (IR) be rejected. This means IR does not have any impact on NPSR of the enterprise.

4.1.3 Debtor Turnover Ratio (DR):

As stated in the said Table – 1 DR has negative association with NPSR as β (DR) is -0.011. The corresponding significance level of 0.786 suggests that β (DR) is statistically not significant at all. The evidence therefore professes that H_0 (DR) be accepted and H_1 (DR) be rejected. This means DR does not have any impact on NPSR of the enterprise.

4.1.4 Sales Growth Rate (SGR):

As stated in the said Table – 1 SGR has negative association with NPSR as β (SGR) stands at -0.003. The corresponding significance level of 0.944 indicates that β (SGR) is statistically not

significant at all. The evidence therefore advocates that H_0 (SGR) be accepted and H_1 (SGR) be rejected. This means SGR does not have any impact on NPSR of the enterprise.

4.1.5 Cash, Bank and Marketable Securities (CBMS):

The standardized β (CBMS), as shown in Table – 1, stands at -0.762 which shows that cash, bank and marketable security to sales ratio has negative relationship with net profit to sales ratio. Further the significance level of 0.000 clearly points out that the β (CBMS) is statistically very significant. The evidences clearly propounds that H_0 (CBMS) be rejected and H_1 (CBMS) be accepted. This means CBMS clearly impacts NPSR in a significant manner. Every decline in CBMS will result into increase in NPSR in the proportion of the regression co-efficient and vice versa.

4.1.6 Creditors Turnover Ratio (CTR):

As stated in the said Table – 1 CTR has positive association with NPSR as β (CTR) stands at +0.059. The corresponding significance level of 0.181 suggests that β (CTR) is statistically moderately significant. The evidence therefore propounds that H_0 (CTR) be rejected and H_1 (CTR) be accepted. This means CTR does have moderate impact on NPSR of the enterprise. Naturally, an increase in CTR will bring about moderate increase in NPSR and vice versa.

4.1.7 Fixed Assets Turnover Ratio (FAR):

As stated in the said Table – 1 FAR has negative association with NPSR as β (FAR) stands at -0.011. The corresponding significance level of 0.749 suggests that β (FAR) is statistically not significant. The evidence therefore advocates that H_0 (FAR) be accepted and H_1 (FAR) be rejected. This means FAR does not have any impact on NPSR of the enterprise.

4.1.8 Long Term Debt Equity Turnover Ratio (LTDER):

As stated in the said Table – 1 LTDER has negative association with NPSR as β (LTDER) stands at -0.020. The corresponding significance level of 0.642 suggests that β (LTDER) is statistically not significant at all. The evidence therefore propounds that H_0 (LTDER) be accepted and H_1 (LTDER) be rejected. This means LTDER does not have any impact on NPSR of the enterprise.

4.1.9 Current Ratio (CR):

As stated in the said Table – 1 CR has negative association with NPSR as β (CR) stands at -0.022. The corresponding significance level of 0.600 suggests that β (CR) is statistically not significant at all. The evidence therefore professes that H_0 (CR) be accepted and H_1 (CR) be rejected. This means CR does not have any impact on NPSR of the enterprise.

4.1.10 The multiple regression equation as under:

NPSR = 0.287 – 0.011 (IR) – 0.011 (DR) – 0.003 (SGR) – 0.762 (CBMS)

+ 0.059 (CTR) - 0.011 (FAR) – 0.020 (LTDER) – 0.022 (CR).

The R^2 viz. the co-efficient of determination, are placed at Table-1, stands at 0.600. This means said equation can explain 60 % of variations in NPSR. For the remaining variation in NPSR some other variables may be responsible.

4.1.11 Analysis of Variance

Table – 2 consists of Regression and Residual analysis describing their associated values of Sum of Squares, Df, Mean Square, F and Significance Level in the Table – 2.

Table – 2: Analysis of Variance (ANOVA)

	Sum of Squares	Df	Mean Square	F	Significance Level
Regression	9717.423	8	1214.678	42.746	0.000
Residual	6848.280	241	28.416		
Total	16565.703	249			

4.1.12 F test

F test result given in Table – 2, clearly points out that the F = 42.746 at a significance level of 0.000 with df (8, 241). This means that all standardized regression co-efficient will be non-zero.

4.1.13 Matrix of Co-efficient of Correlations

Table – 3 shows the Matrix of Co- efficient of correlations amongst the independent variables.

Table – 3: Matrix of Co-efficient of Correlations

	IR	DR	SGR	CBMS	CTR	FAR	LTDER	CR
IR	1.000	-0.040	-0.067	-0.066	0.297	0.007	-0.084	0.024
DR	-0.040	1.000	-0.006	-0.005	-0.045	-0.022	-0.022	-0.088
SGR	-0.067	-0.006	1.000	0.108	-0.071	-0.029	0.000	-0.062
CBMS	-0.066	-0.005	0.108	1.000	-0.071	-0.033	-0.024	-0.088
CTR	0.297	-0.045	-0.071	-0.071	1.000	0.036	-0.056	0.111
FAR	0.007	-0.022	-0.029	-0.033	0.036	1.000	-0.069	0.154
LTDER	-0.084	-0.022	0.000	-0.024	-0.056	-0.069	1.000	-0.093
CR	0.024	-0.088	-0.062	-0.088	0.111	0.154	-0.093	1.000

4.1.14 The said matrix of co-efficient of correlations indicates that none of the eight independent variables has the correlation co-efficient larger than $\pm$ 0.7. Hence there is no case of multi collinearity amongst independent variables.

4.1.15 This was further confirmed by VIF statistics placed that Table – 1. VIF values obtained for IR, DR, SGR, CBMS, CTR, FAR, LTDER and CR are 1.109, 1.012, 1.021, 1.026, 1.116, 1.029, 1.022 and 1.059 respectively. These VIF statistics are far away from 10. Hence there is no problem of multi collinearity amongst independent variables affecting the result.

4.1.16 Descriptive Statistics

Table – 4 represents the descriptive statistics comprising of mean, standard deviation, minimum and maximum.

Table – 4: Descriptive statistics

Variables→	NPSR	IR	DR	SGR	CBMS	CTR	FAR	LTDER	CR
Mean	-0.19	10.58	439.59	227.09	2.05	7.16	3.45	0.48	1.05
Std. Deviation	8.15	7.69	6474.99	2815.69	29.177	6.44	7.13	1.39	0.54
Minimum	-100.06	0.10	0.69	-100.00	0.000067	0.009	0.001	-1.069	0.100
Maximum	49.46	35.50	102407.00	44261.11	461.31	85.29	86.17	20.44	3.130

4.1.17 If the data set of the enterprises is more or less similar to the descriptive statistics placed at Table- 4, the regression equation placed at point no. 4.1.10 will command better predictive value.

4.2.0 PRIMARY DATA ANALYSIS & INTERPRETATION.

4.2.1 Primary survey

Primary survey was conducted using structured questionnaire placed at Annexure - IV. The analysis is presented below:

4.2.2 Q.1 Age Group.

The age group wise bifurcation of the responses is placed at Table – 5 below.

Table – 5: Age Group

Age	Nos.	%
30-40	255	64.56
41-55	101	25.57
Above 55	39	9.87
Total	395	100

Out of 395 respondents, 255 were in the age group of 30-40 years, 101 were in the age group of 41-55 years and 39 were in the age group of 55 above years constituting 64.56%, 25.57% and 9.87% respectively.

4.2.3 Q.2 Gender.

The gender wise bifurcation of the responses is placed at Table – 6 below.

Table – 6: Gender

Gender	Nos.	%
Male	289	73.16
Female	106	26.84
Total	395	100

Out of 395 respondents, 289 were male while 106 were female constituting 73.16% and 26.84% respectively.

4.2.4 **Q. 3 Educational Qualification**

The educational qualification wise bifurcation of the responses is placed at Table – 7 below.

Table – 7: Educational Qualification

Education	Nos.	%
Graduation	91	23.04
Post-Graduation	176	44.55
Professional	128	32.41
Total	395	100

Out of 395 respondents 91 were graduates, 176 were post-graduates while 128 were professional constituting 23.04 %, 44.55 % and 32.41% respectively.

4.2.5 The responses for Q.4 to Q.12 have been summarised in Table – 8 below

Table – 8: Responses Summary

Variables	Negative	%	Neutral	%	Positive	%	Total
Inventory	106	26.82	184	46.57	105	26.57	395
Debtor	150	37.97	50	12.64	195	49.36	395
Sales growth	4	1.01	30	7.58	361	91.38	395
Cash and Bank Marketable Security	33	8.34	165	41.77	197	49.86	395
Creditor	160	40.5	93	23.53	142	35.94	395
fixed asset	105	26.58	94	23.79	196	49.61	395
debt equity	47	11.89	259	66.07	89	22.52	395
current asset	35	8.85	91	23.03	269	68.09	395
current liability	218	55.18	112	28.35	65	16.45	395

4.2.6 **Q. 4 Does inventory affect the profitability of the company?**

Out of total 395 respondents 106 (26.82%) of respondents opined that inventory negatively influences the profitability while 184 (46.57%) remained neutral and 105 (26.57%) stated that inventory positively influences the profitability.

Thus when this viewed with result stated at paragraph no. 4.1.2, only 26.82% agree with empirical results while the remaining 289 (73.16%) are not in line with empirical results.

4.2.7 **Q. 5 Does debtors affect the profitability of the company?**

Out of total 395 respondents 150 (37.97%) of respondents opined that debtors negatively influences the profitability while 50 (12.64%) remained neutral and 195 (49.36%) stated that debtors positively influences the profitability.

Thus when this viewed with result stated as paragraph no.4.1.3, only 37.97% agree with empirical results while the remaining 245 (62.02%) are not in the line with empirical results.

4.2.8 **Q. 6 Does sales growth rate affect the profitability of the company?**

Out of total 395 respondents 4 (1.01%) of respondents opined that sales growth rate negatively influences the profitability while 30 (7.58%) remained neutral and 361 (91.38%) stated that sales growth rate positively influences the profitability.

Thus when this viewed with result stated as paragraph no.4.1.4, only 1.01% agrees with empirical results while the remaining 391 (98.98%) are not in the line with empirical results.

4.2.9 **Q. 7 Does cash & bank and marketable security affect the profitability of the company?**

Out of total 395 respondents 33 (8.34%) of respondents opined that cash & bank and marketable security negatively influences the profitability while 165 (41.77%) remained neutral and 197 (49.86%) stated that cash & bank and marketable security positively influences the profitability.

Thus when this viewed with result stated as paragraph no.4.1.5, only 8.34% agrees with empirical results while the remaining 362 (91.64%) are not in the line with empirical results.

4.2.10 **Q. 8 Does creditors affect the profitability of the company?**

Out of total 395 respondents 160 (40.5%) of respondents opined that creditors negatively influences the profitability while 93 (23.53%) remained neutral and 142 (35.94%) stated that creditors positively influences the profitability.

Thus when this viewed with result stated as paragraph no.4.1.6, 59.47% agrees with empirical results while the remaining 160 (40.5%) are not in the line with empirical results.

4.2.11 **Q. 9 Does fixed assets affect the profitability of the company?**

Out of total 395 respondents 105 (26.58%) of respondents opined that fixed assets negatively influences the profitability while 94 (23.79%) remained neutral and 196 (49.61%) stated that fixed assets positively influences the profitability.

Thus when this viewed with result stated as paragraph no.4.1.7, only 26.58% agrees with empirical results while the remaining 290 (73.41%) are not in the line with empirical results.

4.2.12 **Q. 9 Does debt equity affect the profitability of the company?**

Out of total 395 respondents 47 (11.89%) of respondents opined that debt equity negatively influences the profitability while 259 (66.07%) remained neutral and 89 (22.52%) stated that debt equity positively influences the profitability.

Thus when this viewed with result stated as paragraph no.4.1.8, only 11.89% agrees with empirical results while the remaining 348 (88.10%) are not in the line with empirical results.

4.2.13 **Q.10 Does current assets affect the profitability of the company?**

Out of total 395 respondents 35 (8.85%) of respondents opined that current assets negatively influences the profitability while 91 (23.03%) remained neutral and 269 (68.09%) stated that current assets positively influences the profitability.

Thus when this viewed with result stated as paragraph no.4.1.9, only 8.85% agrees with empirical results while the remaining 360 (91.13%) are not in the line with empirical results.

4.2.14 **Q.11 Does current liability affects the profitability of the company?**

Out of total 395 respondents 218 (55.18%) of respondents opined that current liability negatively influences the profitability while 112 (28.35%) remained neutral and 65 (16.45%) stated that current liability positively influences the profitability.

Thus when this viewed with result stated as paragraph no.4.1.9, 55.18 % agrees with empirical results while the remaining 177 (44.81%) are not in the line with empirical results.

4.2.15 **Q.13 Please share/describe/express the level of your agreement or disagreement of how following factors/elements/points affects the profitability of your company?**

The mean score and standard deviation of the responses obtain for various factors affecting working capital are placed at Table – 9 below.

Table – 9: Result of Likert Scale

Variables	Mean Score	Standard Deviation
Inventory	3.833	1.0555
Debtors	3.349	1.0098
Sales growth	4.251	.8552
Cash and bank marketable security	3.666	.8246
Creditors	3.392	1.1017
Fixed assets	3.587	.8396
Debt equity	3.691	.7545
Current asset	3.600	.9857
Current liabilities	3.253	1.0600

The mean score obtain for inventory, debtors, sales growth, cash and bank marketable security, creditors, fixed assets, debt equity, current assets, current liabilities is above 3, sales growth having highest mean score of 4.251 and current liabilities having lowest mean score of 3.253. The standard deviation is also normal. This means that majority of the respondent believe that inventory, debtors, sales growth, cash and bank marketable security, creditors, fixed assets, debt equity, current assets, current liabilities has influence over profitability.

4.2.16 **Q.14 Which of these strategies/ business practices your company is using to optimize working capital cycle.**

The mean score and standard deviation of the responses obtained are placed at Table – 10 below.

Table – 10: Result of Likert Scale

Variables	Mean Score	Standard Deviation
Inventory	3.456	1.0447
Debtors	3.463	1.0376
Sales growth	3.734	1.0935
Cash and bank marketable security	3.377	.9516
Creditors	3.213	.9925
Fixed assets	3.114	.9584
Debt equity	3.246	1.0582
Current asset	3.230	1.0829
Current liabilities	3.678	.9043

The mean score obtained for inventory, debtors, sales growth, cash and bank marketable security, creditors, fixed assets, debt equity, current assets, current liabilities is above 3. Sales growth has highest mean score of 3.734 and fixed assets having lowest mean score of 3.114. The standard deviation is also normal. This means that the decision makers of business enterprises find that present practices of inventory, debtors, sales growth, cash and bank marketable security, creditors, fixed assets, debt equity, current assets, current liabilities are appropriate.

4.3.0 The Study's Limitations:

The follows are the study's limitations

i. We have considered only twenty five companies in Indian automobile sector and nine variables only. Hence this data set is altered adding / subtracting the number of variables the results may charge. If sector other than automobile sector is examined the results might be different.

ii. The present study has considered only Indian companies. The results of this study, therefore, may have to be read with caution if the group of companies belong to other country as its economic environ may differ from that of India.

 ISBN: 978-93-93810-18-2

CHAPTER – V

Findings and Recommendations

5.1.0 FINDINGS

5.1.1 Based on the analysis and interpretation mentioned in chapter – 4, the findings and recommendations are put up in the following lines.

5.1.2 Inventory Turnover Ratio:

The Inventory Turnover Ratio has negative association with the net profit to sales ratio. However, the relevant significance level does not permit it to be significant. The inventory turnover ratio therefore is found to be insignificant from view point of influencing the company's profitability. Majority of decision makers in the industry feel that inventory turnover ratio affects profitability.

5.1.3 Debtors Turnover Ratio:

The Debtor Turnover Ratio has negative relationship with the net profit to sales ratio. It is not meaningful because of the importance level. As a result, the debtors turnover ratio is not determined to be a major element influencing the company's net profit to sales ratio. However majority of decision makers in the industry feel that debtors turnover ratio affects profitability.

5.1.4 Sales Growth Rate:

The enterprise's net profit to sales ratio has a negative association with its sales growth rate. Its statistical significance level, however, does not make it important. The sales growth rate therefore is found to be insignificant from view point of profitability of the firm. However vast majority of decision makers in the industry feel that sales growth rate affects profitability.

5.1.5 Cash, Bank and Marketable Securities:

The Cash Bank and Marketable Securities to Turnover Ratio has a negative relationship with the net profit to sales ratio of the firm and also has relatively high value regression coefficient with a significance level of 0.000. The Cash Bank and Marketable Securities to Turnover Ratio is found to be a significant component influencing the net profit to sales ratio. In the same manner majority of decision makers in the industry feel that cash bank and marketable securities to turnover ratio affects profitability.

5.1.6 Creditors Turnover Ratio:

The Creditor Turnover Ratio has positive relationship with the net profit to sales ratio. It is statistically moderately significant. Thus creditor turnover ratio is found to be a moderately significant component. Similarly majority of decision makers in the industry feel that creditor turnover ratio affects profitability.

5.1.7 Fixed Assets Turnover Ratio:

Fixed asset turnover ratio and net profit to sales ratio have a negative association. Its importance level prevents it from becoming relevant. As a result, the fixed assets turnover ratio is shown to be minimal in terms of influencing the company's profitability. However majority of decision makers in the industry feel that fixed assets turnover ratio affects profitability.

5.1.8 **Long Term Debt Equity:**

There is negative relationship among the long term debt equity ratio and net profit to sales ratio. However, the unsatisfactory significance level prevents it from becoming significant. As a result, the long term debt equity ratio is shown to be inconsequential in terms of influencing the company's profitability. However majority of decision makers in the industry feel that long term debt equity ratio affects profitability.

5.1.9 **Current Ratio:**

The current ratio has negative association with the net profit to sale ratio. However, the unacceptable significance level does not permit it to be significant. The current ratio therefore is found to be insignificant from view point of affecting the profitability of the company. However majority of decision makers in the industry feel that current ratio affects profitability.

5.2.0 RECOMMENDATIONS:

5.2.1 An in-depth study of working capital management and its impact on profitability of Indian automobile sector was carried by meticulously following research methodology as detailed in chapter 3 of the thesis. The analysis and interpretation described in chapter 4 followed by the findings placed at point no 5.1.2 to 5.1.9 leads us to following recommendations:

i. The corporates have (a) to pay greater attention to cash Bank and Marketable securities to sales ratio, and (b) to pay moderate attention to creditors turnover ratio.

   To ensure better profitability of the enterprise.

ii. Appropriate management control systems have to be developed to closely monitor the above stated variables. Appropriate authority delegation to different levels of decision makers involved in the process needs to be done to correct and control the deviations that may occur in this area.

iii. The said variables also need to be incorporated in performance appraisal parameters with due weightage to earn employees' alignment with the corporate objective of profit optimisation.

iv. The research community may attempt development of superior techniques of monitoring the Cash, Bank, Marketable Securities, Creditors and Sales.

 ISBN: 978-93-93810-18-2

CHAPTER – VI

Conclusion

This research study pertaining to working capital management and its impact on profitability of Indian automobile having considerable potential for employment generation, contribution to gross domestic production, foreign exchange earnings besides enormous technical spin offs. The data required for the study was enormous and historical in nature and the same was extracted from reputed data based. The data so obtained was analysed on various parameters using statistical package for the social sciences (SPSS) software to maintain statistical precision. The study investigated several variables viz. inventory turnover ratio, debtors turnover ratio, sales growth rate, cash, bank and marketable securities, creditors turnover ratio, fixed assets turnover ratio, long term debt equity ratio and current ratio. The study revealed that Cash, Bank, Marketable securities, Sales and Creditors are the important variables to be paid greater attention for optimizing the profitability of the enterprise. It was found that variables like inventory turnover ratio, debtors turnover ratio, sales growth rate, fixed assets turnover ratio, long term debt equity ratio and current ratio did not matter much in terms of influencing the profitability. The primary survey was carried out to map the perception of decision makers in the industry. The primary survey revealed that the decision makers feel that all the variables including cash, bank and marketable securities & creditors turnover ratio influence profitability.

The research has implications both for the corporates and the society at large. The corporates can improve upon their management control system and performance appraisal parameters finally lending to better profitability. Better utilisation of available resources will also help them spare funds for their corporate social responsibilities.

The said research findings may as well help other sectors of the society such as government department, municipal corporations and non – government organisations to optimally utilise their resources and thus contribute towards social upliftment.

References

JOURNALS

- Abdul Raheman, D. A. (2011, december). Sector-wise Performance of Working Capital Management Measures and Profitability Using Ratio Analysis. *Interdisciplinary Journal Of Contemporary Research In Business, 3*(8), 285-310.
- Abuzayed, B. (2012). Working capital management and firms' performance in emerging markets: the case of Jordan. *International Journal of Managerial Finance, 8*(2), 155-179.
- Ajaya Kumar Panda, S. N. (2018). Working capital financing and corporate profitability of Indian manufacturing firms. *Management Decision, 56*(2), 441-457.
- Akshay Seedoyal, B. J. (2017, july). Financial Management In Mauritian Smes. *Proceedings of Academics World International Conference, 3*(3), 33-37.
- Al-Abass, H. S. (2018, january). Effect of Working Capital Management on Profitability of Cement Sector Listed Companies. *International Journal of Academic Research in Accounting, Finance and Management Sciences, 8*(1), 137-142.
- Amalanathan, D. J. (2017). Effect of Working Capital Management on selected FMCG Companies in India. *Acme Intellects International Journal of Research in Management, Social Sciences & Technology, 20*(20), 1-9.
- Ambati, D. Y. (2017). Working Capital Management In Indian Paper Industry. *EPRA International Journal of Economic and Business Review, 5*(10), 94-98.
- Anjum, R. (2017). Impact of Working Capital Management on Automobile Firm's Profitability. *International Journal of Research in Business Studies, 2*(2), 39-70.
- Aregbeyen, O. (2013). The Effects Of Working Capital Management On The Profitability Of Nigerian Manufacturing Firms. *Journal of Business Economics and Management, 14*(3), 520-534.
- Arpita Naskar, P. G. (2017). Working Capital Management And Firm Profitability: A Study Of Listed Companies In India. *International Journal of Management, 8*(6), 152–162.
- AsgharAsadi, A. H. (2012, may). Management efficiency and profitability in Indian automobile industry: from theory to practice. *Indian Journal of Science and Technology, 5*(5), 2779-2781.
- Berg, H. l. (2016). Working capital management: evidence from Norway. *International Journal of Managerial Finance, 12*(3), 295-313.
- Chakraborty, K. (2008). Working Capital and Profitability: An Empirical Analysis of Their Relationship with Reference to Selected Companies in the Indian Pharmaceutical Industry. *The Icfaian Journal of Management Research, 7*(12), 41-59.
- Charalampos Basdekis, A. C. (2020). Profitability and optimal debt ratio of the automobiles and parts sector in the Euro area. *Journal of Capital Markets Studies, 4*(2), 113-127.

- Chun-Hao Chang, K. D. (1995). Current Assets Policies of European Corporations: A Critical Examination. *Management International Review, 35*, 105-177.
- Claudiu BOȚOC, S. G. (2017). Is Profitability Driven By Working Capital Management? Evidence For High-Growth Firms From Emerging Europe. *Journal of Business Economics and Management, 18*(6), 1135–1155.
- Dalayear, B. A. (2017). Working Capital Management and Profitability of Real Estate Industry in Jordan: An Empirical Study. *Journal of Applied Finance & Banking, 7*(2), 49-57.
- Dash, M. (2018). Working-Capital Management And Profitability Of The Construction Sector In Bangalore. *Journal of Commerce & Accounting Research, 7*(4), 40-46.
- Devi, R. U. (2018). Impact Of Working Capital Management On The Profitability Of The Company- A Case Study Of Maruti Suzuki India Limited. *International jounal of engineering and management sciences, 9*(2), 22-25.
- Dhanabhakyam, D., & S.Kavitha. (2012, april). A Study On Asset Management Of Selected Automobile Companies In India. *International Journal of Multidisciplinary Research, 2*(4), 51-65.
- Dimple. (2017, april). Working Capital Management of Auto Component Industry. *Journal of Advances and Scholarly Researches in Allied Education, 13*(1), 109-114.
- Dr. Aniruddha Das, D. D. (2019). Working Capital Management and Cash Flow Analysis of Selected Indian Companies in Automobile Industry. *International Journal of Management, Technology And Engineering, 9*(3), 1144-1151.
- Dr. Bilal Aziz, M. S. (2016). Impact Of Working Capital & Firm Size On Frim Performance: An Evidance From Bric Automobile Industry. *International Journal of Research in Finance and Marketing, 6*(7), 87-102.
- Dr. Nabaghan Mallick, M. A. (2020). A Comparative Study Of Working Capital Management Of Selected Four Wheelers Companies In India. *International Journal of Advanced Research in Commerce, Management & Social Science (IJARCMSS), 3*(4), 139-142.
- Dr. Sanjay Rastogi, D. P. (2015). Working Capital Management and Profitability in State Owned Companies: A Case Analysis of National Fertilizers Ltd. *International Journal of Science and Research, 4*(5), 490-493.
- Dr. T. Priyadharshini, M. A. (2021). A Study On Working Capital Management On Maruti Suzuki And Hyundai Motor Limited In India. *EPRA International Journal of Multidisciplinary Research (IJMR), 7*(7), 431-434.
- DR.M.YASODHA, V. S. (2021). Working Capital Mangement of Wipro Limited. *Annals of R.S.C.B, 25*(6), 3174-3181.

- Dr.S.Kalaiyarasi. (2014). A Study On Working Capital Management Of Select Companies In Indian Auto Mobile Industries. *International Journal of Business and Administration Research Review, 3*(6), 128-137.
- Eswarareddy, M. (2017). An Empirical Study On Working Capital Management And Profitability. *International Journal Of Current Engineering And Scientific Research , 4*(8), 91-95.
- Farooqi, S. N. (2016, june). Impact of Working Capital Management on the Profitability of Automobile Industry in India- An Empirical Study of Selected Automobile Companies. *Pacific Business Review International, 1*(1), 197-203.
- G.V.Chalam, M. N. (2014, october). Study on the Working Capital Management Efficiency in Indian Leather Industry- An Empirical Analysis. *International Journal of Research in Management & Technology, 4*(5), 196-201.
- Ganesan, V. (2007). An Analysis Of Working Capital Management Efficiency In Telecommunication Equipment Industry. *Rivier Academic Journal, 3*(2), 1-10.
- Gupta, P. B. (2018). Impact of Working Capital Efficiency on Firms' Profitability: A Study on Manufacturing Sector in India. *Global Journal of Enterprise Information System, 10*(1), 25-33.
- Kent Baker, S. K. (2017). Working capital management practices in India: survey evidence. *Managerial Finance, 43*(3), 331-353.
- Hadri Kusuma, A. D. (2018, february). Working Capital Management and Corporate Performance:Evidence from Indonesia. *Journal of Management and Business Administration. Central Europe, 26*(2), 76-88.
- Hien Tran, M. A. (2017). How does working capital management affect the profitability of Vietnamese small and medium-sized enterprises? *Journal of Small Business and Enterprise Development, 24*(1), 2-11.
- Howorth, P. D. (2014). Focus on working capital management practices Focus on working capital management practices among mauritian SMEs: Survey evidence and empirical analysis. *Journal of Business Management and Economics, 5*(4), 097-108.
- INNA. (2016). Comparative Analyses Of Working Capital Management In Automobile Industry Of India. *International Journal of Commerce, Business and Management, 5*(5), 110-125.
- Jafari, F. (2015). Study the Relation between Working Capital System and Profitability in Auto Manufacturing Industry in India. *European Journal of Business and Management, 7*(7), 249-260.
- Jędrzejczak-Gas, J. (2017). Net Working Capital Management Strategies in the Construction Enterprises Listed on the NewConnect Market. *Janina Jędrzejczak-Gas / Procedia Engineering, 182*, 306 – 313.

- Joana Filipa Lourenço Garcia, F. V. (2011). The Impact of Working Capital Management upon Companies' Profitability: Evidence from European Companies. *Faculdade de Economia, Universidade do Porto (FEP) WORKING PAPERS*(438), 1-35.
- Joseph Ugochukwu Madugba, A. K. (2016). Working Capital Management And Financial Performance: Evidence From Manufacturing Companies In Nigeria. *European Journal of Accounting, Auditing and Finance Research, 4*(9), 98-106.
- Joseph, J. (2014). Impact Of Working Capital Management On Firm's Profitability & Liquidity: An Empirical Study Of Ashok Leyland Ltd. *International Journal Of Research In Commerce & Management, 5*(2), 32-38.
- Jothi, P. K. (2017). Impact of Working Capital Management on Profitability of the Select Car Manufacturing. *International Journal of Pure and Applied Mathematics, 116*(24), 13-21.
- Kafeel, J. A. (2020). Working Capital Management and Firms' Profitability: Dynamic Panel Data Analysis of Manufactured Firms. *Journal of Financial Risk Management, 9*, 494-517.
- Kaur, M. P. (2016). Working Capital Management and Its Impact on Profitability: A Case Study of Bharti Airtel Telecom Company. *Imperial Journal of Interdisciplinary Research, 2*(3), 265-271.
- Kaveri, V. S. (1985). Financing of Working Capital in Indian Industry. *Economic and Political Weekly, 20*(35), 123-128.
- Kesseven Padachi, C. H. (2012). Working Capital Financing Preferences: The Case Of Mauritian Manufacturing Small And Medium-Sized Enterprises (Smes). *Asian Academy Of Management Journal Of Accounting And Finance, 8*(1), 125–157.
- Kumar, A. S. (2011). Effect of Working Capital Management on Firm Profitability: Empirical Evidence from India. *Global Business Review, 12*(1), 159–173.
- Le, B. (2019). Working capital management and firm's valuation, profitability and risk Evidence from a developing market. *International Journal Of Managerial Finance, 15*(2), 191-204.
- M.S. Prathibha Raj, D. G. (2017). Analysis Of Selected Automobile Companies In India By Using Altamin Z Score. *BIMS International Journal of Social Science Research, 2*(1), 37-54.
- Mahajan, L. D. (2021). An Analytical Study of Solvency, Liquidity and Bottom Line, of Listed Indian Automobile Companies. *Turkish Journal of Computer and Mathematics Education, 12*(9), 2615-2625.
- Mahdi Salehi, N. M. (2019). Association between the availability of financial resources and working capital management with stock surplus returns in Iran. *International Journal of Emerging Markets, 14*(2), 343-361.

- Mehra, P. (2013, march). Effect of Working Capital Management on the Profitability of the Indian Pharmaceutical Sector. *International Journal Of Enhanced Research In Management And Computer Applications, 2*(3), 1-7.
- Minhas Akbar, A. A. (2021). Global Financial Crisis, Working Capital Management, and Firm Performance: Evidence From an Islamic Market Index. *SAGE Open*, 1-14.
- Mistry, D. S. (2015). Working capital management and profitability: A case study of Automobile Industry in india. *Bi annual journal of Asian school of business management, 8*(2), 1-7.
- Modi, S. (2012). A Study on the Adequacy and Efficacy of Working Capital in Automobile Industry in India. *The IUP Journal of Accounting Research & Audit Practices, 11*(2), 69-90.
- MS. Vasavi Pravallika, D. K. (2018). A Critical Study on Impact of Working Capital Management on Profitability of Manufacturing Industry in India. *Journal of Business and Management, 20*(2), 37-47.
- Muhammad Yousaf, P. B. (2021). Working capital management and firm's profitability: Evidence from Czech certified firms from the EFQM excellence model. *Cogent Economics & Finance, 9*(1), 1-16.
- Nabil Ahmed Mareai SENAN, S. A.-D.-H. (2021). Working Capital Management and Banks' Performance: Evidence from India. *Journal of Asian Finance, Economics and Business, 8*(6), 747-758.
- Nadeem Iqbal, N. A. (2014). The Relationship between Working Capital Management and Profitability: Evidence from Pakistan. *International Letters of Social and Humanistic Sciences, 20*, 14-25.
- Nahid Maleki Nia, H. A. (2012, October). An Analytical Review of the Effect of Working Capital Development on Financial Performance Measures. *American Journal of Scientific Research*(77), 110-122.
- Niresh, J. A. (2012). Working Capital Management & Financial Performance of. *European Journal of Business and Management, 4*(15), 23-30.
- Nufazil Altaf, F. A. (2018). How does working capital management affect the profitability of Indian companies? *Journal of Advances in Management Research, 15*(3), 347-366.
- Ohman, D. Y. (2014). The impact of cash conversion cycle on firm profitability An empirical study based on Swedish data. *International Journal of Managerial Finance, 10*(4), 442-452.
- Okerekeoti, C. U. (2021). Effect Of Working Capital Management And Financial Performance Of Food And Beverage Companies In Nigeria. *International Journal of Advanced Academic Research, 7*(8), 19-30.

- P. Kalaivani, D. J. (2017, october). A Study on Working Capital Analysis of Selected Auto Mobile Manufacturing Companies in India. *Jour of Adv Research in Dynamical & Control Systems*(15), 135-138.
- Padachi, K. (2013). Sourcing Working Capital Finance: The Case of Mauritian SMEs. *GSTF Journal on Business Review, 2*(3), 15-30.
- Pambayun Kinasih Yekti NASTITI, A. D. (2019). Working Capital Management And Its Influence On Profitability And Sustainable Growth. *Business: Theory and Practice, 20*, 61-68.
- Pandey, C. (. (2017). Effect Of Negative Working Capital On Stock Prices- A Comparative Case Study Of Maruti Suzuki India Limited And Tata Motors Limited. *International Journal Of Business Management And Scientific Research, 25*, 44-51.
- Paweł Mielcarz, D. O. (2018). Working Capital Management through the Business Cycle: Evidence from the Corporate Sector in Poland. *Contemporary Economics, 12*(2), 223-236.
- Podile Venkateswararao, .. H. (2018). Working Capital Management in a Small Enterprise - A Case Study of Power Oxides Pvt. Ltd. *International Journal of Scientific Research and Reviews, 7*(3), 607-617.
- R. Sivaranjani, M. B. (2016). A Comparative Analysis of Working Capital Management Among Top 5 NSE Listed Indian Steel Companies. *International Journal for Innovative Research in Science & Technology, 2*(11), 821-828.
- Radharamanan, A. O. (2011). Analysis of Effects of Working Capital Management on Corporate Profitability of Indian Manufacturing Firms. *International Journal of Business Insights & Transformation, 5*(1), 71-76.
- Rameshbhai, A. T. (2021). Working Capital Management and Its Impact on Profitability in Tyre Industry: A Study of Selected Companies. *Journal of Advanced Research in Economics and Administrative Sciences, 2*(1), 40-46.
- Richard Kofi Akoto, D. A.-V. (2013, december). Working capital management and profitability:Evidence from Ghanaian listed manufacturing firms. *Journal of Economics and International Finance, 5*(9), 373-379.
- Robles, T. C. (2018). The impact of Working Capital Management on firm profitability in different economic cycles: Evidence from the United Kingdom. *Economics and Business Letters, 7*(2), 70-75.
- Salla Marttonen, S. M. (2013). Profitable working capital management in industrial maintenance companies. *Journal of Quality in Maintenance Engineering, 19*(4), 429-446.
- Sangeetha, M. (2015, february). Determinants Of Working Capital-A Study With Special Reference To Indian Pharmaceutical Industry. *International Journal of Marketing & Financial Management, 3*(2), 46-51.

- Shahid Husain, s. a. (2016). The Effects of Working Capital Management on Profitability of Firms: Evidence from Agriculture and Food Industry of Kingdom of Saudi Arabia. *Journal of Emerging Issues in Economics, Finance and Banking, 5*(1), 1684-1698.
- Shajar, S. N. (2017, August). Relationship between Working Capital Management and Profitability of Automobile Companies in India: A Paradigm Shift towards Economic Strengthening. *International Journal of Trade, Economics and Finance, 8*(4), 210-216.
- Sharma, P. (2016). Impact of Working Capital Management on Firm's Profitability & Liquidity: An Empirical Study of TATA Motors Pvt. Ltd. *SMS Lucknow, 6*(1), 14-28.
- Sherry Bulin, A. B. (2016). Impact of working capital management on firm's profitability. *International Journal of Accounting & Business Management, 4*(2), 227-241.
- Shrotriya, D. A. (2016, July-August). Measuring Working Capital Trends in Indian Steel Industry. *International Journal of Trend in Research and Development, 3*(4), 354-361.
- Shubham Bansal, E. A. (2017). Impact of Working Capital Management on Profitability With special reference to ITC Company in India. *International Journal of Innovative and Emerging Research in Engineering, 4*(9), 1-5.
- Singh, D. (2012). Working Capital Management Practices across Industries in India. *Journal of Venture Capital & Financial Services, 6*(2), 42-51.
- Sinha, S. K. (2014, september). An Empirical Study On Efficiency Of Working Capital Management Of Indian Pharmaceutical Industry. *Pezzottaite Journals, 3*(3), 1253-1258.
- Soenen, H.-H. S. (1998). Efficiency of Worlcing Capitai iVianagement and Corporate Profitabiiity. *Financial Practtce And Education — FALL / WINTER, 8*, 37-45.
- Sukhija, R. K. (2019). Trends In Gross And Net Working Capital In Auto Industry In India. *IJRAR- International Journal of Research and Analytical Reviews, 6*(2), 786-790.
- Sumathi, N. (2018). Comparative Study Ofworking Capital Management On Profitability Of Jsw Steel Ltd And Tata Steel Ltd. *International Journal of Research in Applied Management, Science & Technology, 3*(2).
- Syed Jamal Abdul Nasir bin Syed Mohamad, N. N. (2016, july). A Study on Relationship between Inventory Management and Company Performance: A Case Study of Textile Chain Store. *Journal of Advanced Management Science, 4*(4).
- T, S. K. (2013). A Study On Working Capital Management Through Ratio Analysis With Reference To Karnataka Power Corporation Limited. *National Monthly Refereed Journal Of Research In Commerce & Management, 2*(12), 80-88.
- Taghizadeh Khanqah Vahid, G. E. (2012). Working capital management and corporate performance: evidence from Iranian companies. *Procedia - Social and Behavioral Sciences, 62*, 1313 – 1318.

- Tanveer Bagh, M. I. (2016). The Impact of Working Capital Management on Firms Financial Performance: Evidence from Pakistan. *International Journal of Economics and Financial Issues, 6*(3), 1097-1105.
- Titto Varghese, K. K. (2014). Impact of Working Capital Management on Firm Profitability: A Case Study of HUL Ltd., India. *International Journal of Financial Management, 4*(4), 56-66.
- Vinod, R. (2014, June). Evaluation of working capital management on profitability of Indian automobile Indian industries. *International Journal On Engineering Technology and Sciences, 1*(2), 91-96.
- Viswanath M S, S. S. (2018). Analysis & Optimization Of Working Capital Management In Construction Industry. *International Journal of Management and Applied Science, 4*(7), 1-7.
- Xosé H. Vázquez, A. S.-L. (2016). Watch the working capital of tier-two suppliers: a financial perspective of supply chain collaboration in the automotive industry. *Supply Chain Management: An International Journal, 21*(3), 321–333.
- Zill-e-Huma, F. M. (2015). Impact of Working Capital on the Profitability a Case of Pakistan State Oil. *International Journal of Scientific & Engineering Research, 6*(10), 476-484.
- Zimon, G., & Tarighi, H. (2021). Effects of the COVID-19 global crisis on the working capital management policy: Evidence from Poland. *capital management policy: Evidence from Poland, 14*(4), 1-17.

BOOKS

- C. Paramasivan, T. (n.d.). *financial managemen.* New Delhi, Banglore, Chennai,
- Guwahati, Hyderabad, Mumbai, Kolkata,Ranchi,Jalandhar, Lucknow: New
- Age International Publishers.
- I.M.Panday. (2013). *Financial Managfement* (tenth ed.). New Delhi: vikas publishing house pvt.ltd.
- Kapil, S. (2011). *Financial Management.* New Delhi: Dorling Kindersley Pvt. Ltd.
- Kishore, R. M. (2015). *Financial Management* (8th Ed.). New Delhi: Taxmann Publication Ltd.
- P.M.Shah, P. (2015). *Financial Management.* Ahmedabad: Kumar Prakashan.
- Rajiv Srivastava, A. M. (2011). *Financial Management* (Second Ed.). New Delhi:
- Oxford Higher Education.

WEBSITS

- Automotive Industry: The Key Industry Drivers. (2012, june 30). Retrieved 9 22, 2021, from https://www.technofunc.com/index.php/domain-knowledge/automotive-industry/item/automotive-industry-the-key-industry-drivers: https://www.technofunc.com/
- (2019). Indian automotive sector: Creating future-ready organisations. Society of Indian Automobile Manufacturers. History of Automotive Industry. (2020). Retrieved 9 22, 2021, from https://www.technofunc.com/index.php/domain-knowledge-2/automotive-industry/item/history-of-automotive-industry: https://www.technofunc.com/
- Indian Automobile Industry. (2020). Retrieved 11 10, 2020, from https://www.indianmirror.com/indian-industries/automobile.html: www.indianmirror.com
- Indian Automobile Industry Analysis. (2020, 10 21). Retrieved 11 10, 2020, from https://www.ibef.org/industry/automobiles-presentation: https://www.ibef.org/
- Chaphalkar, K. (23, 9 2015). Automobile Industry – Original Equipment Manufacturers (OEMs) and Auto Component Manufacturers (ACM). Retrieved 1 2021, 13, from https://investorsareidiots.com/retirement-investments-equity-fixed-income-currencies-commodities-economy/home/home-2/homespage/2015/09/automobile-industry-original-equipment-manufacturers-oems-and-auto-component-manufacturers-acm/: https://investorsareidiots.com/
- KAVAN MUKHTYAR, C. M. (2019). Indian Automobile Sector: Creating Future-Ready Organisations. Ahmedabad, Bengaluru, Chennai, Delhi NCR,Hyderabad, Kolkata, Mumbai and Pune.: SIAM (SOCIETY OF INDIAN AUTOMOBILE MANUFACTURIING).
- Kiekland, G. (2019, july 11). How new technologies have changed the automotive industry. Retrieved october 17, 2021, from https://www.oponeo.co.uk/: https://www.oponeo.co.uk/blog/how-new-technologies-have-changed-the-automotive-industry
- Lyati, M. M. (2021). Characteristics of the Automotive industry in 2021. Retrieved 10 17, 2021, from https://vocal.media/wheel/characteristics-of-the-automotive-industry-in-2021: https://vocal.media/
- Mishra, P. (2021). Types of Automobiles. Retrieved october 17, 2021, from https://www.mechanicalbooster.com/2014/10/types-of-automobiles.html: https://www.mechanicalbooster.com/
- THARYAN, R. P. (2020, August). Rip 2020 Indian Auto Industry. Retrieved 11 10, 2020, from https://www.magzter.com/stories/Automotive/Motown-India/Rip 2020-Indian- Auto-Industry: https://www.magzter.com/

ANNEXURE - I NAME OF THE 25 AUTOMOBILE COMPANIES

1. Ashok Leyland Ltd
2. Atul Auto Ltd
3. Bajaj Auto Ltd
4. Daimler India Commercial Vehicle Pvt Ltd
5. Fiat India Automobiles Ltd
6. Force Motors Ltd
7. Ford India Pvt Ltd
8. General Motors India Pvt Ltd
9. Hero Motocorp Ltd
10. Hindustan Motors Ltd
11. Honda Cars India Ltd
12. Hyundai Motor India Ltd
13. Maharashtra Scooters Ltd
14. Mahindra & Mahindra ltd
15. Mahindra Electric Mobility Ltd
16. Mahindra Two Wheelers Ltd
17. Mahindra Vehicles MFRS Ltd
18. Maruti Suzuki India Ltd
19. Scooters India Ltd
20. SML ISUZU Ltd
21. T V S Motors Co. Ltd
22. Tata International DLT Pvt Ltd
23. Tata Motors Ltd
24. Toyota Kirloskar Motor Pvt Ltd
25. VE Commercial Vehicles Ltd

ANNEXURE -II SOURCES USED FOR FINDING LITERATURE AND SECONDARY DATA

1. JSTOR
2. JGAT
3. PROJECTMUSE
4. PROVESS IQ
5. CAPITALINE
6. SCOPUS
7. WEB OF SCIENCES
8. SPRINGER

.

ABOUT THE AUTHORS

Brief Profile of Dr. Avani H. Raval

B.Com, M.Com, Ph.D.- Finance, years of Academic Experience. At Present Assistant Professor - at Insititution of Advance Research The University of Inovation, Gandhinagar, Gujarat, India. Contributed several Research Papers in National and International Journals.

Brief Profile of Dr. Ashvin R. Dave

B.Com, M.B.A., IICWAI, Ph.D.- Finance, 44 years of Industrial and Academic Experience. At Present Professor - Finance and Member Academic Council at Pandit Deendayal Energy University (NAAC A++ Ranking), Gandhinagar, Gujarat, India. He is also Honorary Academic Advisor at Kaushalya - The Skill University, Ahmedabad, Gujarat, India.

Contributed several Research Papers in National and International Journals. Consultant for NHAI Infrastructure Projects.

ABOUT THE BOOK

This book deliberates on scientific approach to working capital management in the automobile sector. In view of globally competitive world managing working capital especially in automobile industry where the components and assembly play important role. Using several scientific techniques the book aims to locate key variables for better working capital management.

This book aims to cater to the long felt needs of students, practitioners and other researcher

EMPYREAL PUBLISHING HOUSE

ISBN 978-93-93810-18-2

9 789393 810182

www.empyrealpublishinghouse.com