Ph.D Thesis

on

Working Capital Management Practices: A Study of Small and Medium Enterprises (SMEs)

Submitted in fulfillment of the requirement for the degree of

DOCTOR OF PHILOSOPHY

by
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CERTIFICATE

This is to certify that thesis entitled **"Working Capital Management Practices: A Study of Small and Medium Enterprises (SMEs)"** is being submitted by **Mr. Harsh Pratap Singh (ID No: 2012RBM9535)** to the Malaviya National Institute of Technology, Jaipur for the award of the degree of **Doctorate of Philosophy** is a bonafide record of original research work carried out by him. He has worked under our guidance and supervision and has fulfilled the requirement for the submission of this thesis, which has reached to the requisite standard.

The results contained in this thesis have not submitted to any other University or Institute for the award of a degree or diploma

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CANDIDATE DECLARATION

I, Harsh Pratap Singh (2012RBM9535) declare that the work presented in the thesis entitled "Working Capital Management Practices: A Study of Small and Medium Enterprises (SMEs)" is my own work, I further declare that:

1. The work has been done while in candidature for Ph.D. degree at MNIT, Jaipur.

2. Where I have consulted the published work of other, the same has been clearly attributed.

3. Where I have quoted from the work of others, the source has been given, with the exception of such quotations; this thesis is entirely my own work.

4. I have acknowledged all main sources of help.

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Harsh Pratap Singh

ABSTRACT

SMEs play a very important role in all economies worldwide through their contribution in employment generation and gross domestic product (Sunday, 2011; Burgstaller & Wagner, 2015). In general, SMEs are involved in carrying out diverse economic activity and are considered to be the backbone of economic growth and development in developing and developed economies (Kumar &Rao, 2015). SMEs are one of the most dynamic agents of growth and account for almost 80% of the global economic growth (Jutla *et al*., 2002).

However, it seems that although SMEs have enormous potential, their performance still falls below expectation in many developing countries (Arinaitwe, 2006). SMEs face more challenges than ever before; therefore, financial management-related issues become vital to ensure the success of businesses (Filbeck & Lee, 2000). Especially the management of working capital is among the most important aspects of overall financial management practices of any organization. Berryman (1983) and Dunn & Cheatham (1993) stated that improper WCM is the primary reason for small business failures in the UK and the USA.

Although WCM is an integral part of corporate finance, this area of corporate finance is less explored in the literature. But there has been a paradigm shift in the area of WCM after the global financial crisis (GFC) of 2007-08. The GFC has brought back the focus of practitioners on WCM (Enqvist *et al*., 2014). However, development in the literature of WCM is very limited in scope (Singh & Kumar, 2014). The primary focus of researchers has been on studying the relationship between WCM efficiency and profitability of a firm (Jose *et al*., 1996; Shin & Soenen, 1998; Deloof, 2003; Padachi, 2006; Garcia-Teruel & Martinez-Solano, 2007; Raheman & Nasr, 2007) or on identifying the various determinants of WCM (Chiou *et al.,* 2006; Narender *et al*., 2008; Nazir & Afza, 2009; Mansoori & Muhammad, 2012).

Research related to how firms manage working capital in an organizational context is very limited. Few studies such as Smith & Sell (1980), Belt & Smith (1991), Burns & Walker (1991), Peel & Wilson (1996), Zhao (2011), Orobia *et al.* (2013), and Padachi & Howorth (2014) have captured practices related to WCM.

Smith & Sell (1980), Belt & Smith (1991), and Zhao (2011) performed their research in the context of large firms operating in well-developed economies like Australia and the USA. However, their findings may not apply to SMEs for several reasons. Firstly, SMEs may differ from large firms in terms of formal processes used in WCM. Secondly, SME owners may not have the same level of financial sophistication as do corporate treasurers in large firms. Similarly Burns & Walker (1991) and Peel & Wilson (1996), captured the WCM practices of UK SMEs, but these study was conducted in 1991 and 1996 while major advancements in WCM had occurred after the GFC of 2008. A further limitation of these studies can be identified as ignorance of the behavioural aspects of finance managers, though the behavioural finance literature suggests that professionals are prone to various heuristic-driven biases (Kumar, 2009; Tversky & Kahneman, 1974).

Therefore, our present study aims at capturing contemporary WCM practices of SMEs in India by incorporating behavioural biases. This study also aims at identifying the different determinates of working capital requirements of SMEs in India. Our present study uses a quantitative research approach. To gain an insight into the WCM practices of SMEs and answer the research questions, primary and secondary data were used. Firstly, to document WCM practices and identify behavioural bias, a primary survey of SME owners was conducted in the state of Rajasthan (India) with the help of structure questionnaire. Questionnaire is developed with the help of literature in the field specially Belt & Smith (1991), Zhao (2011), and Burns& Walker (1991) and subsequently, suitable modifications were made to suit the context of Indian SMEs. Next, subject experts and officials of the Ministry of Micro Small and Medium Enterprises (MSMEs) were asked to review the initial draft of our questionnaire for content validity. After incorporating suggestions, a final draft was prepared and pilot tested on 38 SME owners. For the final data collection, the sample frame was derived by combining information from various business directories. Finally, a sample frame of 2316 firms was selected for this study and all the firms were contacted for data collection purpose. Multiple data collection methods including online survey, drop-off survey, telephonic survey and personal visits were used to capture the response of SME owners. Finally, responses from 282 SME owners were obtained. Out of which 13 responses were excluded due to incomplete information. Finally, a set of 269 usable responses were obtained. This resulted in an

11.61% response rate which is comparable with that of similar study of Zhao (2011) and Graham & Harvey (2001). It was found that Indian SMEs are primarily owned by male and the participation of females in SMEs is very limited in India. This study also found that focus of SMEs on WCM is limited and these SMEs lacks in term formalization of WCM. In addition to that SMEs are also not much aggressive in terms of financing rather they employ a moderate approach for financing. In terms of working capital financing also SMEs mainly rely on either internal financing or external financing in the form of cash credit/bank overdraft and suppliers credits. The results also show that the maximum numbers of SMEs consider the CCC as the key value metric of WCM because it takes into account all components of WCM (e.g. inventory management, receivable management and payable management) followed by NWC. In terms of relative importance of the individual components of WCM, that most important component in Indian SMEs is cash management followed by inventory management. For cash management majority of Indian SMEs have centralized cash management. In terms of utilizing other cash management approach, SMEs prefer to maintain emergency liquidity reserve to deal with unforeseen circumstances and avoid financial distress. However, Indian SMEs do not rely much on techniques like netting, bank diversification. In case of inventory management it is observed that SMEs have higher reliance on MRP and sales forecasting to reduce the production cost due to optimal investment in inventory and timely delivery of finished products to customers. On the contrary focus of SMEs on ERP system is low as these small sized firms do not have skilled in-house IT resources that can provide suitable inputs and proper guidance to the implementation team. Furthermore, they have budget constraints. Similar to the ERP system, the use of other sophisticated techniques such as JIT and EOQ is also very limited in SMEs.

In terms of effect of fundamental factors (firm size, firm age, level of financial leverage, firm performance and foreign sales, gender of owner, age of owner, education of owner and experience of owners) on WCM practices, the finding of this study make it conclusive that these fundamental factors have a bearing on overall WCM practices and related to its components. It is noted that firm-specific factors have a greater impact on WCM practices, especially firm size. On the contrary, the effects of owner-specific factors on WCM practices are moderate. These factors primarily affect the working capital financing of SMEs.

This study also found that decision making of SME owners related to WCM is not fully rational. SMEs owners are found to be prone to self attribution, overconfidence and loss aversion bias while tendency to exhibit anchoring bias is very low among them In addition to that demographic factors affect SMEs owners' tendency to exhibit these bias. Effect of gender, age and experience is found to be significant in case of self attribution. While in case of overconfidence it is found that old and experienced people are more prone to such bias. Similarly older people are also found to be more prone to loss aversion bias. Lastly in case of anchoring, it is found higher educated people are less likely to fall parry to anchoring bias. These behavioral biases also affect few area of WCM specially working capital financing.

This study also investigates the effects of firm age, firm size, and debt ratio, asset tangibility, operating cash flow, sales growth and profitability on WCRs of Indian SMEs. The secondary financial data of 254 SMEs is collected with the help of Prowess database then a panel data regression is applied to establish the relationship between WCR and its various determinants. The overall results of the study indicate that profitability measured by ROA and sales growth positively affects the WCRs and operating cash flow, asset tangibility, and leverage negatively affect the WCRs in Indian SMEs. In the case of firm size and firm age, we did not find any significant effect on WCR.

The findings of this study significantly contribute to both theory and practice. This study is probably the first to capture the WCM practices of SMEs in the Indian context. Thus, it contributes to the WCM literature by filling the gap. Additionally, this study also assesses the determinants of working capital requirements of SMEs in the Indian context that have not been documented in the literature. It also provides new empirical evidence of the effect of a firm's characteristics and owner/manager characteristics on WCM practices.

This study also contributes to the behavioural finance literature. This study updates the literature of behavioural finance by (1) testing the propensity of SME owners to fall a prey to self-attribution bias, overconfidence bias, anchoring bias and loss aversion bias and (2) determining how these biases affect the WCM decision making of SME owners.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

CA	Charted Accountant
CAPM	Capital Assets Pricing Model
CCC	Cash Conversion Cycle
CEO	Chief Executive Officer
CFA	Chartered Financial Analyst
CMIE	Center for Monitoring Indian Economy
CR	Current Ratio
DR	Debt Ratio
EBIT	Earnings Before Interest and Tax
EOQ	Economic Order Quantity
EPO	Economic Production Quantity
ERP	Enterprise Recourse Planning
FATA	Fixed Financial Assets to Total Assets
GDP	Gross Domestic Product
GFC	Global Financial crises
INR	Indian Rupees
IRR	Internal Rate of Return
JIT	Just In Time
MBA	Master of Business Administration
MRP	Material Requirement Planning
MSME	Micro, Small and Medium Enterprises
NEFT	Net Electronic Fund Transfer
NPV	Net Present Value
NWC	Net Working Capital
OCF	Operating Cash Flow
OLS	Ordinary Least Square
OLS	Ordinary Least Square
POT	Packing Order Theory
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Equity
RTGS	Real Time Gross Settlement
SCM	Supply Chain Management
SCS	Sunrise Consultancy Services
SG	Sales Growth
SME	Small and Medium Enterprise
UK	United Kingdom
USA	United States of America
VKI	Vishwakarma Industrial Area
WCM	Working Capital Management
WCR	Working Capital Requirement
WCT	Working Capital Turnover
WIP	Work in Progress

CHAPTER 1
INTRODUCTION AND PROBLEM STATEMENT

1.1 INTRODUCTION

The objective of this chapter is to present an overview of the thesis. This chapter is organized as follows: Section 1.2 provides a discussion on the background of this study, and it focuses on the contribution of Small and Medium-Sized Enterprises (SMEs) in both the general and Indian contexts. This section also includes the discussion on the problems faced by SMEs. Section 1.3 discusses the research problem and rationale for the study. Section 1.4 presents the research aims and objectives. Section 1.5 provides the specific research questions asked in this study, and section 1.6 outlines the research methodology used in this study. Section 1.7 gives the contributions of this thesis, and finally, section 1.8 presents the organization of this thesis.

1.2 BACKGROUND OF THE STUDY

SMEs play a very important role in all economies worldwide through their contribution in employment generation and gross domestic product (GDP) (Sunday, 2011; Burgstaller & Wagner, 2015). In general, SMEs are involved in carrying out diverse economic activity and are considered to be the backbone of economic growth and development in developing and developed economies (Kumar & Rao, 2015). SMEs are one of the most dynamic agents of growth and account for almost 80% of the global economic growth (Jutla *et al*., 2002). In developing countries,>90% of the firms, except agricultural firms, are SMEs and contribute significantly to the GDP (Stephen & Elvis, 2011). SMEs also help in achieving wider economic and socio-economic objectives such as employment generation and poverty alleviation (Cook, 2001). SMEs are vital for developing economies because they are more like labour-intensive units and thus create greater job opportunities at a lower capital cost than do large firms (Schmitz, 1995). SMEs are also complementary to large industries as ancillary units. SMEs also help in the development of domestic economy because of their effective, efficient, flexible and innovative entrepreneurial nature. In India, this sector is referred to as Micro, Small and Medium Enterprises (MSMEs)[i] and emerged as the most vibrant and dynamic sector of the Indian economy over the last five decades.

The MSME sector contributes significantly to the socio-economic development of India. MSMEs provide abundant employment opportunities at a relatively low capital cost as compared to the large industrial sector. They also help in reducing regional imbalances through industrialization of rural and backward areas. Similarly, the MSME sector ensures a more equitable distribution of the national income and wealth.

As per the annual report of the Ministry of Micro, Small and Medium Enterprises for the year 2015-16' ***'The Sector consisting of 51.1 million units, as of 2014-15, provides employment to over 117.13 million persons. The Sector also contributes about 37.54% to the total the Indian GDP (as on 2012-13)'.***

However, it seems that although SMEs have enormous potential, their performance still falls below expectation in many developing countries (Arinaitwe, 2006). In the present competitive environment, SMEs face more challenges than ever before; therefore, financial management-related issues become vital to ensure the success of businesses (Filbeck & Lee, 2000). Especially the management of working capital is among the most important aspects of overall financial management practices of any organization. Working capital management (WCM) primarily focuses on the composition of the current assets and current liabilities of a firm (Jamalinesari & Soheili, 2015). It includes decisions related to cash management, inventory management, accounts receivable management and accounts payable management. Effective WCM involves a trade-off between profitability and risk because the decisions which increase profitability subsequently result in an increased risk (García-Teruel & Martínez-Solano, 2007). Thus, WCM is an important yardstick to measure a firm's operational and financial efficiency (Modi, 2012).

Although effective WCM is important for firms of all sizes, in the case of SMEs it becomes relatively more important because a huge amount of money is usually tied up in different components of current assets (Banos-Caballero *et al.*, 2010). Banos-Caballero *et al.* (2010) also found that current assets accounts for 69% of the total assets in the case of Spanish SMEs. Unlike larger companies, SMEs have an even more limited source of funds and are less likely to have access to financial expertise. Therefore, it is important for them to manage current assets optimally. Effective WCM can make a substantial difference and lead either to the success or failure of an enterprise.

Smith (1973) argued that improper WCM results in a large number of business failures. Berryman (1983) and Dunn & Cheatham (1993) also stated that improper WCM is the primary reason for small business failures in the UK and the USA. Dodge *et al.* (1994) also identified that inadequate capital, improper cash flow management and inventory control cause small business failure.

1.3 RESEARCH PROBLEM AND RATIONALE FOR THE STUDY

The SME sector is seen as an important force in development of economy in any country. Although SMEs have enormous potential, their performance still falls below expectation in many developing countries (Arinaitwe, 2006). Dodge *et al.* (1994) identified that inadequate capital, improper cash flow management and inventory control cause small business failure. Similarly, Berryman (1983) and Dunn & Cheatham (1993) stated that improper WCM is the primary reason for small business failures in the UK and the USA. Thus, to improve SME performance, it is necessary to study WCM in the SME context.

Although WCM is an integral part of corporate finance and contributes to the success of operational, financing and investment decisions, this area of corporate finance is less explored in the literature. Over the last forty years, major theoretical developments in the corporate finance literature have been reported with respect to the management of longer-run financial decisions of a firm, especially a firm's valuation, earning management, capital structure, capital budgeting, etc. (Garcia-Teruel & Martinez-Solano, 2007). However, research related to shorter-run or working capital decision making seems to be relatively neglected (Pass & Pike, 1987; Kwenda & Holden, 2014).

Despite the above there has been a paradigm shift in the area of WCM after the global financial crisis (GFC) of 2007-08. The GFC has brought back the focus of practitioners on WCM (Enqvist *et al*., 2014). The GFC caused several large financial institutions and banks to go bankrupt, and this ultimately resulted in a credit crunch situation for corporate firms (Polak, 2012). This phenomenon forced them to look for internal sources to free up much needed cash and cope with the situation of limited availability of external finance. The optimum level of working capital provides an opportunity to increase the company's free cash flow (Ganesan, 2007). Although WCM

is gaining importance among corporate treasurers, shareholders, loan providers and legal advisers, it has often been overlooked by academics.

Development in the WCM-related literature is very limited in scope (Singh & Kumar, 2014). The primary focus of researchers has been on studying the relationship between WCM efficiency and profitability of a firm (Jose *et al*., 1996; Shin & Soenen, 1998; Deloof, 2003; Padachi, 2006; Garcia-Teruel & Martinez-Solano, 2007; Raheman & Nasr, 2007) or on identifying the various determinants of WCM (Chiou *et al.,* 2006; Narender *et al*., 2008; Nazir &Afza, 2009; Mansoori & Muhammad, 2012).

Research related to how firms manage working capital in an organizational context is very limited. Few studies such as Smith & Sell (1980), Belt & Smith (1991), Burns & Walker (1991), Peel & Wilson (1996), Zhao (2011), Orobia *et al.* (2013), and Padachi & Howorth (2014) have captured practices related to WCM.

Smith & Sell (1980), Belt & Smith (1991), and Zhao (2011) performed their research in the context of large firms operating in well-developed economies like Australia and the USA. However, their findings may not apply to SMEs for several reasons. Firstly, SMEs may differ from large firms in terms of formal processes used in WCM. Secondly, SME owners may not have the same level of financial sophistication as do corporate treasurers in large firms. Thirdly, institutional, cultural and other differences may exist between firms operating in developed economies and developing economies like India. In India, financing costs tend to be higher and capital is less readily available than in developed countries. India also has somewhat different accounting practices, a smaller manufacturing base, and a less open multi-national firm orientation.

Burns & Walker (1991) and Peel & Wilson (1996), captured the WCM practices of UK SMEs, but these study was conducted in 1991 and 1996 while major advancements in WCM had occurred after the GFC of 2008. Orobia *et al.* (2013) conducted a qualitative inquiry through an interview of 10 small business owners to capture WCM. These findings however cannot be generalized due to the small sample size studied. A further limitation of these studies can be identified as ignorance of the behavioural aspects of finance managers, though the behavioural finance literature suggests that professionals are prone to various heuristic-driven biases (Kumar, 2009; Tversky & Kahneman, 1974).

However, to best of author's knowledge no extensive study has been done on capturing WCM practices of SMEs in India. Therefore, our present study aims at capturing contemporary WCM practices of SMEs in India by incorporating behavioural biases

1.4 RESEARCH OBJECTIVES

The background of this study and the problem statement discussed in the previous sections clearly indicate the need to study WCM among Indian SMEs. This study is conducted to capture contemporary WCM practices of Indian SMEs. The objectives of our study are threefold: (1) It primarily aims at documenting contemporary practices adopted by Indian SMEs for managing working capital. (2) This study also aims at identifying the factors affecting the working capital requirements of SMEs. (3) It identifies whether SME owners exhibit behavioural biases in decision making and how these biases affect their WCM decisions. More specifically, the major objectives of this research are as follows:

1(a) To investigate policies, practices and techniques currently used by SMEs to manage working capital.

1(b) To identify whether these policies, practices and techniques are affected by firm-specific factors and decision makers' characteristics.

2 (a) To investigate the propensity of decision makers to exhibit behavioural biases.

2 (b) To identify whether the propensity of decision makers to exhibit behavioural biases is affected by their demographic factors.

2 (c) To identify whether behavioural biases affect the WCM policies, practices and techniques adopted by SMEs.

3. To investigate the factors determining the working capital requirements of SMEs.

1.5 RESEARCH QUESTIONS

Given the aims of this research, as discussed in the previous section, seven specific research questions were developed, which are as follows:

1. What are the contemporary working capital policies, practices and techniques adopted by SMEs?
2. Do fundamental characteristics of firms affect the WCM practices of SMEs?
3. Do owner characteristics affect the WCM practices of SMEs?

4. Are SME owners prone to behavioural biases when making managerial decisions?
5. Is their tendency to exhibit behavioural biases affected by their demographic characteristics?
6. Do various behavioural biases affect the WCM practices of SMEs
7. What are the factors that determine the working capital requirements (WCR) of SMEs?

1.6 OVERVIEW OF THE RESEARCH METHODOLOGY

Our present study uses a quantitative research approach. To gain an insight into the WCM practices of SMEs and answer the research questions, primary and secondary data were used. Firstly, to document WCM practices and identify behavioural bias, a primary survey of SMEs was conducted. Secondly, to identify different determinants of WCR, secondary data were obtained from the Prowess database and analysed.

1.6.1 Research Design for the Primary Survey

To achieve the first two research objectives, a survey of manufacturing SMEs was conducted in the state of Rajasthan with the help of a structured questionnaire. The questionnaire was prepared from the surveys of Burns & Walker (1991), Belt & Smith (1991) and Zhao (2011), and subsequently, suitable modifications were made to suit the context of Indian SMEs. Next, subject experts and officials of the Ministry of Micro Small and Medium Enterprises (MSMEs) were asked to review the initial draft of our questionnaire for content validity. After incorporating suggestions, a final draft was prepared and pilot tested on 38 SME owners. For the final data collection, the sample frame was derived by combining information from various business directories, namely, business directory of Sunrise Consultancy Services (SCS), SME business directory published on Bizbaya.com and database from Vishwakarma Industries Association (VKI), Jaipur. Finally, a sample frame of 2316 firms was selected for this study and all the firms were contacted for data collection purpose. Multiple data collection methods including online survey, drop-off survey, telephonic survey and personal visits were used to capture the response of SME owners. Finally, responses from 282 SME owners were obtained. Out of which 13 responses were excluded due to incomplete information. Finally, a set of 269 usable responses were obtained. This resulted in an 11.61%

response rate which is comparable with that of a similar study of Zhao (2011) and Graham & Harvey (2001).

1.6.2 Research Design for Secondary Data Analysis

To identify the various determinants of working capital requirements in SMEs, financial data related to different variables were collected from the CMIE Prowess database which is a database of financials of Indian companies. This study analysed panel data of manufacturing SMEs operating in India from 2010 to 2014. A sample of SMEs were selected as per the definition provided in *The Micro, Small and Medium Enterprises Development Act, 2006.* Precisely, those firms meeting the following criteria were selected in the sample:

1. Investment in plant and machinery of up to INR 10 crores
2. Complete financial data of all the variables available for the period 2010-2014

In addition to the above criteria, firms with abnormal values, such as negative total assets, debt ratio >1, were eliminated from the sample. Finally, a sample of 254 SMEs was obtained for this study.

1.6.3 Methods of Analysis

In this study, primary data were collected through a questionnaire and secondary financial data were obtained from the Prowess database. Data collected from our survey were compiled and coded with the help of *SPSS version 23.0*, whereas data collected fromthe Prowess database were analysed with the help of *E-Views version 8*. A different set of statistical methods was adopted to analyse the data because this study had multiple objectives to achieve:

- To identify and summarize the results related to WCM practices and behavioural biases, in this study descriptive analysis was used. Frequency tables and cross-tabulation were used for purposes of analysing and presenting the descriptive findings of this study.
- To compare the WCM practices on the basis of fundamental and behavioural factors, bivariate analysis was performed. In this survey, responses were collected on a nominal and metric scale. Thus, to compare WCM practices

captured on a nominal scale, the chi-square test of association was used, and for responses measured on a metric scale, the independent t-test was used

- To assess the effect of owner's demography on the tendency to exhibit various behavioural biases, a binary logistic regression was used.
- To identify determinants of working capital requirements in SMEs, a panel regression was used.

1.7 THESIS CONTRIBUTIONS

This study contributes significantly to both theory and practice. This study not only makes several new contributions but it is also an extension to the extant literature on WCM practices. This study is probably the first to capture the WCM practices of SMEs in the Indian context. Thus, it contributes to the WCM literature by filling the gap. Additionally, this study also assesses the determinants of working capital requirements of SMEs in the Indian context that have not been documented in the literature. It also provides new empirical evidence of the effect of a firm's characteristics and owner/manager characteristics on WCM practices.

This study also contributes to the behavioural finance literature. Behavioural finance suggests that professionals are prone to various heuristic-driven biases (Kumar, 2009; Tversky & Kahneman, 1974); thus, this study updates the literature by (1) testing the propensity of SME owners to fall a prey to self-attribution bias, overconfidence bias, anchoring bias and loss aversion bias and (2) determining how these biases affect the WCM decision making of SME owners.

With respect to practical contribution, the findings of this study would also be helpful to government agencies, namely, the Ministry of MSMEs for policy making purpose. The present study highlights the differences in the practices of MSMEs with respect to WCM which is very useful for policy makers to best suit the need of MSMEs in terms of financing and other organizational support. Similarly, for practitioners, the findings of this study will serve as a benchmark for policy formulation related to WCM.

1.8 ORGANIZATION OF THESIS

The rest of this thesis is divided into seven chapters and organized as follows: Chapter 2 reviews the existing literature on WCM and behavioural biases. It is mainly divided into

six sections. The first section provides an overview of SMEs in India and discusses their contribution to the Indian economy. Second section reviews the literature related to WCM and its components and the third section provides a detailed description of the existing research in the field of WCM practices. The fourth section provides a list of fundamental factors that affect WCM practices of a firm. Fifth section of this chapter provides a detailed description of behavioural biases affecting SMEs decision making and their effect on WCM practices. Finally the last section of this chapter identifies various determinants of WCR and reviews the existing literature on the theme.

Chapter 3 focuses on the research methodology adopted in this study. Specifically, this chapter explains the study area, the study unit, the population, design of the questionnaire, the methods of data collection and data analysis methods. It also describes the hypotheses based on the discussion in chapter 2. The analysis and presentation of results are included in four different chapters. Chapter 4 presents a detailed analysis and results of the primary survey related to the overall WCM practices and its components. Chapter 5 explains the effect of fundamental factors on WCM practices of SMEs. Chapter 6 documents the behavioural biases encountered in the decision making of SME owners and also identifies the effects of behavioural biases on WCM practices of SMEs. Chapter 7 presents the results for secondary data analysis on determinants of WCR of SMEs in India.

Finally, chapter 8 concludes the thesis by providing a summary of the key findings of the empirical analysis. It also provides a discussion related to the contribution of this study, scope and limitation of the study and finally it proposes possible opportunities for future research.

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[i] *In accordance with the provision of Micro, Small & Medium Enterprises Development (MSMED) Act, 2006, Micro, Small and Medium Enterprises (MSMEs) are classified into two groups.*

Manufacturing Sector	
Enterprises	***Investment in plant & machinery***
Micro	*Does not exceed twenty five lakh rupees*
Small	*More than twenty five lakh rupees but does not exceed five crore rupees*
Medium	*More than five crore rupees but does not exceed ten crore rupees*
Service Sector	
Enterprises	***Investment in equipment***
Micro	*Does not exceed ten lakh rupees*
Small	*More than ten lakh rupees but does not exceed two crore rupees*
Medium	*More than two crore rupees but does not exceed five crore rupees*

CHAPTER 2
REVIEW OF LITERATURE

2.1 INTRODUCTION

This chapter reviews the applicable literature, which includes 6 major sections, that is, Introduction to small- and medium-sized enterprises (SMEs) in India, working capital management (WCM) practices, fundamental factors affecting WCM, behavioural finance theory, determinants of working capital requirements (WCRs) and research gap and conceptual framework for the Study.

Section 2.2 of this chapter provides an overview of SMEs in India and includes two major aspects: (1) definition of SMEs in India and (2) contribution of SMEs to the Indian economy. Section 2.3 provides a theoretical overview of WCM and its components, that is, cash management, inventory management, receivable management and payable management. Section 2.4 of this chapter provides the review of the existing literature on WCM practices while section 2.5 specifically focus on existing research in the field of WCM in Indian context. Section 2.6 reviews the literature on the effect of fundamental factors affecting financial decision making. This section provides an overview of firm-specific factors (Size of firm, age of firm, foreign sales, financial leverage and financial performance) and owner-specific factors (Age of owner, experience of owner, education of owner and gender of owner). Further, section 2.7 provides a brief description of behavioural finance, which also includes a theoretical overview of various behavioural biases (self- attribution bias, overconfidence bias, loss aversion bias and anchoring bias) related to managerial decision making. Section 2.8 deals with the existing research related to determinants of WCRs. It also explains the relationship of various determinants with WCRs. Finally in section 2.9 research gaps in the existing literature and conceptual framework of this study is presented.

2.2 SMEs IN INDIA

SMEs play a very important role in all economies worldwide through their contribution in employment generation and gross domestic product (GDP) (Sunday, 2001; Burgstaller & Wagner, 2015). In general, SMEs are involved in carrying out diverse economic activitiesand are considered to be the backbone of economic growth

and development in developing and developed economies (Kumar & Rao, 2015). SMEs are one of the most dynamic agents of growth and account for almost 80% of the global economic growth (Jutla *et al*., 2002). In developing countries,>90% of the firms, except agricultural firms, are SMEs and contribute significantly to their GDP (Stephen & Elvis, 2011). SMEs also help in achieving wider economic and socio-economic objectives such as employment generation and poverty alleviation (Cook, 2001). SMEs are vital for developing economies because they are more of labour-intensive units and thus create greater job opportunities at a lower capital cost than do large firms (Schmitz, 1995). SMEs are also complementary to large industries as ancillary units. SMEs also help in the development of the domestic economy because of their effective, efficient, flexible and innovative entrepreneurial nature.

In India, this sector is referred to as Micro, Small and Medium Enterprises (MSMEs) and has emerged as the most vibrant and dynamic sector of the Indian economy over the last five decades. To address policy issues related to the MSME sector, The Micro, Small and Medium Enterprises Development (MSMED) Act was enacted in 2006. The MSMED Act 2006 facilitates the development of MESMEs and also helps in enhancing their competitiveness. This act formulated the first-ever legal framework for recognition of the concept of "enterprise" which comprises both manufacturing and service entities.

Table 2.1 Classification of MSMEs

This table explains the different categories of MSMEs as per the as per the MSMED Act (2006)

Manufacturing Sector	
Categories	**Investment in plant & machinery**
Micro Enterprises	Does not exceed twenty-five lakh rupees
Small Enterprises	More than twenty-five lakh rupees but does not exceed five crore rupees
Medium Enterprises	More than five crore rupees but does not exceed ten crore rupees
Service sector	
Categories	**Investment in equipment**
Micro Enterprises	Does not exceed ten lakh rupees
Small Enterprises	More than ten lakh rupees but does not exceed two crore rupees
Medium Enterprises	More than two crore rupees but does not exceed five crore rupees

Source: MSME Annual Report 2015-16

The definition of MSMEs in India is provided separately for firms engaged in manufacturing/production/ processing of goods and firms providing/rendering services. The MSMED Act, 2006, classifies manufacturing enterprises on the basis of investment in plant and machinery and service enterprises on the basis of investment in equipment. Finally, Table 2.1 provides the classification of MSMEs as per MSMED Act, 2006.

2.2.1 Contribution of SMEs to the Indian Economy

SMEs are recognized as a priority in almost every country. In India, this sector contributes significantly to the socio-economic development of the country. MSMEs provide abundant employment opportunities at a relatively low capital cost as compared to the large industrial sector. The employment intensity of MSMEs is estimated to be four times greater than that of large enterprises. They also help in reducing regional imbalances through industrialization of rural and backward areas. Similarly, the MSME sector ensures a more equitable distribution of the national income and wealth. Although large enterprises largely created the islands of prosperity in the ocean of poverty, small enterprises have succeeded in fulfilling the socialistic goals of providing equitable growth. Small industries also help large industries by supplying them ancillary products. In terms of monitoring the contribution of SMEs, the Government of India periodically conducts the All India Census of the MSME sector. As per the latest Census (Fourth Census, conducted with base reference year 2006-07), where in the data were collected till 2009 and results published in 2011-12, the total number of working enterprises is 361.76 lakhs. These enterprises employed 805.23 lakh people as on 2006-07 which kept on increasing. As per the latest annual report of MSME 2015-16, 'the total estimated working enterprises are 510.57 lakhs employing 1171.32lakh people as on financial year 2014-15'.

Similarly, based on the export data maintained by the Director General of Commercial Intelligence & Statistics, Ministry of Commerce and the information available with this Ministry about MSME products having significant export, the share of MSMEs in India's total export, for the years 2012-13, 2013-14 and 2014-15, has been estimated as 43.00%, 42.38% and 44.70%, respectively. In addition, MSMEs also contribute significantly to the GDP of the country. As per the annual report of

MSMEs 2015-16, the contribution of MSMEs to the GDP as on 2006-07 is 35.13% which is estimated to increase to 37.54% as on 2012-14. Due to this multifold contribution, the MSME sector has emerged as the backbone of the Indian economic development.

Table 2.2 Performance of MSMEs in India

This table provides the data about the total working MSMEs, total people employed in MSMEs and total market value of fixed assets of MSMEs in India

Year	Total Working Enterprises (in lakhs)	Employment (In lakhs)	Market value of Fixed Assets (in crores)
2006-07	361.76	805.23	868,543.79
2007-08*	377.36	842.00	920,459.84
2009-09*	393.70	880.84	977,114.72
2009-10*	410.80	921.79	1,038,546.08
2010-11*	428.73	965.15	1,105,934.09
2011-12*	447.64	1011.69	1,182,757.64
2012-13*	467.54	1061.40	1,268,763.67
2013-14*	488.46	1114.29	1,363,700.54
2014-15*	510.57	1171.32	1,471,912.94

* Figures are projected

Source: Annual Report of MSME 2015-16

Table 2.3 Contribution of the MSME sector to the GDP and output

This table provides the data about the contribution of MSMEs in GDP and total manufacturing output of India.

Year	Gross value of the output of the MSME Manufacturing sector (Rs. in crores)	Share of the MSME sector in total GDP (%)			Share of MSME Manufacturing output in total manufacturing output (%)
		Manufacturing sector MSME	Service Sector MSME	Total	
2006-07	1198818	7.73	27.40	35.13	42.02
2007-08	1322777	7.81	27.60	35.41	41.98
2009-09	1375589	7.52	28.60	36.12	40.79
2009-10	1488352	7.45	28.60	36.05	39.63
2010-11	1653622	7.39	29.30	36.69	38.50
2011-12	1788584	7.27	30.70	37.97	37.47
2012-13	1809976	7.04	30.50	37.54	37.33

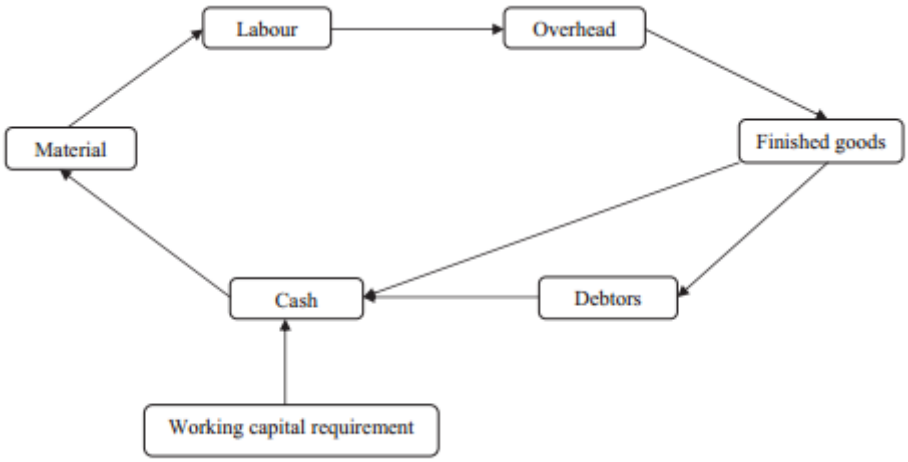
Source: MSME Annual Report 2015-16

2.3 WORKING CAPITAL MANAGEMENT

Corporate finance decisions can broadly be divided into two categories: (a) long-term financial decisions and (b) short-term financial decisions. Long-term financial decisions primarily deal with firm valuation, earning management, capital structure, capital budgeting, etc. In contrast, short-term decision making entails decisions related to liquidity of a firm, especially WCM, which focuses on the composition of current assets and current liabilities of a firm (Jamalinesari & Soheili, 2015).WCM involves decision making primarily related to all aspects of financial management which influence size and effectiveness of the working capital. The management of working capital is essential for the smooth functioning and financial health of all kinds of businesses. Working capital investment and its financing arise primarily from business operations related to purchasing, producing and selling. Investment in working capital does not provide any defined return, but it is necessary for the day-to-day operations of a business. This is the reason why working capital investments are required to be optimal in every business organization. Some companies make huge investments in working capital to reduce the financial distress and risk, but this over-investment in working capital generates problems related to cash flow and also leads to reduction in a firm's value. It is normally observed that money invested in working capital components is very high in proportion to the total assets of a firm. It thus becomes the responsibility of the finance manager to effectively use working capital components (Padachi, 2006). Every firm has to maintain certain levels of investment in working capital components to cope with the situation of uncertain cash inflows and cash outflows. These situations may arise due to various factors such as disconnected supply chains processes, inadequate trade credit terms and suboptimal loan decisions. According to Pass & Pike (1987), WCM has two main objectives: (1) liquidity and (2) profitability, but not at the cost of one another. Every firm should maintain a trade-off between these two objectives to increase WCM efficiency. Thus, it is very important for a firm to assess the expected profitability and expected risk before determining the optimum investment in working capital components (Garcia-Teruel & Martinez-Solano, 2007). Chakraborty (2008) advocated that excessive working capital negatively affects return on capital employed which is a measure of the overall efficiency of a business. On the contrary, too little working capital may also reduce the earning capacity of the fixed capital employed. Lambrix & Singhvi

(1979) recommended that investment in working capital can be optimized by reducing the time gap between the physical flows from receipt of raw material from suppliers to delivery of finished goods to customers. Investment in working capital can also be reduced by improvement in terms of which a firm sells goods and collects cash. Lambrix & Singhvi (1979) also advocated that investment in working capital can also be reduced by improving terms on which firms purchase goods and eliminating administrative delays due to deficiency of paperwork. Pass & Pike (1987) identified that requirement of working capital is usually linked to the processes of earning and expenditure. This process involves the concept of operating cycle of activities. The operating cycle involves a regular cash outflow to suppliers of raw material and cash inflow from customers and debtors. Because of this cycle it is very important for working capital managers to match cash inflows and outflows over a period of time. Figure 2.1 exhibits an extended view of the working capital cycle with the arrows indicating movement of cash.

Figure 2.1 Working Capital Cycle



Source: Singh & Kumar (2014)

The working capital cycle starts with the acceptance of an order by the firm from its customer. Raw materials are then purchased, certain processes are applied and finally raw material is converted into finished goods. Stocks are held as current assets till the customer buys the product. The firm has to finance the business for the whole of the operating cycle. Generally, WCM involves two basic questions: (1) what is the appropriate amount and composition of various working capital components? and (2) How should these components be financed? Therefore, it is important to

understand various components of WCM which are discussed in the following sections:

2.3.1 Inventory Management

Inventories are one of the most important components of working capital and constitute the largest component of current assets in many business firms. The term 'inventory' refers to the stockpile of production a firm is offering for sale and the components that make up the production. Inventory normally includes three basic elements such as raw materials, work-in-progress (WIP) and finished goods. Raw materials include the goods and consumables that have been purchased from suppliers and stored in a warehouse but have not yet been taken into the production process. While WIP includes those products that have left the raw material storage area but are not yet ready for sale to the customers. In this process, the working capital manager must focus on minimizing buffer stocks and reducing the production cycle. Finally, finished goods refer to the stock which is ready for sale and awaiting delivery to customers. Holding of these three components of inventory requires a huge fund on which the firm has to bear interest and opportunity cost. Thus, the primary focus of inventory management is on turnover of inventory as quickly as possible, without losing sales from stock-outs. This can only be possible by having an optimum level of investment in inventories in the firm. Inventory levels should neither be too low to affect the production process negatively nor too high to affect profitability adversely by blocking of funds and lost opportunity cost. Thus, both surplus and insufficient investments in inventories are not desirable for the success of any firm (Fabozzi & Peterson, 2003). One of the important factors in inventory management is the firm's ability to forecast the demand accurately and then respond to that demand. Effective response to market demand is primarily dependent on how responsive the firm's suppliers are to supplying materials for production and sale. Thus, better relationships with suppliers are important for firms to deal with fluctuating market demand (Bowersox *et al.,* 2003). In addition, effective inventory management needs proper coordination among the sales, procurement, production and finance departments. The marketing personnel usually identify a change in market demand and this change should be communicated and worked into purchase and manufacturing schedules and the finance manager must arrange suitable financing needed to support the inventory

and production. The absence of proper coordination among deferent departments and improper sales forecasting can lead to business failure (Brigham & Houston, 2003). Kanet (1984) explored theories of successful inventory management, inventory control and developments in inventory management. There are many situations when effective stock monitoring, control and distribution lead to the success of any businesses. Many techniques, such as *'just-in-time'* philosophy, material requirement planning, and economic order quantity (EOQ) and economic production quantity (EPQ), are very useful for proper inventory management.

2.3.2 Receivable Management

According to Gentry *et al.* (1979), "*receivables represent delay in the inflow of cash, which must be financed by the firm*". This means that receivables are an opportunity cost to firms in the economic sense. Fabozzi & Peterson (2003) also explained that by allowing customers to purchase goods and services on credit, accounts receivables are generated which are also known as trade credit. Michalski (2008) defined accounts receivable management as a process of decision making if the firm decides to grant trade credit terms to its customers. Shim & Siegel (2000) also described receivable management as a process of selecting customers for credit sales and then speeding up collections from those customers. Before granting credit to customers, firms have to know that credit sales require funds to be tied up in receivables which can be invested elsewhere and earn some return for the business. Thus, accounts receivable management involves a trade-off between minimizing the risk of allowing the delayed payment from unreliable customers and gaining new customers by a more generous trade credit policy. The decision whether to extend trade credit determines "level and quality of account receivable". If firms tie up too much funds in accounts receivable due to a too generous trade credit policy, this increases opportunity cost to the firm. Moreover, probability of bad debts from risky customers may become costly to firms, although a generous credit policy can increase sales. However, firms should decide their level of accounts receivable so that benefits are more compared to expenses. Thus, it is very desirable to establish a good policy that controls advantages of offering credit with associated costs. Receivable management requires an optimum credit policy for customers which includes credit terms, credit standard and collection policy. Credit policy primarily deals with the question of how long a firm should

extend credit to its customers? It also includes various types of discounts to persuade creditors for prompt payment. In contrast, credit standards deal with how a firm should decide which customers qualify for credit. Lastly, finance managers must determine the collection policy which deals with how aggressive the firm should be at collecting overdue accounts, whether or not to take legal action against late paying creditors or to use factoring services of any collection agencies. Firms may use different collection procedures due to the volume and values of receivables. Mian & Smith (1992) developed and tested hypotheses that explain the choice of accounts receivable management policies and analysed the incentives that extend trade credit and policy choices. They found several incentives for firms to extend trade credit rather than cash, including cost advantages, market power and tax advantages.

2.3.3 Payable Management

Accounts payables are created out of credit purchase of raw material and other consumable stores. Accounts payables are normally the largest source of a firm's short-term financing. Payables are the easiest and a low cost source of short-term financing for a business. The concept of using account payables for financing business operations is the reverse of accounts receivables. Accounts payable is a very essential factor in a firm's working capital financing, and a key indicator of the overall operational effectiveness. Similar to accounts receivable, accounts payable also requires a trade-off regarding volume of accounts payable. If payables are too high, a firm may soon have trouble paying bills on time, which will then result in expensive penalties. In contrast, if payables are too low, the firm may not be able to use the full credit period and may have to pay cash, which could have been used in other business operations. Delaying payments to suppliers beyond the credit period however results in extra financing costs for the firm. This practice may also adversely affect a firm's image (i.e. credit background) and create problems in future purchases, forego cash discount savings and weaken a healthy financial supply chain (Rafuse, 1996), although this practice provides an extra buffer for business financing. Thus, management of payables is very critical for the success of firms as it constitutes the largest portion of short-term debt. It represents almost 40% of the current liabilities of a nonfinancial business firm (Brigham & Houston, 2003).

2.3.4 Cash Management

Cash is an important element in WCM because it provides liquidity to firms, which is very important for day-to-day operation of a business. Every firm maintains a certain level of cash holding, which may vary from business to business. Cash is held for a variety of motives, for example, precautionary, transactional and speculative. There are various advantages and disadvantages of holding cash. Large cash holding results in a low risk of running out of cash and having to borrow more on short notice with high financing cost. On the contrary, a holding excessive cash balance does not provide any monetary returns that can be obtained instead by investing cash. Cash management involves a trade-off between risk and return of holding cash. Cash management helps to maintain an optimum level of cash to maintain liquidity of the firm. In other words, cash management is concerned with optimizing the amount of cash available, maximizing interest earned by spare funds not required immediately and reducing losses caused by delays in transmission of funds. Cash management is a process of effectively forecasting, collecting, disbursing, investing, and planning for cash which a firm needs for smooth operations of its business. Management of cash is a critical job because it is the most vital, yet the least productive asset of a business. A business must have enough cash to meet its obligations because creditors, employees and lenders expect to be paid on time. The cash management approach may vary from firm to firm depending on the nature and cycle of a firm's operation. Cash management directly affects working capital performance (Boisjoly & Izzo, 2009). Thus, a business firm needs to have a proper cash management strategy for synchronizing cash inflows and outflows through cash budgeting and cash forecasting. Tsamenyi & Skliarova (2005) investigated international differences in cash management practices. The results of their case study suggest that cash management concepts, such as re-invoicing centres, leading and lagging, netting and cash flow forecasting, are used worldwide. They also explained that banking and economic environment, efficiency of financial system, level of inflation and market regulations influence cash management practices.

2.4 REVIEW OF THE EXISTING LITERATURE ON WCM PRACTICES

Management of financial affairs is one of the most important '*value adding*' activity of an organization and thus should be an inseparable part of the top management's

decision-making process (Chandra, 2015). The recent theoretical developments in the financial literature have helped managers in improving the financial decision making of business organizations. However, these developments are not uniform across all areas of financial management. Major theoretical advances have been reported with respect to the management of longer-run financial decisions of the firm. However, research related to shorter-run or working capital decision making seems to be relatively neglected (Pass & Pike, 1987).Several business failures are reported to be due to the inability to manage current assets and current liabilities (Smith, 1973). Many enterprises went bankrupt despite healthy operations and profits owing to mismanagement of working capital (Kargar & Blumenthal, 1994). Although effective WCM is important for firms of all sizes, in the case of SMEs, it becomes relatively more important because a huge amount of money is usually tied up in different components of current assets in SMEs (Banos-Caballero *et al.*, 2010). Banos-Caballero et al., 2010 also found that current assets account for 69% of the total assets in the case of Spanish SMEs. Unlike larger companies, SMEs have an even more limited source of funds and are less likely to have access to financial expertise. Dunn & Cheatham (1993) stated that improper WCM is the primary reason for small business failures in the UK and the USA. Dodge *et al.* (1994) identified that inadequate capital, improper cash flow management and inventory control cause small business failure. Therefore, it is important for them to manage current assets optimally. Effective WCM can make a substantial difference by leading to the success or failure of an enterprise.

Although WCM is an integral part of corporate finance and contributes to the success of operational, financing and investment decisions, this area of corporate finance is less explored in the finance literature. However, there has been a paradigm shift in the area of WCM after the global financial crisis (GFC) of 2008. The GFC caused several large financial institutions and banks to go bankrupt, and this ultimately resulted in a credit crunch for corporate firms (Polak, 2012). During this crisis period, companies worldwide faced a decrease in demand for their products and services. This phenomenon forced them to look for internal sources to free up much needed cash and cope with the situation of limited availability of external finance. Kesimli & Gunay (2011) found that firms with effective WCM practices performed better during a crisis than other firms that did not adopt these practices. WCM is now

considered as a strategically important decision, which can be a source of competitive advantage to a firm (Yucel & Kurt, 2002). Although WCM is gaining importance among corporate treasurers, shareholders, loan providers and legal advisers, it has often been overlooked by academics. Development in the WCM-related literature is very limited in scope (Singh & Kumar, 2014). The primary focus of researchers has been on studying the relationship between WCM efficiency and profitability of a firm (Jose *et al*., 1996; Shin & Soenen, 1998; Deloof, 2003; Padachi, 2006; Garcia-Teruel & Martinez-Solano, 2007; Raheman & Nasr, 2007) or on identifying the various determinants of WCM (Chiou *et al.,* 2006; Narender *et al*., 2008; Nazir & Afza, 2009; Mansoori & Muhammad, 2012). Research related to how firms manage working capital in an organizational context is very limited.

This study primarily aims at capturing contemporary WCM practices in Indian SMEs Thus, it is essential to review the previous literature on the subject. A detailed review of the literature on WCM suggests that there are only a few studies that have investigated WCM practices from the late 1970s till the present. Some of these studies have mainly focused on identifying the management's perceptions towards working capital approaches. The literature on WCM mainly advocates two working capital approaches: (1) situational change approach and (2) risk avoiding approach. Smith & Sell (1980) explained that the situational change approach advocates flexibility in working capital policy to cope with a changing demand situation. In the situational change approach, firms usually maintain a high level of inventory to eliminate the risk of stock-outs (Deloof, 2003) and to prevent production disruptions (Garcia-Teruel & Martinez-Solano, 2007).

On the contrary, the risk-avoiding approach advocates a static working capital policy. In this approach, the main focus is on reducing investment in working capital and its various components (Smith & Sell, 1980). Gentry *et al*. (1979) advocated that firms in France, India and the USA follow the risk avoidance approach in managing working capital components because they always try to reduce the investment in WCM components to the level that is just required to support future sales. Belt & Smith (1991) however concluded that Australian firms follow the situational change approach by maintaining flexibility in working capital policy to become more adaptable to changing environments.

Sagan (1955), in his paper on the theory of WCM, highlighted the importance of WCM and concluded that WCM is vital for the financial health of any firm. Walker (1964) was the first to propose a theory for WCM by empirically testing three propositions based on the risk-return trade-off of WCM. Walker (1964) attempted to establish a relationship between the level of working capital and rate of return. He found that a negative relationship exists between these two variables. However, the major theoretical development in working capital research was the qualitative research of Gentry *et al.* (1979). These investigators conducted a survey to determine the primary objective of WCM in a firm. The results of the study evince that the primary objective of WCM is to provide cash, receivables, inventory and short-term credit necessary to support anticipated sales. Many researchers later adopted this study as a pioneering study. Researchers including Smith & Sell (1980), Belt & Smith (1991), Kim *et al.* (1992), Burns & Walker (1991), Peel & Wilson (1996), Wagner Ricci & Morrison (1996), Khoury *et al.* (1999), Ricci & Vito (2000), Zhao (2011), Orobia *et al.* (2013), and Padachi & Howorth (2014) adopted a qualitative approach to examine working capital practices.

Smith & Sell (1980) conducted a survey of Fortune 1000 companies by categorizing their sample into two groups of 200 firms each. They investigated the approach adopted by these firms to manage working capital. The results of their study show that most of the firms adopt the situational change approach for WCM. This means their WCM policy is flexible and changes according to market demand.

Belt & Smith (1991) used the study of Smith & Sell (1980) for comparison of WCM practices in the USA and Australia. Belt & Smith (1991), using a similar research instrument as that of Smith & Sell (1980), found a significant difference in WCM practices between both countries. The policy setting and daily management of working capital accounts of Australian firms are more centralized than that of US firms. Australian firms seem to lag behind US firms in inventory, credit collection and marketable securities management. In addition, large US industrial firms are able to fund their working capital need without the use of collateral securities. They also found that Australian firms rely more on short-term bank loans for working capital financing than do US firms.

Kim *et al.* (1992) conducted a survey of Japanese firms operating in the USA to capture their WCM-related practices. The objective of their research was to determine the main purpose of WCM in Japanese firms and determine the types of financing sources used to fund working capital needs. The researchers administered a research questionnaire to 326 financial managers of Japanese manufacturers in the USA out of whom 95 managers finally responded to the survey. The findings of this research advocated that the primary objective of WCM in Japanese companies was to maintain a proper level of the current assets for supporting anticipated sales followed by minimization of short-term borrowing cost and providing a financial buffer, respectively. In terms of the source of finance for working capital needs, they found that the majority (48.3%) of Japanese firms take loans from Japanese banks operating in the USA. They also found that 29.3% of the firms arrange funds from their parent company in Japan to finance working capital needs.

The study by Wagner Ricci & Morrison (1996) was geared towards finding out international WCM practices of multinational firms regarding international cash management operations, international sales and foreign exchange activities. They conducted a survey of Fortune 200 companies and collected responses from international treasury managers of 124 firms. This study revealed that firms seem to have a high level of sophistication in managing international cash operations. The finding of the study reveals that >50% of sample firms follow the decentralized approach. International working capital decisions are mostly taken at the local organizational level. In terms of international cash management, 80% of the firms use wire transfer often followed by 50% of firms which often pool their cash transactions. In addition, Fortune 200 companies mainly use open accounts and letter of credit for cash collecting and cash management.

Khoury *et al.* (1999) extended the survey of Belt & Smith (1991) to capture the WCM practices of Canadian firms and compare these with practices of Australian and US firms. They used BOSS database obtained from the Ministry of Industry, Science, and Technology and collected 57 usable responses. The results of the study suggest that only 7% of Canadian firms follow a formal policy for WCM. The responsibility of policy formulation related to WCM is more in the hands of the board of directors or president, in Canadian firms than in US or Australian firms. Khoury *et al.* (1999) also found that 28.5% Canadian firms use cautious policy for financing,

whereas only 10.2% have an aggressive policy for the same. These results for Canadian firms are fairly consistent with the results obtained for Australian and US firms in earlier surveys. In terms of stock replenishment, they found a significant difference among the practices of Canadian, US and Australian firms. Canadian firms mainly decide on the amount and timing of shock replenishment on an adhoc basis, whereas US and Australian firms mainly use a computerized inventory control system for stock replenishment.

Ricci &Vito (2000) surveyed top 200 UK companies based on market capitalization and collected the response of 102 companies to capture international WCM practices. Their results showed a higher level of internationalization among UK firms as 86% of firms sell overseas. In terms of international cash management, UK firms have a moderately high sophistication. It was found that 68% of firms often use wire transfer for international cash transaction followed by electronic fund transfer and pooling of cash. On the contrary, it was found that the use of netting is limited in UK firms as it is complex and requires establishment of a netting system.

Zhao (2011) precisely examined different overall WCM practices and practices related to WCM components. This included cash management, inventory management, receivable management and debt management in large Australian firms. He conducted a survey of ASX-listed companies with the help of a semi-structured questionnaire which resulted in 120 responses. In addition to prior studies on WCM practices, Zhao (2011) incorporated the behavioural aspect of corporate treasurers in managing WCM for the first time. Zhao (2011) documented the WCM policy, key value metrics, cash management approach, inventory management approach and debt management approach used in large Australian firms. In addition, an attempt was also made to assess the effect of firm-specific factors and manager-specific factors on WCM practices and policy. Results of this study indicate that WCM practices of Australian firms were affected by fundamental factors such as firm size, credit rating, foreign sales, listing, firm performance, gender, age and education of corporate treasurers. In addition to fundamental factors, Zhao (2011) found that corporate treasurers exhibit behavioural biases, namely, overconfidence bias, self-serving bias, loss aversion bias, anchoring and representativeness bias. These biases also affect the policy and practices adopted by corporate treasurers related to WCM.

In the case of SME research, Burns & Walker (1991) were the first to focus on WCM practices. Burns & Walker (1991) surveyed 184 small manufacturing firms in the USA. They used a modified version of the questionnaire used in study of Smith & Sell (1980). They found that in small manufacturing firms 39% of the total assets are in the form of working capital, whereas only 24% of the time of the finance manager is spent on management of working capital. In terms of WCM policy, they found that small US firms have informal policy handled by the president. In addition, they also found that WCM policy is not reviewed regularly in small firms. In terms of working capital monitoring, small firms mainly depend on the current ratio for monitoring the efficiency of WCM. For managing and monitoring cash, most of the small firms prepare a cash budget on a weekly basis. The results of this study also show that small firms use an aging schedule to monitor the credit behaviour of customers. Similarly, for deciding the time and quantity of stock replenishment, small firms rely on a computerized inventory control system.

Peel & Wilson (1996) conducted a primary survey to capture the financial management and WCM practices of small firms in the UK. For a sample of 84 small firms, they found that increasing profitability is the most preferred objective of financial management in these firms. They also found that the majority of small firms use the payback period method for taking capital budgeting decisions. They also found that small firms in the UK mainly fund their working capital needs from retained profit. Finally, the study of Peel & Wilson (1996) also aimed at identifying the frequency of review of various financial management policies. The results of this study show that small firms most frequently review the bad debt level and then review capital budgeting and credit policy. In addition, they found that small firms do not use techniques such as EOQ and factoring for their WCM.

Howorth & Westhead (2003) studied the WCM practices of SMEs operating in the UK. They found that SMEs faced various difficulties in arranging finance especially for working capital. They also explained the importance of networking and bootstrapping finance as a source of working capital financing in SMEs. Howorth & Westhead (2003) investigated WCM practices of SMEs in the UK. They explored different factors associated with WCM practices of SMEs and segmented the companies based on these factors. The findings of their study suggest that small firms

are not a homogeneous group with regard to WCM routines. There was a significant variability in WCM practices in SMEs.

Agyei-Mensah (2012) focused his study on WCM practices of small firms in the Ashanti region of Ghana. He followed a similar methodology, as advocated in the literature, and conducted a survey of SMEs selling general goods including clothing, electrical and plumbing materials with the help of a questionnaire. He found that only 17% of SMEs make use of computers to manage their WCM. Further, 57% of SMEs always prepare a cash budget to monitor and manage cash. Furthermore, it was observed that SMEs mainly depend on owners'/managers' experience to decide the optimum level of cash holdings. Similarly, in the case of inventory management, >90% of SMEs decide on the optimum level of inventory based on owners'/managers' experience. These firms do not know anything about the EOQ model.

Orobia *et al.* (2013) examined the actions of small business owners in managing working capital with the help of the interview method. They conducted an interview of 10 owners/ managers in Uganda and analysed their response with the help of the content analysis technique. They found that small businesses intuitively plan, record, monitor and control their working capital. They also concluded that small business owners do not need the same degree of sophistication for WCM planning, monitoring and controlling. They need not focus much on conventional record keeping; rather, they need to focus more on the cash flow management information system. This study revealed that experience, perceptions and attitudes of owners/managers also influence the WCM practices of small businesses.

2.5 REVIEW OF EXISTING RESEARCH ON WCM IN INDIA CONTEXT

The research in the field of WCM is very much limited in the context of Indian firms. Majority of prior research on WCM in India is primarily focused either on measuring the efficiency of WCM or identifying the effect of WCM efficiency on firm's profitability. A study of Anand & Gupta (2001) used three financial parameters Cash conversion efficiency (CCE), Days of Operating Cycle (DOC), Days of Working Capital (DWC) to assess the WCM performance of the Corporate India using data of 427 companies over the period 1998-99 to 2000-01 for each company and for each industry. Results of this study showed that the average CCE ratio, DOC and DWC of

overall Corporate India for the period of 1998-99 to 2000 -2001) are 15.08%, 188days and 259 days respectively.

Vishnani & Shah (2007) in their study made an attempt to assess the effect of WCM policy on profitability of Indian Consumer Electronics companies. This study used a sample of 23 listed consumer electronics companies to determine the relationship between liquidity and profitability. With the help of regression analysis, this study found that ROCE is significant negative association with working capital cycle, debtor's collection period and inventory holding period. On the contrary the ROCE is found to be negatively associated with creditor's payments periods.

Similarly, Sharma & Kumar (2011) also focused their research on examining the effects of working capital on profitability of Indian firms. They collected data about a sample of 263 non-financial BSE 500 firms listed at the Bombay Stock (BSE) from 2000 to 2008 and evaluated the data using OLS multiple regression. The findings of this study significantly depart from the various international studies conducted in different markets. The results of this study revealed that working capital management and profitability is positively correlated in Indian companies. The study further found that inventory of number of days and number of day's accounts payable is negatively correlated with a firm's profitability, whereas number of days accounts receivables and cash conversion period exhibit a positive relationship with corporate profitability.

Following the similar approach of Sharma & Kumar (2011), the study of Ray (2012) also investigated the relationship between working capital management components and the profitability of Indian manufacturing firms using a sample of 311 manufacturing firms for a period of 14 years from 1996-97 to2009-10. The results of the study suggests a strong negative relationship between the measures of working capital management including the number of days accounts receivable and cash conversion cycle, financial debt ratio with corporate profitability. Finally, no significant relationship is found between firm size and its net operating profit ratio.

A study of Kaur & Singh (2013) primarily analysied the WCM performance of 164 manufacturing companies classified in to 19 industries over a period of 2000-2010. This study used working capital score calculated by using normalised values of Cash Conversion Efficiency, Days Operating Cycle and Days Working Capital. Further, this study also tested the relationship between working capital score and

profitability measured by Income to Current Assets and Income to Average Total Assets. The results of this study also supported the earlier studies revealing that efficient management of working capital significantly affects profitability.

Kaur (2014) made an attempt to first measure the efficiency of WCM in Indian healthcare companies. This study calculated Performance Index, Utilization Index and Efficiency Index of Working capital to determine the overall efficiency of WCM. The results this study revealed that most of the healthcare firms have performed well as far as the performance of working capital, utilization of current assets to generate sales and efficiency of working capital is concerned.

Kaur & Kaur (2014) studied the various determinants of WCR of Indian Automobile companies. This study used the financial data of four firms i.e. Maruti Suzuki India Ltd., Force Motors Ltd., Hindustan Motors Ltd. and Mahindra & Mahindra Ltd for a period of 10 years from 3003-04 to 2012-13. By using working capital ratio as a proxy for WCR, this study found that current ratio and tangibility of assets were the significant determinants of WCR of automobile companies. In addition to that current ratio was found to be positively related to the WCR on the contrary tangibility was found to be negatively related to the WCR of automobile companies.

2.6 FUNDAMENTAL FACTORS AFFECTING WCM PRACTICES

The literature on corporate finance advocates that various firm-specific factors affect the financial performance and managerial decision making of business firms (Zhao, 2011). Belt & Smith (1991) advocated that fundamental factors such as a firm's size and financial performance affect the WCM practices of business firms. They identified various differences in the financial practices of small and large firms as well as differences in WCM of higher profitable and lower profitable firms. With regard to SMEs, Peel & Wilson (1996) also concluded that firm size affects the WCM practices of SMEs as they found a significant difference in the WCM practices of micro and small firms. Further, Graham & Harvey (2001) extended their analysis and assessed the effect of more fundament factors like level of financial leverage, foreign sale and growth of firm on corporate finance practices. Graham & Harvey (2001) also advocated that not only firm characteristics but also the characteristics of the decision maker affect the corporate finance practices of firms. They also assessed the effect of

chief executive officer's (CEO's) age, experience and education on corporate finance decisions. This argument was also supported by Zhao (2011) and Afrifa (2013). Afrifa (2013) found the effect of SME owners' experience and education on WCM practices of UK SMEs. Zhao (2011) also investigated the effect of firm characteristics and the decision maker's characteristics on decision related to WCM practice of large Australian firms. Zhao (2011) concluded that factors such as size, firm performance, industry and age, gender, education of the working capital manager also affect managerial decisions. In line with the findings of the literature, in our study, we investigated the effect of the following fundamental factors on WCM practices of Indian SMEs.

2.6.1 Firm Size

Horrigan (1965) explained that firm size usually affects various financial ratios of a business. Graham & Harvey (2001) found that firm size has a significant effect on corporate finance decisions of US firms. They found that in terms of financing, large firms significantly differ from small firms. Large firms rely more on long-term debt to reduce the risk of refinancing in bad times than do small firms. In terms of WCM practices, Belt & Smith (1991), Peel & Wilson (1996) and Zhao (2011) investigated the effects of firm size on decisions related to management of working capital. Peel & Wilson (1996) found that the size of a firm affects the financing preference of UK SMEs. They found that micro firms are more inclined towards retained earnings to fund their financial requirements. On the contrary, small firms rely more on leasing and hire purchasing as a source of financing. Peel & Wilson (1996) also found a significant difference between the capital budgeting practices of micro and small firms. In the case of Australian firms, Zhao (2011) found that size difference is an important factor in cash management, risk management. Further, they also concluded that large firms attach higher importance to external factors such as exchange rate, interest rate and technological advancement than do small firms. In line with the above arguments, our study aims at assessing the effect of firm size on WCM practices of Indian SMEs.

2.6.2 Financial Leverage

Level of firm leverage is another very important factor which affects the corporate decision making in a business. Graham & Harvey (2001) investigated the effect of leverage on corporate finance practices of Fortune 500 companies. They found that high levered firms significantly differ from low levered firms in terms of their approach to capital budgeting and cost of capital. In terms of capital budgeting, Graham & Harvey (2001) found that high levered firms preferred techniques such as net present value (NPV), internal rate of return as compared to low levered firms for evaluating capital projects. Similarly, for calculating cost of equity, high levered firms rely more on capital assets pricing model (CAPM) than do low levered firms. Likewise, Graham & Harvey (2001) reported that high levered firms focus more on credit rating to determine the amount of debt for their firm as compared to low levered firms. In addition, high levered firms also differ from low levered firms in terms of financing as it is difficult for high levered firms to obtain external financing for working capital needs and other regular expenditure. In line with the finding of previous studies, our study incorporates the leverage in WCM and aims at identifying the effect of leverage on WCM practices of SMEs in India.

2.6.3 Firm Performance

In the field of WCM, Belt & Smith (1991), Wu (2001) and Zhao (2011) assessed the effect of financial performance on WCM practices of firms. Wu (2001) found that financial performance affects the working needs of firms. Similarly, Zhao (2011) also found that profitable firms are more concerned with minimizing foreign exchange risk and interest risk than are non-profitable firms. Further, profitable firms are more effective in terms of management and control of receivables than are less profitable firms. The literature on WCM mainly focuses on assessing the effect of efficient WCM on a firm's profitability while less is known about how profitability affects WCM especially in SMEs. Thus, the present study investigates the effect of profitability of firms on WCM practices of SMEs in India.

2.6.4 Foreign Sales

Bernard & Jensen (2004) found that firms with or without export have a significant difference in terms of productivity. They concluded that export-orientated firms have a higher productivity than do non-exporting firms. Similarly, export orientation also

affects WCM practices of a firm because working capital financing needs of an exporting firm are more than those of a non-exporting firm because an exporting firm has to maintain a higher investment in accounts receivable to support foreign sales. Zhao (2011) also found that foreign sales affect the key value metrics of WCM in Australian firms as exporting firms rely more on the cash conversion cycle (CCC) to monitor WCM efficiency as compared to non-exporting firms. In addition, they also found that exporting firms differ from non-exporting firms in terms of cash management. Firms with foreign sales are more inclined to using approaches such as leading and lagging, emergency liquidity reserves and diversification of bank transactions for cash management than firms without foreign sales. In line with the above arguments, the present study also aims at assessing the effect of foreign sales on WCM practices of Indian SMEs.

2.6.5 Firm Age

Evans (1987) found that firm age is a very important determinate of firm dynamics. Evans (1987) advocated that age of a firm negatively affects firm growth and probability of a firm's failure. Similarly, Robb (2002) studied the financing practices of old and young firms and found that the age of a firm significantly affects the financing choice of the firm. Robb (2002) found higher reliance on debt as compared to old firms. Further, it is also observed that young firms have greater difficulty in obtaining loans from commercial banks as a higher risk is associated with young firms. On the contrary, it is found that young firms rely more on non-banking institutions for debt financing. In the literature, the effect of firm age on WCM practices is not much studied. Thus, this study made an attempt to identify the effect of firm age on WCM practices of Indian SMEs.

2.6.6 Age of Manager

The age of a decision maker is an important factor in the decision making process because it affects the choice of alternatives in any decision. Previous research has also advocated that older people significantly differ from their young counterparts in terms of their decision making due to their higher risk aversion (Mueller *et al*., 1980; Chagnon & McKelvie, 1992). Due to higher risk aversion, elderly managers tend to be more conservative in terms of their financing. In addition, elderly people also have the fear of failure which makes them more cautious (Botwinick, 1969; Wallach &

Kogan, 1961). Due to their higher fear of failure, elderly people are less likely to try something new and innovative in their decisions. They also find it difficult to cope with change in their surroundings. In terms of financing, Graham & Harvey (2001) found that young CEOs rely more on the matching approach for financing than older CEOs. In terms of working capital financing, Zhao (2011) found that young corporate treasurers rely more on cash advances, whereas elderly corporate treasurers have a higher preference of share capital for financing to avoid operational risk. In line with the findings of previous studies, the present study aims at assessing the effect of the age of SME owners on WCM practices of Indian SMEs.

2.6.7 Education of Manager

There is an argument related to the effect of education on people, which advocates that education is likely to increase the ability of people (Zhao, 2011). It is considered that the decisions of higher educated people are more informed and make decisions based on analytical reasoning. Magoutas *et al.* (2012) advocated that education of employees is very important to improve the productivity in a fast changing environment. Higher educated people have better problem solving skills and are able to adopt changes better than are lower educated people Magoutas *et al.,* 2012). Many researchers like Agiomirgianakis *et al.* (2002) and Psacharopoulos & Patrinos (2004) found education to be positively related to firm performance. Graham & Harvey (2001) reported that CEOs with MBAs perform differently from non-MBA CEOs in capital budgeting and capital structure decision making. In terms of WCM, Afrifa (2013) found that higher educated SME owners/managers are better able to manage all aspects of WCM. Similarly, Zhao (2011) also found that postgraduate corporate treasurers rely more on complex measures like return on investment for monitoring and managing the efficiency of WCM. On the contrary, undergraduate corporate treasurers rely more on simple measures like networking capital. In line with previous studies, the present study aims at assessing the effect of education of SME owners on WCM practices of Indian SMEs

2.6.8 Experience of Manager

Work experience of a manager is as equally important as education is to improve financial performance (Chiliya & Roberts-Lombard, 2012). Employees with higher experience have diverse knowledge which makes them use a more innovative

approach for higher performance of their firms (Almeida *et al.*, 2003). In addition, higher work experience also minimizes the chances of errors in decision making (Afrifa, 2013). Experience has been cited as an important factor affecting many aspects of SME firms. In the case of WCM, Agyei-Mensah (2012) found that work experience of managers is important for effective management of working capital. Afrifa (2013) also concluded that higher experienced SME managers are better able to negotiate credit terms with suppliers and customers. In addition, experienced SME managers are also able to use computerized accounting systems to control inventory levels. In line with previous studies, the present study aims at assessing the effect of experience of SME owners on WCM practices of Indian SMEs.

2.6.9 Gender of Manager

Human attitude and behaviors also affect the choice of financial decisions. Previous researchers have concluded that males and females significantly differ in terms of their risk taking capacity and attitude (Jianakoplos & Bernasek, 1998; Johnson & Powell, 1994). It was found that females are more risk averse compared to males who have a higher capacity to take risk. The difference in risk perception of males and females also affects their choice of decisions. Weir & Willis (2000) advocated that female managers are more likely to face financial problems than are male business managers. Similarly, Hira & Mugenda (2000) found that females are more inclined to negative attitude than are males. This higher degree of negative attitude also makes female managers more conservative than male managers. In addition, females have a higher chance to act impulsively to any situation without using much analytical thinking than their male counterparts (Dittmar *et al.*, 1995). In terms of WCM practices, Zhao (2011) was the first to analyse the effect of gender on decision making of large Australian firms related to working capital. Zhao (2011) found that males are greater risk takers in terms of WCM decision making and like to aim at outperforming industry average targets. On the contrary, female corporate treasurers rely more on the goal setting approach. They also found a significant difference between the financing preferences of male and female corporate treasurers. Female corporate treasurers rely more on internal funds and are reluctant to issue debt even when there are insufficient internal funds. In line with the previous studies, the present study aims at assessing the effect of gender of SME owners on WCM practices of Indian SMEs.

2.7 BEHAVIOURAL BIASES

Behavioural finance integrates traditional finance theories, psychology and sociology to explain human behaviour in financial decisions (Ricciardi & Simon, 2000). Behavioural finance primarily investigates the effect of psychological factors on the decision making of financial agents (Sewell, 2007). Traditionally, behavioural factors of financial agents are not incorporated in theoretical and empirical research in the field of finance (Mendes-da-Silva *et al.,* 2015).Classical finance theories assume that individuals are rational and make decisions based on expected utility maximization (Singh *et al.,* 2016). However, reality does not match these assumptions as in practical situtations individuals are not fully rational. There is growing literature in the field ofexperimental psychology to indicate that people generally deviate from this traditional paradigm of rationality (Hackbarth, 2008).Their decision making is influenced by various behavioural factors such as moods, emotions and personality traits (De Bondt & Thaler, 1987; Todd & Gigerenzer, 2003). Behavioural researchers have taken the view that finance theories should also consider observed human behaviour. Behavioural finance researchers argue that financial agents are not fully rational and that their decisions are subject to various cognitive biases (Ritter, 2003). These cognitive biases can be caused either by heuristic decision processes or by using mental frames (Waweru *et al.,* 2008). Tversky & Kahneman (1974) explained that people have a tendency to use heuristics in complex and uncertain decision making situations. These heuristics however also force the decision maker to exhibit certain biases. Tversky & Kahneman (1974) were the first to introduce heuristic driven biases, namely, representativeness, availability bias and anchoring bias. In addition, Kahneman & Tversky (1979) also propounded the Prospect theory which explains the irrationality of people's behaviour during the assessment of risk under fairly uncertain decision making situations. Prospect theory advocates that the decision making process is also affected by the state of mind of decision makers. These biases affect the ability of individuals related to information processing in a decision making process.

Over the year, extensive literature has been developed on behavioural biases and researchers have identified a long list of biases which mainly includes Representativeness, Overconfidence, Anchoring, Loss aversion, self-attribution, mental accounting, overreaction, herding, etc. These biases influence the behaviour

and choice of decision makers and thus need to be researched on to get important insights into the decision making process (Kalra Sahi & Pratap Arora, 2012).The literature on behavioural finance advocates two approaches: The first approach deals with the behaviour of investors and the second approach deals with the behaviour of corporate managers (Baker *et al.,* 2004). The major development in the field of behavioural finance incorporates the behaviour of investors in their decision making. Researchers like Odean (1999), Barber & Odean (2001), Bhandari & Deaves (2006), Cheng (2007), Kalra Sahi & Pratap Arora (2012), Prosad *et al.* (2015), Rzeszutek *et al.* (2015), De Bondt & Thaler (1987), Peteros & Maleyeff (2013) and Tarim (2016) focused their research on assessment of behavioural factors and biases in investors' decisions. On the contrary, the literature related to irrationality of corporate finance managers is less developed (Baker *et al.,* 2004).The literature on behavioural corporate finance is primarily dominated by studies on the effect of behavioural biases like optimism and overconfidence on decision making in the context of investment decisions and decisions related to structure of financing (Baker *et al.,* 2004). Researchers such as Fairchild (2005), Hackbarth (2008) and Barros & Da Silveira (2008) studied the effect of overconfidence bias on capital structure decisions and concluded that overconfident managers tend to rely more on debt financing. Kida *et al.* (2001) analysed the effect of emotions and moods on capital budgeting decisions. Malmendier & Tate (2008) studied the role of overconfidence in the decision making of CEOs in the context of merger decisions and concluded that overconfident CEOs perform more merger activities than do other CEOs without overconfidence biases. However, evidence related to the effect of behavioural biases on short-term financial decisions especially those related to WCM is non-existent except for Ramiah *et al.* (2014) despite the fact that it is an important yardstick to measure a firm's operational and financial efficiency (Modi, 2012).

2.7.1 Self-attribution Bias

Self-attribution bias refers to people's tendency to attribute positive outcomes to their own ability and blame bad luck for negative outcomes (Miller & Ross, 1975; Hirshleifer, 2001; Shefrin, 2007). Langer & Roth (1975) explained this notion as "heads I win, tails it's chance". Similarly, Mishra & Metilda (2015) also explained that self-attribution is a combination of self-enhancing bias and self-protecting bias.

Self-enhancing bias forces people to attach credit to their own ability for successful outcome, whereas self-protecting bias refers to irrational denial of responsibility in the case of adverse outcome. Self-attribution bias also forces individuals to overlook their mistakes which subsequently make them overconfident (Gervais & Odean, 2001; Langer & Roth, 1975). According to Kafayat (2014), *"The motivational process e.g. self-enhancement and self-preservation combines with cognitive factors e.g. self-esteem and locus of control creates self-attribution bias".* Zuckerman (1979) argued that people exhibit self-attribution bias to maintain high self-esteem and feel good about themselves. The literature also indicates that men have a higher locus of control and high self-esteem, which forces them to exhibit self-attribution. Shuch Mednick & Weissman (1975), Rosenthal *et al.* (1996) and Deaux (1979) found that men tend to attribute success to ability and failure to luck more as compared to women. Although self-attribution affects investors' and managers' decision making, the literature is less developed in the case of self-attribution and its effect on managerial decision making (Billett & Qian, 2008). Billett & Qian (2008) focused on the self-attribution bias of CEOs and its effect on mergers and acquisition deals and concluded that high-order deals are motivated by previous positive acquisition experience. In terms of WCM decisions, Ramiah *et al.* (2014) found that corporate treasurers with this bias are more aggressive in financing and in techniques which are under their own control in managing working capital.

2.7.2 Overconfidence Bias

Overconfidence bias has been the centre of research in human judgement and corporate decision making (Hardman, 2009).The existing literature on behavioural finance makes it conclusive that the majority of people are overconfident about their own capabilities (Frank, 1935; Taylor & Brown, 1988). An overconfident person usually overestimates his/her ability and ignores the actual risk involved in any decision making (Kahneman & Riepe, 1998). Overconfident managers rely too much on their own judgement due to their feeling of superiority (Agrawal, 2012). Thus, they are also slow in combining the additional information about any decision making situation as they are confident in their initial decisions (Phillips & Wright, 1977). Entrepreneurs are especially likely to be overconfident (Ritter, 2003). According to Busenitz & Barney (1997), *"Overconfidence enables an entrepreneur to proceed with*

an idea before all the steps to that specific venture are fully known even though enormous uncertainties exist in this decision-making situation."

Montier (2000) collected responses of fund managers and found that 74% of them believed that they are above average. Overconfident investors usually avoid negative information related to stocks which can be useful for the decision of purchase or sale of stock (Shefrin, 2000). In addition, overconfident investors tend to trade excessively which usually results in poor returns (Barber & Odean, 2001).The literature demonstrates that both men and women are found to be prone to overconfidence bias (Lundeberg *et al.,* 1994). But men exhibit more confidence than women do, especially in the case of financial matters (Prince, 1993). Many research studies like Jaiswal & Kamil (2012), Singh *et al.* (2016), Barber & Odean (2001) and Mittal & Vyas (2011) found male investors to be more overconfident in their decision making. Similarly, Beckmann & Menkhoff (2008) found female financial experts to be more risk averse and less overconfident than their male counterparts. Researchers like Heath & Tversky (1991) and Frascara (1999) also concluded that experienced people are more likely to exhibit overconfidence biases as compared to inexperienced people. In general, past experience of making successful decisions makes people more overconfident. Kirchler & Maciejovsky (2002) found that the degree of overconfidence increases with an increase in the length of professional experience. The degree of overconfidence also increases with the increase in education level. This is supported by Bhandari & Deaves (2006) whose findings were in line with the argument that highly educated males are more likely to show overconfidence in their decision making. Researchers like Fairchild (2005), Hackbarth (2008) and Barros & Da Silveira (2008) studied the effect of overconfidence bias on capital structure decisions and concluded that overconfident managers tend to rely more on debt financing. In the case of working capital decisions, Ramiah *et al*. (2014) found that overconfident managers attach higher importance to liquidity, interest and credit risks.

2.7.3 Loss Aversion Bias

Loss aversion is one of the most important concepts in behavioural economics. Tversky & Kahneman (1991) suggested that people are loss averse and fear losses more that they value gain. Thus, loss aversion is a behavioural condition in which individuals feel more pain in the case of loss compared to happiness for an equal

quantum of gain (Rabin, 1998). In addition, people are ready to undertake higher risk to avoid losses but they become risk averse in the case of gain. Loss aversion bias also results in disposition effect which hinders investors to realize losses by holding on to losing shares for too long (Shefrin & Statman, 1985). Researchers in the field of psychology explain that loss aversion biases make individuals to overestimate risk. It is also found that tendency to show loss aversion is affected by demographics of individuals. Rau (2014) found that women are more risk averse than are men in their investment decisions and also trade less frequently. Similarly, Johnson *et al.* (2006) distinguished the tendency to exhibit loss aversion on the basis of age and education level. Johnson *et al.* (2006) found that older and less educated people are more prone to loss aversion biases as compared to young and highly educated people. Loss version bias also affects the decision making of corporate managers especially in the case of decision making related to a firm's financing (Jarboui & Ali, 2012). Kisgen (2006) showed that managers with loss aversion bias avoid debt financing as it increases the chances of bankruptcy. Similarly, in the field of WCM, Ramiah *et al.* (2014) found loss-averse corporate treasurers do better in bad debt control and keep bad debt under the 1% level. They also found that corporate treasurers with loss aversion bias are less likely to use the leading and lagging approach in cash management and focus much on the CCC to monitor the effectiveness of WCM.

2.7.4 Anchoring Bias

Research on anchoring bias started immediately after Tversky & Kahneman's (1974) seminal work (Epley & Gilovich, 2006). Anchoring bias is amongst the most studied behavioural biases in the literature. It forces individuals to make suboptimal decisions (Cen *et al.,* 2013). Anchoring bias influences people to pay much attention to the first piece of information they have. According to Tversky & Kahneman (1974), "*In many situations, people make estimates by starting from an initial value that is adjusted to yield the final answer."* Thus, anchoring biases are related to the human tendency to attach or "anchor" any thought with some reference point without logically evaluating the relevance to the decision under consideration. People tend to consider past events and trends as anchors (Vasile *et al.,* 2010). Yazdipour (2011) concluded that "*Anchoring happens when the starting point is given to the subject; as well as when the subject bases her estimate on the result of some incomplete computation."* In the

case of investment decisions, share price which investors use to compare the current share price is called the reference point. Usually, purchase price of a security serves as a reference point for decision making of investors (Baker & Nofsinger, 2002). Ramiah *et al.* (2014) investigated the effect of anchoring bias on WCM decision making of corporate treasurers. They found that corporate treasurers with anchoring bias tend to rely more on term sheets in managing WCM and are less likely to use bank bills for financing working capital needs.

2.8 DETERMINANTS OF WORKING CAPITAL REQUIREMENTS

WCM primarily involves decision making related to the amount and composition of current assets in a business (Mansoori & Muhammad, 2012). Effective WCM is critical for the survival and growth of any organization because it affects the profitability and liquidity available for a business (Deloof, 2003; Falope & Ajilor, 2009; Gill *et al.*, 2010).Therefore, a clear understanding of various factors that affect WCM is very essential for improved decision making (Gill, 2011). Following this line of argument, most of the literature in the last two decades has focused on determining the effect of WCM on a firm's profitability (Jose *et al*., 1996; Shin & Soenen, 1998; Deloof, 2003; Padachi, 2006; Garcia-Teruel & Martinez-Solano, 2007; Raheman & Nasr, 2007; Lazaridis, & Tryfonidis, 2006; Mathuva, 2009; Dong & Su, 2010; Vishnani & Shah, 2007; Raheman *et al*., 2010; Sharma & Kumar, 2011; Charitou *et al*., 2010; Alipour, 2011; Ching *et al.*, 2011; Vural *et al*., 2012; Banos-Caballero *et al.*, 2012; Abuzayed, 2012). However, the literature related to various factors affecting WCRs in companies is limited.

Chiou *et al*. (2006) investigated the various determinants of WCR with the help of a large sample of 19180 Taiwanese firms. This study used net liquidity balance and WCR as a measure of WCM. Results of OLS regression showed that debt ratio, operating cash flow negatively affect WCR and company age, company performance and size positively affect WCRs while no significant evidence is found regarding sales growth.

Narender *et al*. (2008) using the framework of Chiou *et al*. (2006) found a significant effect of firm size and debt ratio on net liquidity balance for 50 Indian firms operating in the cement industry. However, no significant evidence is found for

the influence of business cycle, operating cash flow, industry effect, growth and performance of the company on net liquidity balance.

Nazir & Afza (2009) established the relationship between WCRs and different internal and external determining factors for 132 Pakistani manufacturing firms listed on the Karachi Stock Exchange .The results of the study showed that operating cycle, leverage, return on assets (ROA) have a positive effect on WCRs while Tobin's negatively affects the WCR.

To examine the effect of various factors such as operating cycle, ROA, firm growth, Tobin's q, leverage and firm size on WCR, Gill (2011) used a sample of 166 Canadian firms listed on the Toronto stock exchange. With the help of OLS regression analysis, they found that the operating cycle, ROA and internationalization of a firm positively affect WCR while growth and size negatively affect WCR.

Banos-Caballero *et al*. (2010) examined the different determinants of the CCC of Spanish SMEs. They found a significant negative effect of asset tangibility, financial leverage, profitability and sales growth on the length of the CCC. They also concluded that there is a significant negative relationship of the CCC with cash flow and age of firm.

Mansoori & Muhammad (2012) focused on a sample of 94 large firms listed on the Singapore Stock Exchange to identify different determinants of WCM. By using the CCC as a dependent variable they found a significant negative effect of firm size, operating cash flow, capital expenditures and GDP on WCM; however, the effect of profitability is positive on the CCC.

Lotfinia *et al*. (2012) assessed the effect of company characteristics on WCM for a sample of 80 companies listed on the Tehran Stock Exchange (TSE). They used net liquidity balance as a proxy for WCM and found a significant effect of firm size and financial leverage on net liquidity balance.

Valipour *et al*. (2012) also documented the effect of company characteristics on WCM for a sample of 83 firms listed on the TSE. Instead of net liquidity balance, they used the CCC as a proxy for WCM. Results of the study established a significant relationship of the CCC with profitability, operating cash flow, size, growth and debt ratio.

Akinlo (2012) investigated the determining factors of WCRs for 66 Nigerian firms using panel data for the period 1997–2007. The results suggested that growth, operating cycle, economic activity and size are internal factors that have a positive effect on WCM. Leverage, however, was found to negatively affect WCM.

Abbadi & Abbadi (2013) made an attempt to determine the effect of fundamental factors including leverage, growth, size, asset tangibility, revenue volatility, asymmetric information, age, profitability and board characteristics like board size and board independence on the level of investment in working capital. They used panel data of 199 Malaysian public listed firms for a period of eight years (2000-2007). Results of panel regression confirmed that age, size, tangibility, leverage, earning volatility are positively related to working capital investment. In addition, growth, profit and operating cash flow are inversely related to working capital investment. However, no significant evidence is found on the effect of broad characteristics on the investment in working capital.

Based on the review of existing literature on determinants of WCR following firms specific factors are identified which affects the requirements of WCR in any firms.

2.8.1 Profitability

Profitability of firm affects the WCR (Chiou *et al.,* 2006). Previous studies advocated a significantly negative relationship between WCR and profitability (Banos-Caballero *et al*., 2010; Sharma & Kumar, 2011). Thus, ROA is expected to be negatively related to WCR because it is easy for profitable firms to obtain funding. They thus need not maintain a high cash reserve. Similarly, Banos-Caballero *et al*. (2010) concluded that firms with a higher profitability have a more aggressive working capital policy and thus need less working capital investment. On the contrary, Nazir & Afza (2009) found these variables to be related positively to each other. Nazir & Afza (2009) advocated that higher cash availability with profitable firms make them less concerned about the efficient management of working capital.

2.8.2 Growth Opportunity

The literature on WCM advocates a significantly positive relationship between sales growth and WCR (Chiou *et al*., 2006; Nazir & Afza, 2009; Wasiuzzaman &

Arumugam, 2013). To accelerate sales growth, firms need to grant goods on credit which increase the investment of firms in receivable and subsequently increase the WCR. Kieschnich *et al.* (2006) also advocated a positive association between the sales growth and WCR because in anticipation of future sales a firm needs to build up inventories.

2.8.3 Firm Size

Firm size can also influence WCM as previous studies found a significant relationship between these variables (Moussawi *et al.*, 2006; Chiou *et al*., 2006; Mansoori & Muhammad, 2012). Chiou *et al*. (2006) found a positive effect of size on WCR. Similarly, Mansoori & Muhammad (2012) also advocated that large firms with better access to the capital market can obtain funds easily at a lower cost that enables them to have more investment in working capital to support anticipated sales. Therefore, a positive relationship between size and WCR is expected.

2.8.4 Firm Age

Firm age represents the length of the relationship of a firm with its suppliers and customers (Cunat, 2007). It is also a measure of the creditworthiness of a firm to its suppliers of debt and equity (Niskanen & Niskanen, 2006). In the literature, it has been associated with the WCM (Banos-Caballero *et al.*, 2010; Chiou *et al.*, 2006). Chiou *et al.* (2006) found a positive relationship between WCM and age of the firm, which is also supported by Banos-Caballero *et al.* (2010). This positive relationship exists because older firms can obtain external funds relatively easily and under better conditions than can small firms (Berger & Udell, 1998). Thus, the cost of granting trade credit is lower in large firms, which subsequently increases the investment in working capital.

2.8.5 Asset Tangibility

The literature shows that the portion of tangible fixed assets in a firm's total assets can be a determining factor for WCR (Saarani & Shahadan, 2012; Banos-Caballero et al., 2010; Wasiuzzaman & Arumugam, 2013). Fazzari and Petersen (1993) found a negative association between asset tangibility and investment in working capital. They argued that in the presence of financial constraints, if the investment in tangible fixed assets is higher, it automatically reduces the funds available for working capital.

Thus, firms need to follow an aggressive working capital policy. This argument is also supported by Kieschnich *et al.* (2006) and Banos-Caballero *et al.* (2010) as both the studies found a significantly negative association between CCC and tangible fixed assets.

2.8.6 Operating Cash Flow

This indicates the capacity of a firm to generate internal resources. It is also a very important source of financing when the external financing cost is very high. In this study, operating cash flow is deflated by total assets to reduce the influence of firm size (Chiou *et al.,* 2006). In the previous literature, evidence on the relationship between operating cash flow and investment in WCM is conflicting. Chiou *et al.* (2006) argued that a higher operating cash flow is associated with efficient WCM which subsequently resulted in a lower WCR. Because operating cash flow can be increased by accelerating the collection of receivables and delaying the payments of payables, the investment in working capital automatically gets reduced. This relationship is also supported by Appuhami (2008) who found that investment in working capital tends to reduce with an increase in operating cash flow. On the contrary, Fazzari & Petersen (1993) and Banos-Caballero *et al.* (2010) argued that firms with a higher cash flow have a greater ability to generate internal resources. Thus, investment in current assets is higher due to the lower cost of funds.

2.8.7 Financial Leverage

This is linked with WCM in the literature (Gill, 2011; Nazir & Afza, 2009; Chiou *et al*., 2006; Banos-Caballero *et al*., 2010). Most of the previous studies on determinants of WCM found a negative association between financial leverage and WCR. Chiou *et al.* (2006) justified this relationship based on arguments presented in pecking order theory (POT). As per POT, firms tend to prefer internal financing to external financing to fund their business needs. Therefore, a firm with a higher debt ratio signifies that it has less internal financing and subsequently less capital to fund day-to-day operations. In addition to this, a firm with a higher debt ratio has to incur a higher cost for external financing due to a higher risk premium (Banos-Caballero *et al.,* 2010). Thus, these firms pay more attention to having effective WCM so that investment in working can be minimized to avoid further high cost external financing

(Nazir & Afza, 2009). This negative relationship is also confirmed by Raheman & Nasr (2007) and Akinlo (2012) for different countries.

2.9 RESEARCH GAPS AND CONCEPTUAL FREMWORK

2.9.1 Research Gaps

After analyzing the existing literature on WCM, we have identified following gaps in the literature. Theses gaps in the literature of WCM motivated the researcher to undertake the presented to fill in the gaps by extending the literature.

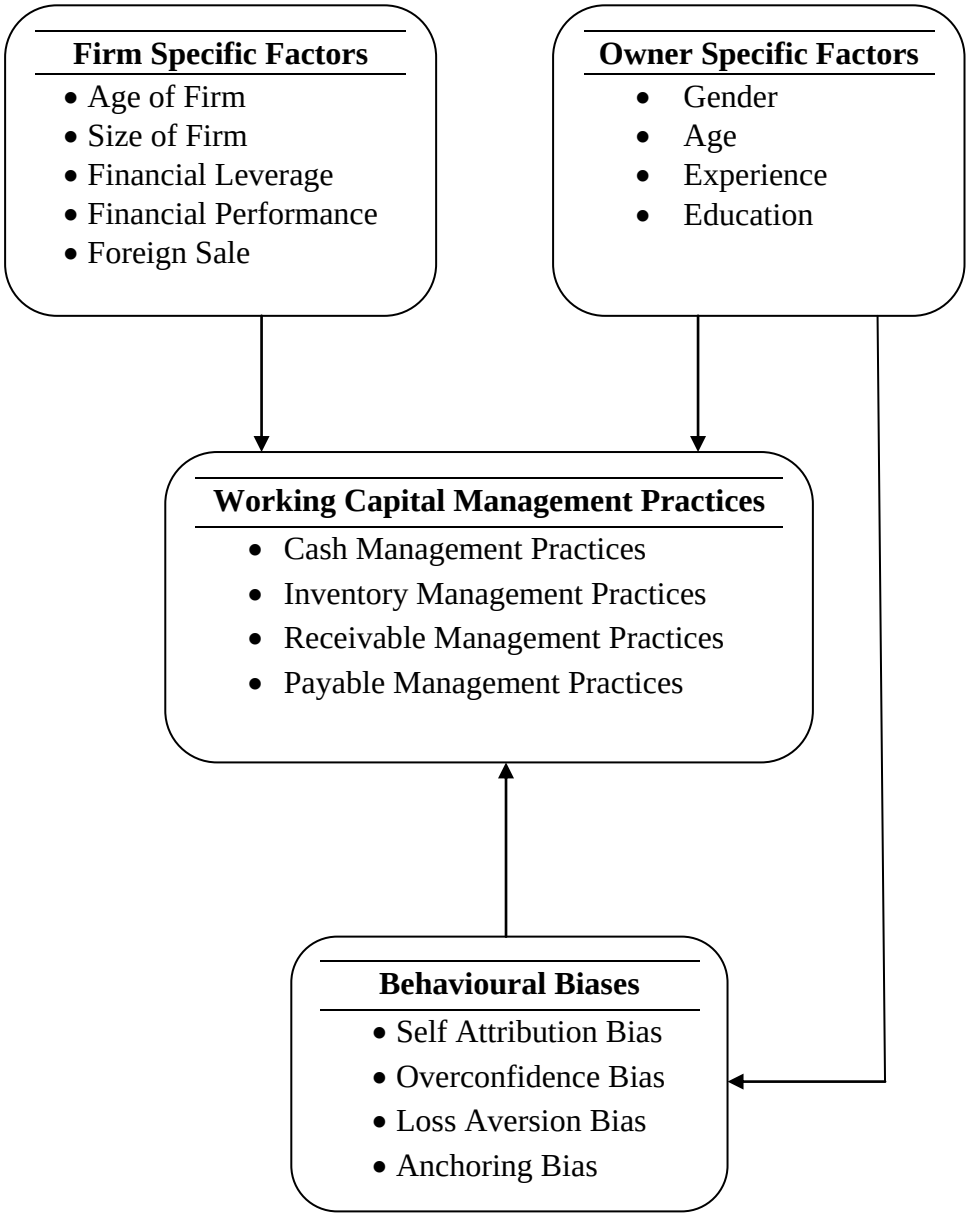
- The literature in the field of WCM is limited in scope and mainly focused on assessing the effects of WCM on firm's profitability while research related to to how firms manage working capital in an organizational context is very limited.
- Existing research in the field of WCM practices are mainly undertaken in the context of large firms operating in well-developed economies like Australia, the USA and the U.K. while evidence related to how WCM is managed in emerging economies like India is very limited.
- In case on Indian SMEs the literature about how working capital is management in organizational context is scant.
- All the study on WCM practices except Zhao, (2011) and Padachi & Howorth (2014) are undertaken before the GFC while the WCM practices have changed significantly after the GFC. The literature on WCM practices on post crisis period is very limited.
- Existing literature except on WCM practices Zhao, (2011) ignorance of the behavioural aspects of finance managers, though the behavioural finance literature suggests that professionals are prone to various heuristic-driven biases. To best of author's knowledge no previous study incorporates the behavioural aspects of SMEs' managers in working capital decision making.

2.9.2 Conceptual Framework

Based on the literature review and critical examination of the earlier studies, a conceptual model is proposed for the present study. As discussed earlier, the main objective of this study is to capture contemporary WCM practices of Indian SMEs and identify the effect of fundamental factors and behavioural biases on WCM

practices of Indian SMEs. It is evident from the Figure 2.2 that WCM practices of SMEs are affected the fundamental factors and behavioural biases. Further these fundamental factors can also be categories as (1) factors related to firm's characteristics and (2) factors related to owner manager demography. On the basis of literature it is found that firms characteristics like size, age, foreign sale, level of financial leverage and financial performance and decision maker characteristics like age, gender, experience and education has a significant effect on decision making related to financial management especially WCM.

Figure 2.2 Conceptual Framework



Thus, in present study the effects of these two types of fundamental factors on practices related to WCM and its components have been examined. In addition, Literature also advocates that decision making of financial agents is not fully rational. It is affected by various behavioural biases. Thus this study also incorporate behavioural biases namely self attribution bias, overconfidence bias, loss aversion bias and anchoring bias in WCM decision making to identify the effect of these biases on WCM practices of Indian SMEs. Literature in the field of behavioural finance also advocates that the propensities of people to exhibit behavioural biases are affected by their demographic profile. Thus, the effect of gender, age, experience and education of owner on behavioural biases (self attribution bias, overconfidence bias, loss aversion bias and anchoring bias) is also assessed.

2.10 CONCLUSION

In this chapter, the literature on WCM and behavioural biases has been reviewed. This chapter stars with the introduction and contribution of SMEs in India economy. It is noted from the review of literature the SMEs play a very important role in Indian economies through contribution in employment generation and gross domestic product (GDP) SMEs are the backbone of economic growth and India. In addition to that review of literature also highlighted the importance of WCM in SMEs. This chapter also highlighted that fundamental factors like firm size, firm age, financial leverage, profitability, foreign sale, gender, age experience and education affects the WCM practices of firms. Similar to fundamental factors it is also observed from literature review that decisions making of individual are affected by various behavioural biases. Finally, this chapter also reviews the literature related to determinants of WCR.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology mainly deals with the outline of the design of research, identification of the population, selection of the sample, finalization of the research instrument, measurement of variables and finally the procedure for collecting and analysing data to answer research questions. This chapter outlines the methodology used in executing this research. It begins with the explanation of the research paradigm, approach and design adopted in this study and justification of using such an approach. The subsequent sections provide information about the population, sample, procedure for data collection and description of the research variables. Finally, this chapter explains the methods used to collect and analyse data.

3.2 RESEARCH PARADIGM

Research is undertaken to examine and find out solutions scientifically for gaining new insight and knowledge (Saunders *et al.*, 2007). Thus, a systematic and scientific methodology should be used based on some philosophical assumptions to conduct research. Denzin & Lincolan (2000) explained philosophical assumptions as a set of paradigms which provide a guideline to researcher about how the world works, and what characteristics of human nature are necessary. Research paradigms generally refer to the selection of what is to be studied and how it should be studied. In social science research, there are two main research paradigms, namely, phenomenological and positivist (Hussey & Hussey, 1997). In the phenomenological paradigm, researchers are not independent of the research process; rather, they are an integral part of the research process. The phenomenological paradigm focuses more on people and provides them an opportunity to explain their situation and behaviour. This approach is mainly qualitative, interpretive and based on inductive logic (Veal, 2005). On the contrary, the positivist paradigm considers the researcher and research to be independent of each other. This approach advocates objectivity in measurement and considers human beings as rational individuals (Collis & Hussey, 2009). Based on the methodological appraisal of the existing research on WCM practices, this research is mainly designed under the positivist paradigm. The positivist paradigm is scientific,

empiricist, and quantitative in nature. Further, the results are likely to be highly reliable under this paradigm (Collis & Hussey, 2009).

3.3 RESEARCH APPROACH

There are several research approaches depending on the nature of the question being asked and methods of data collection. There are mainly two major research approaches advocated in the literature of social and behavioural science; quantitative and qualitative. Quantitative research involves gathering data from a large sample and requires statistical summarization of data so that empirical findings can be generalized at large. The methodology of quantitative research is based on the positivist paradigm (Creswell, 2003). Qualitative research however is based on the phenomenological paradigm and focuses on recording and analysing human behaviour, experience beliefs and emotions to get an in-depth understanding of certain phenomena. Normally, the findings of these qualitative enquiries cannot be generalized to other larger groups. Selection of an appropriate research design depends on the proposed research question and objectives of the study (Hair *et al.*, 2006). For this study, a quantitative research approach was selected because qualitative research enables the researcher to see how individuals perceive and interpret a social reality that is not static and changes over time (Bryman & Bell, 2007). Creswell (2003) stated that validation of theoretical generalizations and propositions in scientific endeavour, especially in social and business studies, requires a quantitative method that can be tested and interpreted numerically. In addition to this, previous studies on WCM practices mostly used the quantitative approach to attain research objectives (Smith & Sell, 1980; Belt & Smith, 1991; Kim *et al.*, 1992; Burns & Walker, 1991; Peel & Wilson, 1996; Wagner Ricci & Morrison, 1996; Khoury *et al.*, 1999; Ricci & Vito, 2000; Zhao, 2011; Orobia *et al.*, 2013 and Padachi & Howorth, 2014).

3.4 RESEARCH DESIGN

The research design is the blue print of research that outlines the procedures related to collection, measurement and analysis of data to attain research objectives (Bryman & Bell, 2007). A research design mainly focuses on the sample design, observational design and statistical design. Generally, there are three types of research designs – exploratory research design, descriptive research design, and causal research design. Exploratory research design is mainly used to identify and define the problem. It also

helps in developing the preposition and hypothesis for future research. In contrast, descriptive research seeks to answer phenomena such as who, what, where, when and how (Zikmund, 2003). In descriptive research, the researcher has a well-defined set of research questions and its major purpose is to describe characteristics of a population or a phenomenon. Finally, the causal research design is concerned with answering questions like why. It explains the cause and effect relationship between variables. Emory (1985) advocated that the objective of a descriptive and a causal design is different. Selection of a particular research design is mainly motivated by the type of problem under study. The main research questions that this study is seeking to answer are as follows:

- What are the contemporary WCM policies, practices and techniques adopted by small and medium enterprises (SMEs)?
- Do fundamental characteristics of a firm affect the WCM practices of SMEs?
- Do owner characteristics affect the WCM practices of SMEs?
- Are SME owners prone to behavioural biases when making managerial decisions?
- Is their tendency to exhibit behavioural bias affected by their demographic characteristics?
- Do various behavioural biases affect the WCM practices of SMEs
- What are the factors that determine the working capital requirements (WCR) of SMEs?

To answer the first 6 research questions, descriptive research is more appropriate than exploratory research because the former helps to observe and gather information on certain phenomena, typically at a single point in time. This study also seeks to explain the effect of various determinants of WCR in SMEs. This concern required a causal design to identify the cause-and-effect relationships between WCR and its determinants. Thus, in this study, a descriptive research design is implemented in combination with a causal research design. To gain an insight into the WCM practices of SMEs and answer the research questions, this thesis incorporates two different approaches: The first documents WCM practices and identifies behavioural bias. For this, a survey-based research methodology was selected because it is useful in describing the characteristics of a large population. A survey is a research technique in which information is gathered from a sample of people by using a

questionnaire (Zikmund, 2003). In the second approach, to identify different determinants of WCR, secondary data were obtained from the Prowess database which is a product of CMIE Pvt. Ltd and contains the financial data of Indian companies.

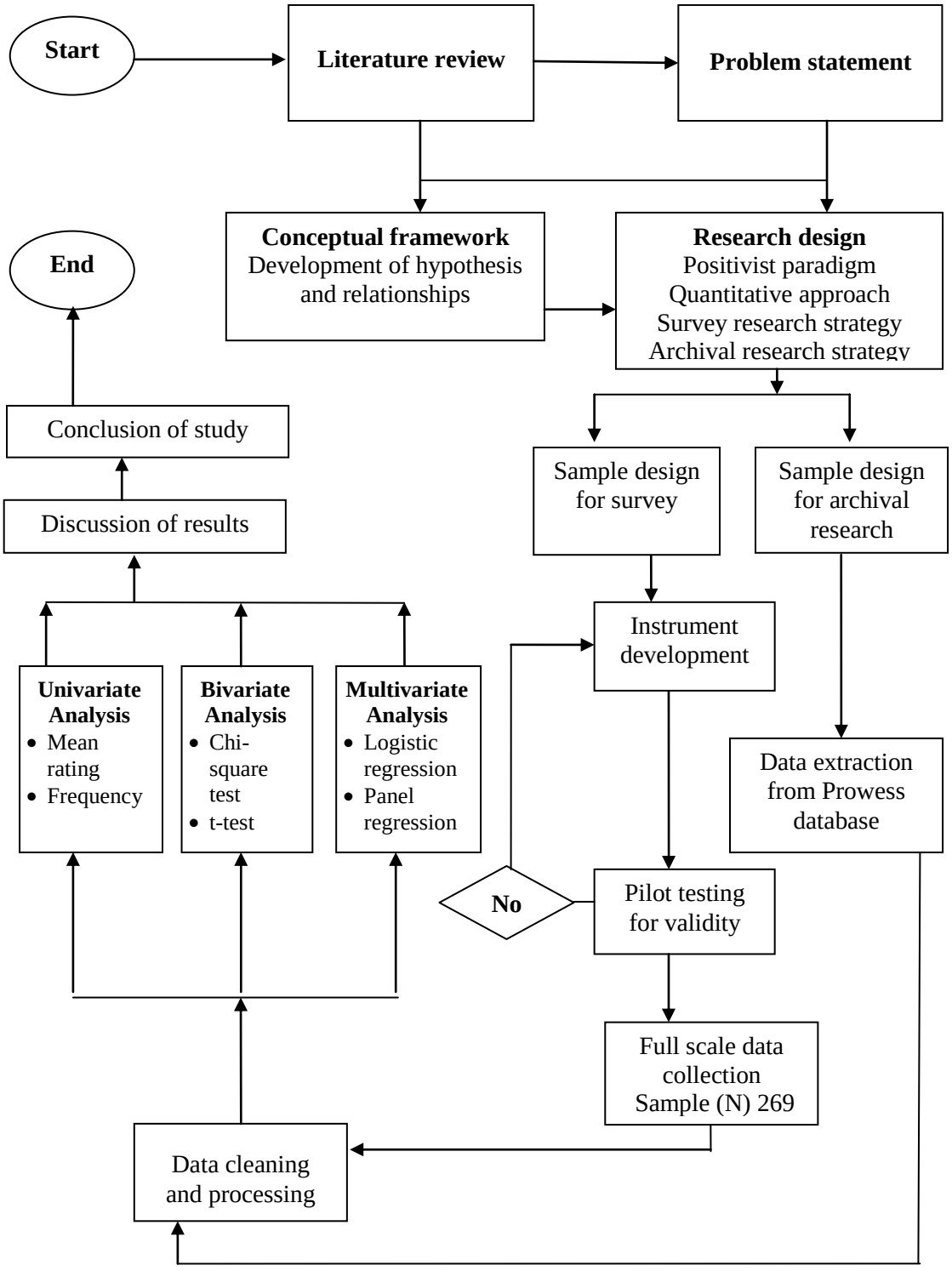
3.4.1 Research Design for the Primary Survey

In a research process, it is vital to select a suitable method or strategy, and this depends on the scope and the objectives of the research (Gill & Johnson, 2002). There are various methods and strategies to conduct research in social science. Zikmund (2003) categorises research methods into four types: (1) surveys, (2) experiments, (3) observation and (4) secondary data studies (archival research). Out of all these strategies, survey research is the most suited to answer the first 6 research questions of this study. Survey research methodology was used in this study because (1) this strategy is used in the existing literature for answering similar research questions asked in this study (Belt & Smith, 1991; Zhao, 2011; Peel & Wilson, 1996; Padachi & Howorth, 2014). (2) It is most suited in the context of the present study. This research is based on a positivistic paradigm and involves gathering of large-scale quantitative data for attaining research objectives. Therefore, the survey method is the most appropriate for this study because it enables researchers to gather data from a large number of respondents from geographically diverse locations in a relatively short time, and involves less cost and efforts (Gilbert, 2001; Hussey & Hussey, 1997). A cross-sectional survey of SMEs was conducted with the help of a structured questionnaire to capture contemporary WCM practices and to analyse the behavioural aspects of SME owners in managing working capital. The population sample selection technique, development of a research instrument and procedure for collection and analysis of data are presented in the subsequent sections.

3.4.1.1 Population

The present survey was conducted in the state of Rajasthan. Several factors motivated us to choose Rajasthan as the location for this survey. First, as per the 4th All India Census of MSME, Rajasthan is among the top 10 states based on the number of registered enterprises and it is among the top 5 states in terms of its contribution to export.

Figure 3.1 Flow Chart of Research Design



Second, Rajasthan's industrial profile includes a diversified product range including Chemical, Rubber and Plastic, Agro, Food and Beverages, Jewellery and Gems, Leather, Garment and Textile, Metal Product, Paper product, Pottery and Ceramics, Wood and Furniture, Marbles and Stone, Healthcare and Pharmaceuticals, Engineering Equipment Automobile and Ancillaries. The population for this study includes all the manufacturing SMEs operating in Rajasthan. We have focused only on manufacturing SMEs because in these firms the WCM decision is relatively more important than in service firms (Padachi *et al*., 2012). A manufacturing firm has to hold larger inventories and accounts receivable; thus, working capital issues are vital in these firms. On the contrary, the service industry holds much fewer inventories and accounts receivable. Thus, only manufacturing firms were selected to enhance the comparability of samples. Although the sample for this study is selected from the manufacturing SMEs operating in the state of Rajasthan but the finding can also be generalised to manufacturing SMEs of rest of India due to the following reasons; first, as per the record of Development Commissioner, Ministry of Micro, Small & Medium Enterprises, Government of India, major industry group in small scale sector includes, Food Products, Chemical & Chemical Products, Basic Metal Industries, Metal Products, Electrical Machinery & Parts, Rubber & Plastic Products, Machinery & Parts Except Elecetrical goods, Hosiery & Garments, Wood Products, Non-metallic Mineral Products, Paper Products & Printing, Leather & Leather Products, Food and Beverages, Tobacco & Tobacco Products, Cotton Textiles. Similarly Rajasthan's industrial profile also includes a diversified product range including Chemical, Rubber and Plastic, Agro, Food and Beverages, Jewellery and Gems, Leather, Garment and Textile, Metal Product, Paper product, Pottery and Ceramics, Wood and Furniture, Marbles and Stone, Healthcare and Pharmaceuticals, Engineering Equipment Automobile and Ancillaries which covers all major sectors operating through India. Secondly, MSMEs all over India is regulated and monitored by MSME development Institutes which are having common organization, financing schemes and policies throughout India. Thirdly, the financial and banking system is also uniform all over India. Because of this similarity, it can be concluded the geographical location is not a critical differentiating factor among WCM practices of SMEs thus the finding of this study may also be generalised for SMEs operating in other parts of India.

3.4.1.2 Sample frame, sample size, sample selection and response rate

A suitable sample frame is necessary as it helps in the reliable selection of sample units. The sampling frame for this study was derived from several directories, namely, the business directory of Sunrise Consultancy Services (SCS), SME business directory published on Bizbaya.com and database from Vishwakarma Industries Association (VKI), Jaipur, which is one of the largest industrial associations in Rajasthan. The directory of Sunrise Consultancy Services (SCS) contains data on 481 manufacturing SMEs operating in Rajasthan. The database from VKI includes data of 1,493 manufacturing firms out of which 160 firms are excluded due to the lack of contact information. Also, 32 firms were previously provided by SCS. The SME business directory published on Bizbaya.com also provided the complete contact details of 590 manufacturing SMEs out of which 56 SMEs were previously provided by the SCS and VKI databases. Finally, the sample frame for this study resulted in 2316 firms. Initially, we had sent the questionnaire by e-.mail to all 1581 SMEs whose e mail Id is available. This resulted in only 26 responses because the owners of the SMEs were sceptical of the purpose of research. Therefore, in the second step, telephone calls were made to explain to them the purpose and convince them about the confidentiality of data provided by them. Thus, a total of 1521 phone calls were made and responses of 164 SME owners were collected. Finally, 193 SMEs in VKI industrial Jaipur were visited and the questionnaire was personally administered, which resulted in 92 responses. Finally, the complete survey resulted in 282 responses; however, in subsequent stages, it was found that 13 responses were not complete, so these responses were excluded from further analysis. Thus, the final sample for this study turned out to be 269 with an overall response rate of 11.61 %,which is comparable to that of Burns & Walker (1991), Graham & Harvey (2001) and Ramiah *et al.* (2014). Because top level executives are highly engaged in business activities, they are less likely to respond as compared to other respondent groups (Huber & Power, 1985). Further, some organizations have policies for non-disclosure of a firm's information to external parties. A study conducted by Krishnan & Shobitha (2016) summarized the response rate of survey studies seeking responses from the organizational level in India and found that the average response rate is just 13.31 %.

Table 3.1 Survey response rate

This table shows the proportion of people responding to each type of data collection technique.

Method of Data collection	Response	No response	Total	Response Rate (%)
Email survey	26	1555	1581	1.64
Telephonic survey	164	1357	1521	10.78
Personal administration	92	101	193	47.66
Total response collected	282	2034	2316	12.17
Final usable response	269			11.61

3.4.1.3 Questionnaire design

In survey-based research, the most important step is the development of a research instrument that can address all the objectives of the study. A Poorly drafted research instrument can be misleading and leads to a faulty conclusion. On the contrary, a well-drafted questionnaire can easily reduce the error in judgement and make it convenient for respondents to answer accurately (Sreejesh *et al.,* 2014). For this study, a structured questionnaire was developed with the help of the available literature in the field. At the preliminary stage of the questionnaire development, several questionnaires that were previously used in the WCM research in large firms and in SME studies were reviewed. A questionnaire was developed based on the WCM surveys of Belt & Smith (1991), Burns & Walker (1991), Peel & Wilson (1996), and Zhao (2011). Questionnaire is primarily based on the survey of Zhao (2011) which is the extension of survey of Belt & Smith (1991), we have used the similar 5 point scale for this study as used by Zhao (2011). The initial draft of questionnaire was modified to apply it to the context of Indian SMEs. Next subject experts and officials of the Ministry of Micro Small and Medium Enterprises (MSME) were asked to review the initial draft of the questionnaire for content validity. After incorporating various suggestions, the final questionnaire was prepared in the form of a booklet which included background information and an explanatory cover letter to ensure confidentiality of responses as suggested by Smith & Dainty (1991). To minimize time and effort in completing the questionnaire, only close-ended questions, which managers tend to prefer (Greer *et al.,* 2000), were used. The final questionnaire contained a set of 34 questions divided in 3 sections. A sample copy of final questionnaire is provided in Annexure -I.

Section 1 includes questions related to demographic profile of respondents and fundamental characteristics of firms under study. This section is similar to the first section of Zhao, (2011) except few modifications. First question related to credit rating is dropped because majority of these firms in India do not have credit rating. Secondly, the question related to sales revenue is scaled down to fit the context of SMEs this question contains 8 categories of sales revenues. Apart from that question related to type of industry is also modified because the survey of Zhao (2111) included the service as well as manufacturing companies. The second section of Questionnaire includes questions related to overall WCM practices and individual components of WCM i.e. cash management, inventory management, receivable management and payable management. The questions in the questionnaire differed in structure. Some questions asked the respondents to choose one or more options among several possible options, whereas other questions asked them to rate the significance of a factor on a five-point Likert type scale similar to Zhaoo, (2011). The questions related to financing policy are as it is adopted from the survey of Zhao, (2011). In this study question related to the working capital financing preference of SME is also included in line with the study of Peel &Wilson (1996). In addition to financing policy, present survey also capture the WCM policy and the question related to overall WCM policy are adopted from the survey of Burns & Walker (1991). The subsequent questions related to WCM components are similar to Zhao, (2011) except the questions related to debt management are excluded as they are out of the scope of study.

Finally the last section of the questionnaire includes the questions related to behavioral biases. To capture the behavioural biases among the SMEs owners a similar approach as of Zhao (2011) is used. In last section of questionnaire, situational questions were asked to the respondents. These questions were related to self-attribution bias, overconfidence bias, anchoring bias and loss aversion bias. The design of behavioural bias identification questions is described in the following section.

3.4.1.3.1 Design of self-attribution bias questions: People usually attribute success to their personal capabilities and blame external factors for their failures (Miller & Ross, 1975). Based on this proposition, two questions relate to success and failure and are designed to capture self-attribution bias among SME owners. Our questionnaire

provides a situation of financial distress and asks respondents to blame their own financial policy and external factors on a five–point scale, where 1 = not at all, 2 = somewhat, 3 = moderately, 4 = highly and 5 = extremely. Similarly, the questionnaire asks respondents to attribute the success of their business to the same factors in the case of good financial performance. We identified self-attribution basis based on the combination of responses to these two questions. If the respondents rated both questions as 4 or 5, we classified them as being prone to self-attribution bias. Otherwise, we considered them as not being prone to self-attribution bias. However, if the respondents assigned a 1, 2, or 3 to one question and a 4 or 5 to the other question, we categorized them as "other."

Table 3.2 Design of self-attribution bias questions

This table shows the combination of responses to self attribution bias questions for identifying the tendency of SME owners to exhibit self attribution bias.

Self-attribution biases	Failure is attributed to external factors	Success is attributed to internal factors
	Self-attribution bias	
Questions	28b	32a
Expected Value	4 or 5	4 or 5
	No self-attribution bias	
Questions	28b	32a
Expected Value	Either 1,2,3	Either 1,2,3
	Other	
Questions	28b	32a
Expected Value	Any other combination	Any other combination

3.4.1.3.2 Design of overconfidence bias questions: People tend to overestimate their own capability. Hence, we designed questions to capture this tendency by asking SME owners to rate their confidence in cash management in two situations: (1) when their firm's financial performance is good and (2) when their firm's financial performance is bad. We used a five-point scale where 1 = not at all confident, 2 = somewhat confident, 3 = moderately confident, 4 = highly confident and 5 = extremely confident. We identified overconfidence bias on the combination of responses to these two questions. If respondents gave a rating of 4 or 5 for both questions, we considered them as being prone to overconfidence bias. Otherwise, we considered them as not being prone to overconfidence bias. We classified respondents with a 1, 2, or 3 on one question and a 4 or 5 on the other question as "other."

Table 3.3 Design of overconfidence bias questions

This table shows the combination of responses to overconfidence bias questions for identifying the tendency of SME owners to exhibit overconfidence bias.

	Overconfidence Bias	No overconfidence Bias	Other
Questions	31 and 34	31 and 34	31 and 34
Expected Value	4or 5 and 4 or 5	Either 1,2 or 3 for both the question	Any other combination

3.4.1.3.3 Design of anchoring bias questions: Tversky & Kahneman (1974) explain that anchoring bias forces individuals to rely too much on a particular trait, which tends to affect their decision making. To capture anchoring bias, our questionnaire included a situation about providing credit sales to a low-rated company A that repays on time. The questionnaire asked SME owners to rate their chances of granting credit to company A or a similar low-rated company B in the future on a five-point scale where 1 = not at all likely, 2 = somewhat likely, 3 = moderately likely, 4 = highly likely, and 5 = extremely likely. We identified anchoring bias based on the responses to these two options. If SME owners rated both questions with a 4 or 5, we considered them to be prone to anchoring bias because they ignored the credit rating and gave credit based on a good recent payment history. If SME owners selected 1, 2 or 3 for both situations, we did not consider them to be prone to anchoring bias. Finally, we categorized any other combination of rating as "other."

Table 3.4 Design of anchoring bias questions

This table shows the combination of responses to anchoring bias questions for identifying the tendency of SME owners to anchoring bias.

	Anchoring bias	
Questions	29a	29b
Expected Value	4 or 5	4 or 5
	No Anchoring bias	
Questions	29a	29b
Expected Value	Either 1,2 or 3	Either 1,2 or 3
	Other	
Questions	29a	29b
Expected Value	Any other combination	Any other combination

3.4.1.3.4 Design of loss aversion bias questions: People feel more pain from a loss than happiness for an equivalent gain. To identify the tendency of loss avoidance, we included two questions related to the same loss and gain and asked SME owners to

rate their satisfaction and disappointment in both situations on a five-point scale. One question asked SME owners to rate their disappointment in the case of bad debt on 5% and 10% of sales on a five-point scale where 1 = not at all disappointed, 2 = somewhat disappointed, 3 = moderately disappointed, 4 = highly disappointed and 5 = extremely disappointed. The other question asked them to rate their satisfaction in the case of a profit of 5% and 10% of sales on a five-point scale, where 1 = not at all satisfied, 2 = somewhat satisfied, 3 = moderately satisfied, 4 = highly satisfied and 5 = extremely satisfied. If SME owners rated level of disappointment more than the level of satisfaction for both the situation, we classified them as loss averse. If they rated level of disappointment equal of less than level of satisfaction in both the situation, we viewed them as not being loss averse. We considered any other combination as "other."

Table 3.5 Design of loss aversion bias questions

This table shows the combination of responses to loss aversion bias questions for identifying the tendency of SME owners to exhibit self attribution bias.

	Loss Aversion bias	
Questions	30a – 33a	30b – 33b
Expected Value	> 0	> 0
	No Loss Aversion bias	
Questions	30a – 33a	30b – 33b
Expected Value	≤ 0	≤ 0
	Other	
Questions	30a – 33a	30b – 33b
Expected Value	Any other combination	Any other combination

3.4.1.4 Validity and reliability

In survey-based research, the issue of validity and reliability of survey instruments is vital. That is why the first draft of our questionnaire was sent to 8 officials of the Ministry of Micro Small and Medium Enterprises (MSME) Development Institute, Jaipur, and 5 subject experts from academics to determine content validity as suggested by Bryman & Bell (2007). After incorporating the suggestions of experts, a final version of the research questionnaire was pilot tested on 38 SME owners in the city of Jaipur. The sole purpose of pilot testing was to identify the appropriateness and clarity of the questions so that respondents could understand the questionnaires. This

process helped in identifying and correcting potential problems before the final process of data collection (Saunders *et al*., 2007).

3.4.1.5 Methods of analysis

After finalizing the research design and data collection procedure, we next identified the methods and techniques of data analysis. In this study, we used primary data collected through the survey from SME owners. We compiled and coded the data collected from the survey and analysed these data with the help of ***SPSS version 23.0.*** Our study had multiple objectives to achieve; thus, we adopted different set of statistical methods to analyse the data. In the present study, our analysis is divided into three parts: (1) Univariate analysis, (2) Bivariate analysis and (3) Multivariate analysis stages.

3.4.1.5.1 Univariate analysis: Because this research is descriptive in nature and primarily focused on documenting contemporary WCM practices of SMEs, univariate analysis was used to discuss descriptive findings. Univariate analysis explores variables (attributes) one by one. Variables under study can be categorical or continuous in nature. Different statistical techniques were used to investigate categorical and continuous variables. A categorical or discrete variable is one that has two or more categories (values). Categorical variables can be further divided into nominal and ordinal. A nominal variable has no intrinsic ordering to its categories such as gender (male or female), where as an ordinal variable has a clear ordering, for example, age categories (young, middle age or old). In contrast, a continuous variable (attribute) can take any finite or infinite interval. In this study, frequency tables, line bar charts and bar charts were used to quantify categorical responses, while for analysing continuous variables, the mean score along with standard deviation was calculated.

3.4.1.5.2 Bivariate analysis: Zikmund (2003) defined bivariate analysis as a method for the simultaneous investigation of two variables using tests of differences or measures of association between two variables at a time. To determine the effect of fundamental factors on WCM practices, the responses of SME owners were grouped on the basis of firm characteristics, owners' characteristics and behavioural biases. To determine the effect of firm-specific factors on WCM practices, all responses were categorized based on the age of the firm (young or old), size of the firm (large or

small), foreign sale (yes or no), level of financial leverage (low or high), and profitability (increased or decreased). Similarly, to identify the effect of owners' characteristics on WCM practices, responses were grouped based on the owner's age (young or old), education (up to secondary level or higher education level), experience (low or high) and gender (male or female). Finally, to determine the effect of behavioural biases, responses were grouped based on self-attribution bias (yes or no), overconfidence bias (yes or no), anchoring bias (yes or no) and loss aversion bias (yes or no). To test the difference between the WCM practices of groups based on the above factors, in this study, bivariate analysis was used. Because this study included categorical and continuous variables, two different sets of statistical tests were used to statistically determine the difference between groups.

(a) Chi-square test of independence: To compare the WCM practices measured on a nominal scale, a chi-square test for independence was used. The chi-square Test procedure tabulates a variable into categories and computes a chi-square statistic. This test helps compare the observed and expected frequencies in each category to test whether all categories contain the same proportion of values.

First to calculate chi-square statistics, expected frequency counts were computed separately for each level of one categorical variable at each level of the other categorical variable**.** Expected count was calculated from observed count as follows:

$$\mathbf{E_{rc} = (N_r * N_c)/N \ldots\ldots\ldots\ldots\ldots\ldots \quad (3.1)}$$

where E_{rc} is the expected frequency count for level r of Variable A and level c of Variable B, N_r is the total number of sample observations at level r of Variable A, N_c is the total number of sample observations at level c of Variable B, and N is the total sample size.

Chi-square statistic: The test statistic is a chi-square random variable (X2) defined as follows:

$$\mathbf{X^2 = \Sigma\ [\ (O_{rc} - E_{rc})^2 / E_{rc}\ ] \ldots\ldots\ldots\ldots\ldots\ldots (3.2)}$$

where O_{rc} is the observed frequency count at level r of Variable A and level c of Variable B, and E_{rc} is the expected frequency count at level r of Variable A and level c of Variable B.

(b) Independent t-test: This test is mostly used to determine whether there is a statistically significant difference between the means in two unrelated groups. The independent sample t-test compares two means. It assumes a model where the variables in the analysis are split into independent and dependent variables. Thus, to compare WCM practices (measured on five-point Likert scale between groups, an independent t-test was used (Zhao, 2011). The independent samplet-test requires the assumption of homogeneity of variance, that is, both groups have the same variance. Thus, to first determine the homogeneity of variance, Levene's test was performed. Based on the results of Levene's test, t statistics were further calculated.

(i) Equal variances assumed: In the case of equal variance, t- statistics was calculated as follows:

$$t = \frac{\bar{x_1} - \bar{x_2}}{s_p \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \text{..... (3.3)}$$

$$S_p = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}} \text{..... (3.4)}$$

where

$\bar{x}_1$ = Mean of the first sample

$\bar{x}_2$ = Mean of the second sample

n_1 = Sample size (i.e., number of observations) of the first sample

n_2 = Sample size (i.e., number of observations) of the second sample

s_1 = Standard deviation of the first sample

s_2 = Standard deviation of the second sample

s_p = Pooled standard deviation

(ii) Equal variances not assumed: In the case of unequal variance of the sample, t statistics was calculated as follows:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \text{..... (3.5)}$$

$\bar{x}_1$ = Mean of the first sample

$\bar{x}_2$ = Mean of the second sample

n_1 = Sample size (i.e., number of observations) of the first sample

n_2 = Sample size (i.e., number of observations) of the second sample

s_1 = Standard deviation of the first sample

s_2 = Standard deviation of the second sample

3.4.1.5.3 Multivariate analysis: This method was used to simultaneously analyse multiple independent (or predictor) variables with multiple or single dependent (outcome or criterion) variables. To assess the effect of the owner's demography on the tendency to exhibit various behavioural biases, logistic regression was used. Logistic regression analysis was used in this study mainly because (1) Logistic regression is likely to be the most appropriate method because the dependent variable is a dichotomous categorical variable (Field, 2009; Sreejesh *et al*., 2014). (2) Instead of continuous independent variables, in this study categorical independent variables were included and non-linear association was considered between dependent variables and independent variables. Hence, a logistic regression is suitable because it allows the inclusion of both continuous and categorical variables in the regression model. A binary logistic regression model was used to model the relationship between the tendency to exhibit behavioural biases and demographic characteristics of SME owners (Age, Gender, Education and Experience). Multiple logistic regressions find the equation that best predicts the value of the Y variable for the values of the X variables. The Y variable is the probability of obtaining a particular value of the nominal variable. The *Y* variable used in logistic regression would then be the probability of a characteristic being present. In this research, it is the probability of a respondent being prone to a particular behavioural bias. This probability can take any value from 0 to 1. However, due to the problem of limited value of probability, these probabilities cannot be used directly in the regression models; instead, the odd [Y/ (1-Y)] was used. Further, the natural log of the odds of the outcome as the dependent variable was calculated so that the relationships could be linearized and treated much like multiple linear regression. Finally, the logistic model used can be expressed as follows:

$$\textbf{Ln odds (E)} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_k x_k + \varepsilon \quad \textbf{……..…(3.6)}$$

Odds (E) is the odd that event E occurs and can be calculated as follows:

$$\textbf{Odds (E)} = \frac{P(E)}{1-P(E)} \text{ ……. (3.7)}$$

Where P is the probability of occurrence of an event and takes a value between 0 and 1. Thus, the odd function can be defined as

$$\textbf{Odds (E)} = \frac{P}{1-P)} \text{ …… (3.8)}$$

Thus, the final logistic regression model can be obtained as

$$\textbf{Ln odds (E) = Ln (P/(1-P) = } \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_k x_k + \varepsilon \quad \text{……(3.9)}$$

where

P = The expected probability that the outcome is present

x_1 to x_k = Distinct independent variables

β_0 o β_k = Regression coefficients

ε = Error term

3.4.2 Research Design for Archival Research (Secondary Data Analysis)

Because this research aims at addressing multiple research questions, a multiple research strategy was adopted. The final research question of this study aims at identifying the various determinants of working capital requirements in Indian SMEs. Thus, an archival research method was selected to answer this question. Our archival research used secondary data which were previously collected by someone else (Zikmund, 2003). The rationale behind choosing secondary data methodology was twofold: firstly, it is very difficult to collect financial data through a primary survey because respondents find it very difficult to recall financial figures at the time of the survey and are also reluctant to provide this information to some unknown researcher. Secondly, because the financial data are already collected by various agencies, it is not advisable to invest time and cost for re-collection of similar data.

3.4.2.1. Sample size, sample selection and data sources

This study analysed panel data of manufacturing SMEs operating in India during 2010-2014. Data of SMEs were collected from the CMIE Prowess database which is a database of financials of Indian companies. Because the Prowess database is a comprehensive database of Indian financial companies not exclusive for SMEs, a quarry was processed to first identify SMEs. The quarry was run as per the definition

of SMEs provided in The Micro, Small and Medium Enterprises Development Act, 2006. The time span of data was 2009-10 till 2013-2014. Precisely, those firms meeting the following criteria were selected in the sample:

1. The sample firm must belong only to the manufacturing sector.
2. The firm must be available during 2009-10 to 2013-2014.
3. Firms must have an investment in plant and machinery of up to 10 crores.
4. Complete information about the entire variables under study must be available for a time frame of 5 years (2009-10 to 2013-2014).

Sample selection started with the universe of all 14613 manufacturing firms available in Prowess as on 28 June 2015. Firms with an investment in plant and machinery in excess of INR 10 crores were excluded from the sample. Thus, a sample of 1989 SMEs was obtained for this study. Finally, all the firms that had a missing value of any variable during the study time frame of 5 years were excluded. A set of 269 SMEs was obtained with complete information being available for all the variables. In the final step, 15 SMEs were also included from the analysis due to abnormal values such as negative total assets and debt ratio >1. Finally, a sample of 254 SMEs was obtained for this study. The detailed procedure for sample selection is presented in Table 3.6

Table 3.6 Sample selection procedure

This table show the process of selection of SMEs from Prowess database for archival research

Particulars	Total number of firms
All Manufacturing company	14613
Less: Firms with investment more than INR 10 crores in plant and machinery	12624
Remaining manufacturing SMEs	1989
Less: Firms with missing information	1720
Less: Firms with extreme observation	15
Final Sample	**254**

3.4.2.2 Research variables and hypothesis

To analyse the determinants of WCR, one dependent variable and seven independent variables were included in this study based on the previous literature (Chiou *et al.*, 2006; Nazir & Afza, 2009; Narender *et al*., 2008). These variables are described as follows:

3.4.2.2.1 Dependent variable: The dependent variable used in the present study is WCR which was a commonly used proxy variable for WCM in previous studies (Chiou *et al.*, 2006; Nazir & Afza, 2009; Narender *et al*., 2008; Akinlo, 2012). The working capital requirement refers to the amount of resources that a firm needs to effectively cover operating costs and expenses. Hawawini *et al.* (1986) found that for evaluating WCM, WCR is a more appropriate measure than the traditional indicator of liquidity. In line with the existing literature, WCR is calculated as (cash and cash equivalents + account receivable + marketable securities + inventories) – (account payable+ short-term loans)/total Asset. In this study, working capital requirement was deflated by total asset so as to reduce the influence of firm size.

3.4.2.2.2 Independent variables: In the review of the literature on determinants of WCR, various factors were identified that significantly affect the WCR. For this study, seven firm-specific factors, namely, profitability, sales growth, financial leverage, firm size, tangibility, operating cash flow and firm age, were selected as explanatory variables.

- **Profitability:** Profitability of firm affects the WCR (Chiou *et al*., 2006). In this study, return on assets (ROA) measures as the ratio of earnings before interest and tax (EBIT) to total assets was used as a proxy measure for profitability (Chiou et al., 2006; Nazir & Afza, 2009; Banos-Caballero et al., 2010; Sharma & Kumar, 2011; Abbadi & Abbadi, 2013). ROA indicates how profitable a firm is with respect to its total assets. Previous studies on WCM prefer to use ROA to return on equity (ROE) to focus more on operating efficiency by avoiding the structure the capital (Joes *et al*., 1996). In this study, ROA was calculated by using the following formula:

  $$\boldsymbol{ROA = EBIT/Total\ Assets}$$

  Where
  ROA= Return on Assets
  EBIT= Earnings before interest and tax.

  Previous studies advocated a significantly negative relationship between WCR and profitability (Banos-Caballero *et al.*, 2010; Sharma & Kumar, 2011). Thus, ROA is expected to be negatively related to WCR because it is easy for profitable firms to obtain funding. They thus need not

maintain a high cash reserve. Similarly, Banos-Caballero *et al.* (2010) concluded that firms with a higher profitability have a more aggressive working capital policy and thus need less working capital investment. On the contrary, Nazir & Afza (2009) found these variables to be related positively to each other. Nazir & Afza (2009) advocated that higher cash availability with profitable firms make them less concerned about the efficient management of working capital. Due to conflicting findings in literature this study do not expected the direction of relationship between ROA and WCR. Thus, the following hypothesis was formulated:

H_1: There is a significantly relationship between ROA and WCR

- **Growth opportunity:** In this study, annual sales growth was used as a proxy variable for growth opportunities (Deloof, 2003; Nazir & Afza, 2009; Appuhami, 2008; Banos-Caballero *et al.*, 2010). Growth opportunities can affect the WCM due to its impact on trade credit and investment in inventories (Banos-Caballero *et al.*, 2010). In this study, sales growth was calculated using the following formula:

$$\textit{Sales growth} = (Sales_1 - Sales_0)/Sales_0$$

where
$Sales_1$ = Sales of the firm for the current year
$Sales_0$ = Sales of the firm for the previous year

The literature on WCM advocates a significantly positive relationship between sales growth and WCR (Chiou *et al.*, 2006; Nazir & Afza, 2009; Wasiuzzaman & Arumugam, 2013). Based on the literature in this area, our study expected a positive relationship between WCR and sales growth because to satisfy a high anticipated sales growth, a firm needs to stock up on inventory, which results in a high WCR (Wasiuzzaman & Arumugam, 2013). Thus, the following hypothesis was formulated:

H_2: There is a significantly positive relationship between sales growth and WCR

- **Firm size:** Firm size can also influence WCM as previous studies found a significant relationship between these variables (Moussawi *et al.*, 2006; Chiou

et al., 2006; Manoori & Muhammad, 2012). In line with the previous literature, this study used the natural logarithm of total assets as a proxy for firm size (Karaduman *et al*., 2010; Chiou *et al.*, 2006; Banos-Caballero *et al.*, 2010; Nazir & Afza, 2009).

Chiou *et al*. (2006) found a positive effect of size on WCR. Similarly, Manoori & Muhammad (2012) also advocated that large firms with better access to the capital market can obtain funds easily at a lower cost that enables them to have more investment in working capital to support anticipated sales. Therefore, a positive relationship between size and WCR is expected. Thus, the following hypothesis was formulated:

H_3: There is a significantly positive relationship between firm size and WCR

- **Firm age:** Firm age represents the length of the relationship of a firm with its suppliers and customers (Cunat, 2007). It is also a measure of the creditworthiness of a firm to its suppliers of debt and equity (Niskanen & Niskanen, 2006). In the literature, firm age has been associated with the WCM (Banos-Caballero *et al*., 2010; Chiou *et al*., 2006). In this study, firm age was calculated by subtracting the year of establishment from the year of sample data (2014). Subsequently, the natural logarithm of this age was calculated using the approach of Banos-Caballero *et al.* (2010). Chiou *et al.* (2006) found a positive relationship between WCM and age of the firm, which is also supported by Banos-Caballero *et al*. (2010). This positive relationship exists because older firms can obtain external funds relatively easily and under better conditions than can young firms (Berger & Udell, 1998). Thus, the cost of granting trade credit is lower in large firms, which subsequently increases the investment in working capital. Similar to the findings of previous studies, a positive relationship between the WCR and size of the firm was expected. Thus, the following hypothesis was formulated.

  H_4: There is a significantly positive relationship between a firm's age and WCR

- **Asset tangibility:** The literature shows that the portion of tangible fixed assets in a firm's total assets can be a determining factor for WCR (Saarani &

Shahadan, 2012; Banos-Caballero *et al.,* 2010; Wasiuzzaman & Arumugam, 2013). In this study, the ratio of net tangible fixed assets to total assets (FATA) is used as a proxy for tangibility (Banos-Caballero *et al.,* 2010; Wasiuzzaman & Arumugam, 2013).

FATA = (Net fixed assets – inventible assets)/ Total assets

Fazzari & Petersen (1993) found a negative association between asset tangibility and investment in working capital. They argued that in the presence of financial constraints, if the investment in tangible fixed assets is higher, it automatically reduces the funds available for working capital. Thus, firms need to follow an aggressive working capital policy. This argument is also supported by Kieschnich *et al.* (2006) and Banos-Caballero *et al.* (2010) as both the studies found a significantly negative association between cash conversion cycle (CCC) and tangible fixed assets. In line with the findings of the previous literature, we expected a negative relationship between tangibility fixed assets and WCR. Thus, the following hypothesis was formulated:

H_5: There is a significantly negative relationship between assets tangibility and WCR

- **Operating cash flow:** This indicates the capacity of a firm to generate internal resources. It is also a very important source of financing when the external financing cost is very high. In this study, operating cash flow is deflated by total assets to reduce the influence of firm size (Chiou *et al.,* 2006). In the previous literature, evidence on the relationship between operating cash flow and investment in WCM is conflicting. Chiou *et al*. (2006) argued that a higher operating cash flow is associated with efficient WCM which subsequently resulted in a lower WCR. Because operating cash flow can be increased by accelerating the collection of receivables and delaying the payments of payables, the investment in working capital automatically gets reduced. This relationship is also supported by Appuhami (2008) who found that investment in working capital tends to reduce with an increase in operating cash flow. On the contrary, Fazzari & Petersen (1993) and Banos-Caballero *et al.* (2010) argued that firms with a higher cash flow have a greater ability to generate internal resources. Thus, investment in current

assets is higher due to the lower cost of funds. Thus, the direction of the relationship between operating cash flow and WCR is not predicted and the following hypothesis is formulated:

H_6: there is a significant relationship between operating cash flow and WCR

- **Financial leverage:** This is linked with WCM in the literature (Gill, 2011; Nazir & Afza, 2009; Chiou *et al.,* 2006; Banos-Caballero *et al.,* 2010). In line with the findings of the previous literature, this study also used debt ratio as a proxy for financial leverage (Akinlo, 2012; Banos-Caballero *et al*., 2012; Nazir & Afza, 2009; Chiou *et al.*, 2006; Banos-Caballero *et al*., 2010). Debt ratio is calculated by dividing total debt by total assets. Most of the previous studies on determinants of WCM found a negative association between financial leverage and WCR. Chiou *et al*. (2006) justified this relationship based on arguments presented in POT. As per POT, firms tend to prefer internal financing to external financing to fund their business needs. Therefore, a firm with a higher debt ratio signifies that it has less internal financing and subsequently less capital to fund day-to-day operations. In addition to this, a firm with a higher debt ratio has to incur a higher cost for external financing due to a higher risk premium (Banos-Caballero *et al*., 2010). Thus, these firms pay more attention to having effective WCM so that investment in working can be minimized to avoid further high cost external financing (Nazir & Afza, 2009). This negative relationship is also confirmed by Raheman & Nasr (2007) and Akinlo(2012) for different countries. In line with the findings of the previous literature, in this study also we expected a negative relationship between financial leverage and WCR. The following hypothesis was thus formulated:

  H_7: there is a significantly negative relationship between debt ratio and WCR

Figure 3.2 Casual relationship predicted between variables

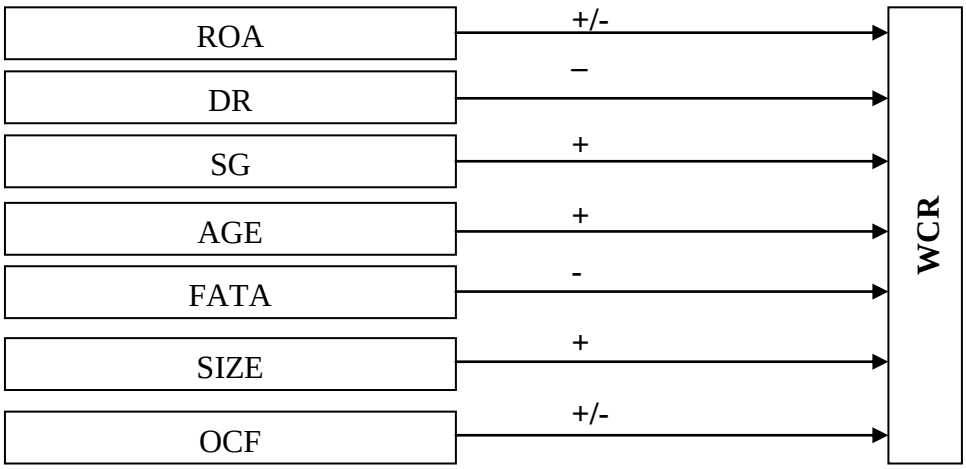


Table 3.7 List of variables examined in this study

This table explains the definition and symbol for variable used in this study

Variable	Proxy	Symbol	Type	Calculation
Working capital requirement	Working capital requirement to total assets ratio	WCR	Dependent	[(Cash and Cash Equivalents + Accounts Receivable + Marketable Securities+ Inventories) – (Account Payable+ Short-Term Loans)/Total Asset]
Profitability	Return on assets	ROA	Independent	[EBIT/Total Assets]
Leverage	Debt ratio	DR	Independent	[Total Debt/Total Assets]
Growth opportunities	Sales growth	SG	Independent	[(Sales1 - Sales0)/Sales0]
Age of the firm	Natural logarithm of Firm age	AGE	Independent	[Natural logarithm of Age]
Asset tangibility	Tangible fixed assets to total assets ratio	FATA	Independent	[Fixed financial Assets / Total Assets]
Size of the firm	Natural logarithm of Total assets	SIZE	Independent	[Natural Logarithm of Total Assets]
Operating cash flow	Operating cash flow to total assets ratio	OCF	Independent	[Cash flow from operating activity/Total Assets]

3.4.2.3 Research technique

In this study, panel data regression was used to test the research hypothesis. Panel data consist of a time series for each cross-section member in the data set. Panel data increase the sample size and are suitable for evaluating dynamics of change. The popularity of panel data analysis has increased significantly in the last decade or so. This methodology is extensively used in social and behavioural science research and is central to quantitative analysis. The basic limitation of simple regression lies in its assumption of observation of static parameter of sample. This limitation is overcome in panel regression because this methodology allows parameters to vary in some systematic or random way across sample data (Ismail, 2006). Panel data regression also makes it possible to control for unobservable heterogeneity by excluding biases derived from the existence of individual effects (Hsiao, 1985). In line with previous studies on WCM, this study also used multivariate panel data regression to assess the effects of dependent variables on WCR (Banos-Caballero *et al*., 2010; Akinlo, 2012; Banos-Caballero *et al.,* 2012; Deloof, 2003). Panel data and panel data regression used in this study are described in detail in the following sections.

3.4.2.3.1 Panel data: Panel data usually refer to a data set with time series observation of many individuals (Hsiao, 2007). Thus, in a panel data set, there must be least two dimensions, namely, cross-sectional and time series. Similarly, Baltagi (2005) also define panel data as the pooling of observations on a cross-section of individuals over several time periods. The pooling of observations generally provides a relatively large data point than in the case of cross-sectional or time series data. This increase in the data point also results in improvement of efficiency in econometric estimation (Hsiao, 1985). Panel data sets are increasingly used in social science and econometrics analysis because of their superiority over cross-sectional and time series data set (Hsiao, 2007).The following are the major advantages of using panel data:

1. **Lessening the problem of multicollinearity:** It is observed in time series data that the problem of multicollinearity and shortage of degree of freedom is very high. Thus, it is very difficult for a researcher to calculate the individual effect of every independent variable under study (Hsiao, 1985). However, in the case of panel data, the researcher has a large number of data points which increase the degree of freedom and subsequently reduce the problem of

multicollinearity among the independent variables and resulted in more efficient of econometric estimates (Hsiao, 1985).

2. **Panel data help to study the dynamics of adjustment more efficiently:** Economics behaviour is dynamic and changed over time. This is why an econometric model should be able to consider this dynamic behaviour of variables (Nerlove, 2002). Cross-sectional data are however stable in nature and do not measure the multitude of changes. For example, in the case of measuring unemployment, cross-sectional data can only estimate what proportion of the population is unemployed. They however do not provide any information about the dynamics of chance in unemployment over a period of time. This problem can easily be solved with the help of panel data because they include repeated cross-sections which can easily provide information about the change (Baltagi, 2005).

3. **Controlling for individual heterogeneity:** Panel data primarily work on the assumption of heterogeneity of individuals in the sample. In cross- section and time series studies however, this heterogeneity is not controlled and may result in based estimations (Hsiao, 2007). If the behaviour of individuals is similar on certain variables, panel data provide the possibility of learning an individual's behaviour by observing the behaviour of others. Thus, it is possible to obtain a more accurate description of an individual's behaviour by supplementing observations of the individual in question with the data on other individuals (Hsiao, 2007).

4. **Controlling the impact of omitted variables**. The fundamental problem in econometric estimation is the specification problem. It is concerned with the selection of variables included in the analysis. Sometimes we find (or do not find) the effect of certain variables due to ignoring the effect of certain variables. These variables are known as omitted variables and are sometimes correlated with included explanatory variables. However, panel data solve this problem because they contain information on both the intertemporal dynamics and the individuality of the entities which allow the researcher to control the effects of omitted variables (Hsiao, 1985).

3.4.2.3.2 Panel data regression model: Panel data consist of observations on the same entities at two or more time periods T. If the data set contains observations on the independent variables 1, X2, . . . , Xk and the dependent variable Y, then we denote the data by ($X1_{it}$, $X2_{it}$, . . . , Xk_{it}, Y_{it}), i = 1, . . . , n and t = 1, . . . , T, where the first subscript, i, refers to the entity being observed and the second subscript, t, refers to the time at which it is observed. A panel regression model thus differs from a regular time series or cross-sectional regression model because it has a double subscript on its variable. A simple panel data regression model can be expressed as follows:

$$\mathbf{Y_{it} = \alpha + \beta' X_{it} + \mu_{it}} \quad \text{.....(3.10)}$$

where i denotes the cross-sectional dimension and t denotes the time series dimension and Y_{it} is the dependent variable. α is a scalar, β is the (K x 1) vector of the regression coefficient and X_{it} is the explanatory variable. Finally, μ_{it} denotes the error component of the model which is usually either a one-way or a two-way component. Most of the panel data applications use a one-way error component model for disturbances. One-way error can be calculated as follows:

$$\mathbf{\mu_{it} = \mu_i + \nu i_t} \quad \text{.....(3.11)}$$

where μ_i denotes unobservable individual-specific time interval effects and νi_t denotes the remainder disturbance (Baltagi, 2005). Another common form of the error component of the panel regression model is a two-way error component. A two-way error component differs from a one-way component because it has an additional time-specific individual-invariant component which can be expressed as follows:

$$\mathbf{\mu_{it} = \mu_i + \lambda_t + \nu i_t} \quad \text{.....(3.11)}$$

where λ_t denotes the time-specific individual-invariant component. Thus, the basic panel regression model (3.9) can be further divided into a fixed effect model and a random effect model based on error components. In the fixed effect model, the individual-specific effect is a random variable that is allowed to be correlated with explanatory variables, whereas in the random effect model, the individual-specific effect is a random variable that is uncorrelated with explanatory variables. The choice between Fixed and Random effects can be tested by using the Hausman (1978) test.

CHAPTER 4
DATA ANALYSIS AND RESULTS-I
(WORKING CAPITAL MANAGEMENT PRACTICES OF SMEs)

4.1 INTRODUCTION

In the previous chapter, a detailed description along with justification of the research methodology and methods used in this study was given. The primary objective of this chapter is to provide a detailed analysis of the primary data collected through our survey of SME owners. This chapter aims at documenting the contemporary practices of SMEs related to WCM and its components. The empirical results related to WCM practices and its components are presented in the ensuing sections.

The rest of this chapter is organized as follows: Section 4.2 and 4.3 provides the analysis for non-response bias and normality testing respectively. Section 4.4 provides the details of respondents' demographic profile along with the fundamental characteristics of firms under study. Section 4.5 presents the analysis of WCM practices. Section 4.5.1 presents the overall WCM practices of Indian SMEs Sections 4.5.2 to 4.5.4 discuss the results of cash management practices, inventory management practices, receivable and payable management practices of SMEs. Finally, Section 4.9 presents the concluding remarks.

4.2 TESTS FOR NON-RESPONSE BIAS

In survey-based research, non-response is a very common problem. Usually, respondents chosen for a survey are not interested or are unable to take part. This creates the problem of non-responsive bias in the research. Further, it is likely that the respondents significantly differ from non-respondents. Non-response bias thus makes it difficult to generalize the results of any analysis. In this study, a total of 2316 respondents were contacted, and only 282 respondents finally participated in the survey. Out of the 282 filled-in questionnaires, 13 questionnaires were incomplete and excluded from further analysis. Finally, this survey resulted in an 11.61% response rate. Thus, it was necessary to test the possibility of existence of non-response bias. Because it was not possible for us to identify respondents and non-respondents, an approach suggested by Wallace & Mellor (1988) was used to test for non-response bias. Wallace & Mellor (1988) based their arguments on the premise that respondents

who are late to respond tend to resemble non-respondents more than they did earlier. Using this approach, respondents were classified into two categories based on their response: (1) early respondents and (2) late respondents. In this survey, 171 respondents answered the first time they were contacted without any further follow-up, and were categorized as 'early respondents'. The remaining 98 respondents who replied either after the first or subsequent follow-up were categorized as 'late respondents'. Finally, to test for non-response bias, four firm characteristics (i.e. Size based on MSME classification, age of firm, sales revenue and foreign sales) between early respondents and late respondents were compared by using the chi-square test.

Tables 4.1 to 4.4 show that no significant difference exists at a significance level of .05 between the responses of early respondents and those of late respondents. In the case of MSME classification, early responding firms do not significantly differ from late responding firms as is evident from the chi-square value of 1.222 (p-value= .543) which is not statistically significant (Table 4.1). Similarly, the difference is also not significant in the case of the age of the firm, sales revenue and foreign sales as it is evident from the chi-square statistics of 1.1992 (p-value =.551), 5.476 (p-value =.551) and 1.244 (p-value =.551) for age of the firm, sales revenue and foreign sales respectively (Tables 4.2 to 4.4). The similarities between the two groups of respondents in these characteristics lessen our concern about the non-response bias in this study.

Table 4.1 Chi square test for non response bias based on MSME classification

This table shows the comparison of proportion of responses as per MSME classification between the early and late respondents.

	Micro	Small	Medium	Total
Early Respondents	52.6%	38.6%	8.8%	100.0%
Late Respondents	55.1%	39.8%	5.1%	100.0%
Chi square Statistics		1.222		
D.F		2		
p- value		.543		

Table 4.2 Chi square test for non response bias based on age of firm

This table shows the comparison of proportion of responses as perage of firm between the early and late respondents.

	Less than 10 years	10 to 20 years	20 years or more ye	Total
Early Respondents	36.3%	39.8%	24.0%	100.0%
Late Respondents	34.7%	45.9%	19.4%	100.0%
Chi square Statistics		1.192		
D.F		2		
p- value		.551		

Table 4.3 Chi square test for non response bias based on sales revenue

This table shows the comparison of proportion of responses as persales revenue between the early and late respondents.

	Less than 1 crore	1 to 5 crore	5 to 10 crore	10 to 15 crore	15 to 20 crore	20 to 25 crore	25 to 30 crore	30 crore and above	Total
Early Respondents	22.2%	36.8%	24.6%	5.3%	3.5%	2.9%	2.3%	2.3%	100%
Late Respondents	24.5%	34.7%	26.5%	8.2%	0.0%	2.0%	1.0%	3.1%	100%
Chi square Statistics					5.476				
D.F					7				
p- value					.602				

Table 4.4 Chi square test for non response bias based on foreign sales

This table shows the comparison of proportion of responses as per the foreign sale between the early and late respondents.

	No foreign sales	Up to 25% foreign sales	25% to 50% foreign sales	More than 50% foreign sales	Total
Early Respondents	77.8%	9.4%	7.0%	5.8%	100%
Late Respondents	79.6%	7.1%	5.1%	8.2%	100%
Chi square Statistics			1.244		
D.F			3		
p- value			.742		

4.3 TESTS FOR NORMALITY

The normality of the collected data set is the basic assumption for parametric tests such as the analysis of variance and t-test (Hair *et al*., 2006; Kline, 2005; Tabachnick & Fidell, 2007). Normality can be explained by the assumption that the data distribution in each item is normally distributed (Hair *et al*., 2006; Tabachnick & Fidell, 2007). According to Hair *et al.* (2006), "if the variation from the normal distribution is sufficiently large, all resulting statistical test(s) are invalid, because normality is required to use the F and t statistics". The normality of data can be determined by statistical and graphical methods. Skewness and kurtosis are the most popular statistical methods to test univariate normality (Pallant, 2007). For a data set to be normally distributed, it is recommended that the value of skewness and kurtosis be zero (Curran *et al.,* 1996). However, any value of skewness and kurtosis between -2 and +2 is considered acceptable to prove a normal univariate distribution (George & Mallery, 2011). Similarly, graphical methods that include a histogram and normality plot are also used to determine the normality of a data set. The Q-Q plot is an easy

graphical method for testing the assumption of normality and is the most used method (Norusis, 1992). If the data points in a Q-Q plot are grouped around the straight line, then the variables are considered to be normally distributed (Field, 2009).In this study, as presented in Table 4.5, all the variables (except few) are within the normal range of skewness and kurtosis. This ensures the normality of data in this study. In addition, the Q-Q plot for all the variables also confirms the normality. Q-Q plots in case of all variables are presented in Annexure-II.

Table 4.5 Value of skewness and kurtosis of research variables

This table shows the value of skewness and kurtosis along with standard error for all the questions asked on 5 point Likert type scale to determine the normality of data.

Q. No	Sub question	Skew.	Std. Error of Skew.	Kurtosis	Std. Error of Kurtosis
Q-7	a. Retained Profits	-.606	.149	-.364	296
	b. Bank overdrafts/Cash Credit	-.442	.149	-.806	.296
	c. Short term Bank Loans	.333	.149	-.439	.296
	d. Suppliers Credit	-.073	.149	-.742	.296
	e. Factoring	.777	.149	-.496	.296
	f. Loan From Family members	.019	.149	-.616	.296
	g. Loan From Money lenders	.522	.149	-.096	.296
	h. Government Sponsored Schemes	.494	.149	-.842	.296
	i. Advance from buyers	.779	.149	.142	.296
	j. Letter of Credit	.900	.149	.400	.296
Q-10	a. Cash management	-.512	.149	-.102	.296
	b. Inventory management	.001	.149	-.264	.296
	c. Receivable management	-.049	.149	-.183	.296
	d. Payable management	.898	.149	.992	.296
Q-15	a. Currency exchange rate	.981	.149	.302	.296
	b. Level of inflation	.514	.149	-.529	.296
	c. Interest rate	.438	.149	-.659	.296
	d. Financial and banking environment	.176	.149	-.342	.296
	e. Market condition	.080	.149	-.178	.296
	f. Overall economic environment(GDP)	.536	.149	.202	.296
Q-18	a. Material requirement planning	.131	.149	-.867	.296
	b. Inventory models (EOQ)	2.933	.149	7.959	.296
	c. ERP system	-.798	.149	1.3792	.296
	d. Just-in-time	2.090	.149	4.186	.296
	e. Supply chain management	.376	.149	-.780	.296
	f. Sales forecasting	-.049	.149	.125	.296
Q-19	a. Price discount	-.487	.149	-.521	.296
	b. Seasonal Availability	.180	.149	-.471	.296
	c. Credit term offered by suppliers	.037	.149	-.115	.296
	d. Shortage cost	.022	.149	.396	.296
	e. Storage cost	.639	.149	.567	.296
Q-22	a. Improved customer loyalty	.493	.153	-.504	.304

	b. Increased Sales	-.336	.153	.148	.304
	c. Increased financial reputation	.526	.153	-.210	.304
	d. Competitive Pressure	.248	.153	-.554	.304
Q-24	a. Customers past records from other business firm	.214	.153	-.692	.304
	b. Customers past financial dealing with the company	.195	.153	-.764	.304
	c. Customers bank reference	1.773	.153	3.528	.304
	d. Credit rating of firm	3.066	.153	10.158	.304
	e. Market reputation	-.469	.153	.143	.304
	f. Part Payment In advance	.084	.153	-.926	.304
Q-26	a. Special handling of large remittance	.172	.153	-.029	.304
	b. Verbal & written request	-.336	.153	.373	.304
	c. Bank Diversification	3.415	.153	11.583	.304
	d. Cash discount	.783	.153	.844	.304
	e. RTGS/NEFT	-.376	.153	-.769	.304
	f. Personal Visits	.080	.153	-1.086	.304
Q27	a. Centralized payables	.567	.149	-.058	.296
	b. Payable through draft/Cheque	.332	.149	-.668	.296
	c. Disbursing from remote geographical location	3.709	.149	13.727	.296
	d. Maximum utilization of credit limit	.348	.149	-1.299	.296
Q28	a. Your own financial policy	.025	.149	-.231	.296
	b. The economic environment	-.017	.149	-1.210	.296
Q29	a. Credit sale to company A	-.313	.149	-1.289	.296
	b. Credit sale to company B	.495	.149	-.952	.296
Q30	a. 5% of your sales revenue	.031	.149	-.239	.296
	b. 10% of your sales revenue	-.006	.149	-.237	.296
Q31	a. Confident in cash management in strong performance	-.516	.149	-1.276	.296
Q32	a. Your own financial policy	.000	.149	-1.264	.296
	b. The economic environment	.099	.149	.059	.296
Q33	a. 5% of your sales revenue	.877	.149	.076	.296
	b. 10% of your sales revenue	.387	.149	-.595	.296
Q34	a. Confident in cash management in poor performance	-.583	.149	-.371	.296

4.4 SAMPLE DESCRIPTIONS

The survey of SME owners was conducted during March 2015 to May 2016 to collect primary data. A total of 2316 SME owners were contacted through various modes, that is, email survey, telephonic survey and personal administration, in the state of Rajasthan. Out of a total of 2316 SME owners contacted, only 282 SME owners eventually filled in the questionnaire, which resulted in a 12.17% response rate. Finally, 13 questionnaires were discarded due to missing data and the final sample for this study resulted in 269 respondents. All firms in the sample were manufacturing

SMEs because in these firms the WCM decision is relatively more important than in service firms (Padachi*et al.*, 2012). In addition to this, a manufacturing firm has to hold larger inventories and accounts receivable. Thus, working capital issues are relatively more important in these firms.

4.4.1 Profile of Respondents

The objective of this study was to document the WCM practices of SMEs. A structured questionnaire was therefore administered to the owner of SMEs responsible for managing the working capital in the organization. The first question of the questionnaire was drafted to gather information about the demographic characteristics of respondents related to their gender, age, level of education and length of professional experience. The demographic profile of the respondents of this study is presented in Table 4.6. Because SMEs are mostly owner driven and all the aspects of business were managed by owners, the majority of the participants in this survey were SME owners. Table 4.6 show that 95.9% (n=258) of the respondents were owners of their firms while only 4.1% of the participants were managers (n=11). Similarly, in this survey, the participation of women SME owners was also limited because only 8.9% (n=24) of the respondents were female and 91.1% (n=245) were male. The limited participation of women in this survey was because in India SMEs are primarily owned by males. As per the report of the International Finance Corporation (IFC, 2012), only 10% of the SMEs in India are owned by women entrepreneurs. In terms of age, the respondents were given four choices of answers (i.e. age group), namely, <30 years old, between 30 and 40 years old, between 40 and50 years old and >50 years old. Table 4.6 show that 35.3% (n=95) of the respondent belong to the 'between 40 and 50 years' age category followed by the 'between 30 and 40 years' age category having 28.3% (n=76) of the respondents. However, the age categories of <30 years and >50 years have 14.1% (n=38) and 22.3% (n=60) respondents, respectively. To determine the level of education, SME owners/managers were given four choices, namely, up to higher secondary or diploma, graduate degree, postgraduate degree and professional degree like CA/CFA/MBA. Table 4.6 indicates that 41.3% (n= 111) of the respondents have a graduation degree followed by 37.5% (n=101) of the respondents who have a postgraduate degree and 16% (n=43) of the respondents with education up to the higher secondary or diploma level. It is also

observed that participation of SME owners/managers with a professional degree (CA/CFA/MBA) is limited to only 5.2% (n=14).

Table 4.6 Demographic details of the respondents

This table shows the proportion of respondents in each category based on their demographic profile

Demography of respondents	Group	Frequency	Percentage
Position	Owner	258	95.9
	Manager	11	4.1
	Total	269	100.0
Gender	Male	245	91.1
	Female	24	8.9
	Total	269	100.0
Age	Up to 30 years	38	14.1
	Between 30 to 40 years	76	28.3
	Between 40 to 50 years	95	35.3
	50 years and above	60	22.3
	Total	269	100.0
Level of Education	Up to higher secondary or Diploma	43	16.0
	Graduation	111	41.3
	Post graduation	101	37.5
	CA/CFA/MBA	14	5.2
	Total	269	100.0
Work Experience	Up to 5 years	33	12.3
	Between 5 to 10 years	87	32.3
	Between 10 to 20 years	91	33.8
	More than 20 years	58	21.6
	Total	269	100.0

Finally, to capture the length of working experience, the respondents were asked to choose from among four categories, namely,<5 years, between 5 and 10 years, between 10 and 20 years, and >20 years. Table 4.6 shows that 33.8% (n=91) of the SME owners/managers have a work experience between 10 and 20 years followed by 32.3% (n=87) of the SME owners/managers with a work experience between 5 and 10 years and 21.6% (n=58) with >20 years of work experience. Participation of SME owners/managers with a work experience of <5 years is limited to only 12.3 %

(n=33). This clearly means that more than half of the respondents have a work experience of >10 years.

4.4.2 Profile of Respondent Firms

In addition to capturing the respondent's profile, in this survey, information related to responding firms' fundamental characteristics was collected. This included size as per the MSME development act, ownership structure, age of firm, sales revenue, export orientation, financial leverage and financial performance.Information relating to the firm was collected in question 2 of the questionnaire. Tables 4.7 and 4.8 provide information related to the profile of responding firms.

Because this study is intended to capture the WCM practices of micro, small and medium enterprises, it is necessary to capture the information related to MSME classification to determine the status of responding firms. Table 4.7 shows that more than half of the responding firms belong to the micro category (53.5%, n=144) followed by small (39%, n=105) and medium (7.4%, n=20) categories. Further, to determine the ownership structure of responding firms, the respondents were provided with six choices, namely, sole proprietorship, partnership, co-operative society, private limited company, limited liability partnership and trust. Table 4.7 elucidates that 53.5% (n=144) of the responding firms are in the form of sole proprietorship concerns, whereas 14.1% (n=38) and 32.3% (n=87) are in the form of partnership and private limited companies, respectively. However, no responding firms fall under the categories of co-operative society, limited liability and trust. These results indicate that Indian SMEs are majorly operating as sole proprietary concerns. Further, to determine the size of firms measured by total sales revenue, the respondents were asked to choose the sales revenues of the previous year from among the eight categories, namely, up to INR 1 crore, between INR 1 and 5 crores, between INR 5 and 10 crores, between INR 10 and 15 crores, between INR 15 and 20 crores, between INR 20 and 25 crores, between INR 25 and 30 crores and INR 30 crores and above. Table 4.7 shows that the maximum number (36.1, n=97) of SMEs fall in the category between INR 1 and 5 crores followed by categories between INR 5 and 10 crores (25.3%, n=68), up to INR 1 crore (23%, n=62), between INR 10 and15 crores (6.3%, n=17), between INR 20 and 25 crores (2.6%, n=7) , INR 30 crores and above (2.6%, n=7), between INR 15 and 20 crores (2.2%, n=6) and between INR 25 and 30 crores

(1.9%, n=5). These results elucidate that SMEs in the sample aremajorly small in size because 84.4% (n=227) of the SMEs have a sales revenue of below INR 10 crores.

Table 4.7 Fundamental characteristics of firms

This table shows the proportion of responses in each category based on firm's characteristics

	Category	Frequency	Percentage
Type of Ownership	Sole proprietorship	144	53.5
	Partnership	38	14.1
	Private Ltd.	87	32.3
	Total	**269**	**100.0**
Sales Revenue	Up to 1 crore	62	23.0
	Between 1 to 5 crore	97	36.1
	Between 5 to 10 crore	68	25.3
	Between 10 to 15 crore	17	6.3
	Between 15 to20 crore	6	2.2
	Between 20 to2 5 crore	7	2.6
	Between 25 to 30 crore	5	1.9
	30 crore and above	7	2.6
	Total	**269**	**100.0**
Leverage (debt as a % of total assets)	Up to 10%	64	23.8
	10 to 25 %	123	45.7
	25% to 50%	65	24.2
	50% and above	17	6.3
	Total	**269**	**100.0**
Export orientation	No foreign sales	211	78.4
	up to 25% foreign sales	23	8.6
	Between 25% to 50% foreign sales	17	6.3
	More than 50% foreign sales	18	6.7
	Total	**269**	**100.0**
Age of Firm	Up to 10 years	96	35.7
	Between 10 to 20 years	113	42.0
	More than 20 years	60	22.3
	Total	**269**	**100.0**
Size as per MSME Development Act	Micro	144	53.5
	Small	105	39.0
	Medium	20	7.4
	Total	**269**	**100.0**
Profitability	Increased	174	64.7
	Decreased	95	35.3
	Total	**269**	**100.0**

Similarly, to determine the export orientation among sample firms, responding firms were asked to mention their foreign sales as a percentage of total sales. Table 4.7 shows that more than three-fourths (78%, n=211) of the sample firms do not have any foreign sales, whereas only 8.6% (n=23), 6.3% (n=17) and 6.8% (n=18) of the

firms have foreign sales of up to 25%, between 25% and 50% and >50%, respectively. In terms of determining the capital structure of sample firms, the respondents were asked to mention their total debt as a percentage of total assets. It is found that SMEs in the sample were not highly levered because 69.5% (n=187) of the SMEs have a debt of up to 25% of the total assets, whereas only 6.3% (n=17) of the SMEs have a debt as a percentage of total assets in excess of 50%. These results confirm that SMEs in India mainly rely on internal sources for financing. In terms of the age of the firm, it is found that the maximum SMEs (42%, n=113) are under the category of 10-20 years. Similarly, 35.7% and 22.3% of the SMEs fall under the category of "up to 10 years" and "more than 20 years", respectively. Finally, to assess the financial performance of firms, SME owners were asked to mention whether the average profit of their firm for the last 3 years had increased or decreased. Firms with increasing profit were considered as firms that performed well, whereas firms with decreasing profit were considered as those that performed poorly. Table 4.7 shows that the financial performance of two-thirds of the sample firms is good because 64.7% (n=174) of the firms reported an increase in their average profit. On the contrary, the average profit of 35.3% (n=95) of the SMEs has decreased. In addition to the above fundamental characteristics of SMEs, industry classification of SMEs is also captured and frequency distribution of SMEs in various industries is presented in Table 4.8.

Table 4.8 Industry classification of SMEs in the sample

This table shows the proportion of responses in each category of Industry.

Type of Industry	Frequency	Percentage
Chemical, Rubber and Plastic	33	12.3
Agro, Food and Beverages	34	12.6
Jewellery and Gems	6	2.2
Leather, Garment and Textile	32	11.9
Metal Product	42	15.6
Paper Product	8	3.0
Pottery and Ceramics	7	2.6
Wood and Furniture	25	9.3
Marbles and Stone	25	9.3
Electrical and Electronics Machinery	14	5.2
Healthcare and Pharmaceutical	14	5.2
Engineering Equipment	16	5.9
Automobile and automobile ancillaries	13	4.8
Total	**269**	**100.0**

The Table 4.8 show that the total sample is spread across thirteen major industrial groups, namely,chemical, rubber and plastic; agro, food and beverages; jewellery and gems; leather, garment and textile; metal product; paper product; pottery and ceramics; wood and furniture; marbles and stone; electrical and electronic machinery; healthcare and pharmaceutical; engineering equipment; automobile and automobile ancillaries.

4.5 WORKING CAPITAL MANAGEMENT PRACTICES

Empirical results on WCM are presented in this section in four parts. Section 4.5.1 gives the results related to overall WCM practices and includes the discussion. Section 4.5.2 discusses cash management practices while section 4.5.3 deals with inventory management practices. Finally, section 4.5.4 discusses receivable management and payable management practices of SMEs.

4.5.1 Overall Working Capital Management Practices

In this study, we begin with the analysis of WCM practices by determining the overall policy adopted by SMEs for managing working capital. To determine the focus of SMEs on WCM, the respondents were asked to mention whether they have any policy (formal or informal) to manage working capital. Table 4.9 shows that more than one-third (37.5%, n=101) of the SMEs do not have any kind of overall policy for managing working capital in their firms. The findings of this study are consistent with those of Burns & Walker (1991) who reported that 35.3% of U.S Small firms have no explicit policy for managing working capital. Table 4.9 also shows that formalization in managing working capital is very less in Indian SMEs as it was found that only 7.1% (n= 19) of sample firms have a formal WCM policy. These results are also in line with the findings of Burns & Walker (1991) who observed that only 6.5% of US small firms have a written WCM policy. In SMEs, working capital is mostly informally managed as more than half of the sample firms (55.4%, n=149) in this study were found to have an informal policy for managing working capital. These SMEs are mainly owner driven and lack in decentralization due to which there is not much focus on the specific aspects of WCM. Apart from this, these SMEs are mainly self-financed; thus, they are not pressured by external stakeholders to have a formal policy. Table 4.9 also confirms that focus on WCM is significantly affected by the size of the firm as it can be noted that only 2.1% of the micro firms have a formal WCM policy, whereas 25% of the medium firms have a formal WCM policy.

Similarly, due to their very small size, micro firms do not pay much attention to WCM; thus, 56.3% of the micro firms do not have any kind of WCM policy (formal or informal). These differences between micro, small and medium firms are also significant as the p-value for the chi-square test is .000, which is statistically significant at the 99% confidence level (Table 4.9).

Table 4.9 Working capital management policy adopted by SMEs

This table shows the proportion of SMEs as per the WCM policy adopted by them

	Micro		**Small**		**Medium**		**Overall**	
	Count	%	Count	%	Count	%	Count	%
Formal	3	2.1	11	10.5	5	25	19	7.1
Informal	60	41.7	75	71.4	14	70.0	149	55.4
No policy	81	56.3	19	18.1	1	5.0	101	37.5
Total	**144**	**100**	**105**	**100**	**20**	**100**	**269**	**100**
χ^2 statistics			56.080***					
p-value			0.000					

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively

When it comes to decision making related to WCM policy formulation, owners of SMEs play a major role. Table 4.10 also shows that in the present study, the major responsibility of policy formulation lies only with SME owners, because in 93.5% of the SMEs in the sample the owner is the policy maker. However, only in 6.5% of the SMEs WCM policies are formulated and managed by specialized managers. Such evidence is largely due to the lack of specialization of management in small businesses. In the case of medium firms however, it is noted that 26.3% of the firms have specialized managers responsible for policy formulation related to WCM.

Table 4.10 Person responsible for formulation of WCM policy in SMEs

This table shows the proportion of responses as per the person responsible for formulation of WCM policy in SMEs

	Micro		**Small**		**Medium**		**Overall**	
	Count	%	Count	%	Count	%	Count	%
Owner	63	100	80	93	14	73.7	157	93.5
Finance Manager	0	0	6	7	5	26.3	11	6.5
Total	**63**	**100**	**86**	**100**	**19**	**100**	**168**	**100**
χ^2 statistics			16.574***					
p -value			0.000					

*, **, *** Significant at the 0.10, 0.05, and 0.01 level respectively

To dig deep into the WCM policy of SMEs, the respondents were also asked to mention how often they review the WCM policy in their firm. The regular review of WCM policy is very important for the efficient management of working capital because in today's changing environment it is very important to modify policies according to these changes. However, surprisingly, SMEs do not regularly review their policy for WCM. They usually adopt a contingent approach towards WCM, which means that they review the policy related to working capital whenever they feel the need to do so. Table 4.11 indicates that 63.7% (n=107) of SME owners prefer to review their WCM policies as per the necessity of their firms. Similarly, 14.3% of the SME owners acknowledged that they prefer to review their policies annually, 13.1% firms review their policies quarterly, whereas only 8.9% firms make an assessment for their working capital policy semi-annually. A significant difference is also observed between micro, small and medium enterprises with respect to WCM policy review. Table 4.11 indicates that only 17.4% of the micro firms regularly review (quarterly, semi-annually or annually) their WCM policy. On the contrary, 68.5% of the medium firms regularly review (quarterly, semi-annually or annually) their WCM policy. It can be concluded from the results presented in table 4.6 that the focus on WCM is higher in medium firms as compared to that in micro and small firms. These differences between micro, small and medium firms are also statistically significant as the chi-square statistics is 16.574 with a p-value of 0.000 (Table 4.11).

Table 4.11 Review of working capital policy in SMEs

This table shows the proportion of responses as per the frequency of review of WCM policy in SMEs

	Micro		**Small**		**Medium**		**Overall**	
	Count	%	Count	%	Count	%	Count	%
Quarterly	2	3.2	14	16.6	6	31.6	22	13.1
Semi Annually	5	7.9	9	10.5	1	5.3	15	8.9
Annually	4	6.3	14	16.3	6	31.6	24	14.3
Whenever necessary	52	82.5	49	57.0	6	31.6	107	63.7
Total	**63**	**100**	**86**	**100**	**19**	**100**	**168**	**100**
χ^2 statistics	25.134***							
p- value	0.000							

*, **, *** Significant at the 0.10, 0.05, and 0.01 level respectively

Further, to understand the working capital financing in SMEs, the respondents were asked to mention the financing policy adopted in their firms. They were provided with three options for financing policy, namely, moderate policy (match the maturity of finance with maturity of assets), aggressive policy (mostly uses short-term financing to finance permanent assets) and conservative policy (uses long-term financing for both permanent assets and temporary assets). Table 4.12 demonstrates that SMEs are not very aggressive in their financing approach because only 15.6% (n=42) of the SMEs have an aggressive policy for financing. These results on financing policy are fairly consistent with the findings of Zhao (2011) who reported that only 13% of Australian large firms are aggressive in their financing. Table 4.12 also shows that the maximum number (44.6%, n=120) of SMEs in India follow a moderate approach for financing, whereas 39.8% (n=107) of the SMEs have a conservative approach. SMEs adopt a moderate policy primarily because it helps in maintaining a proper trade-off between liquidity and profitability. These results are also consistent with the findings of Perera & Wickremasinghe (2010), who observed that 42.7% of the firms in Sri Lanka use a moderate financing policy.

Table 4.12 Type of financing policy adopted by SMEs

This table shows the proportion of SMEs as per the financing policy adopted by them.

	Micro		**Small**		**Medium**		**Overall**	
	Count	%	Count	%	Count	%	Count	%
Moderate	83	57.6	30	28.6	7	35.0	120	44.6
Aggressive	12	8.3	24	22.9	6	30.0	42	15.6
conservative	49	34.0	51	48.6	7	35.0	107	39.8
Total	**144**	**100**	**105**	**100**	**20**	**100**	**269**	**100**
χ^2 statistics	26.369***							
p-value	0.000							

*, **, *** Significant at the 0.10, 0.05, and 0.01 level respectively

Further, to understand the difference or similarity among the financing policy of micro, small and medium enterprises, the whole sample was divided into three groups based on the classification of the MSME Development Act 2006. Table 4.12 indicates that micro, small and medium firms have some variation in terms of financing policy. Further, 57.6% (n=83) of micro SMEs have a moderate policy for financing, whereas only 28.6% (n=30) of the small firms have a moderate policy. There was also a similar variation in the case of aggressive financing between micro

and medium firms. Medium firms are more aggressive than micro firms because medium firms have a relatively easy access to finance due to their large size. Thus, they can accommodate aggressive policy. This difference among micro, small and medium firms is also found to be statistically significant because the chi-square statistics is 26.369 with a significant p-value of 0.000.

After documenting the financing policy of SMEs, in this survey, an attempt was made to identify the financing preference for WCR of SMEs. To determine the working capital financing preference, SME owners were asked to rate the preference for various sources of finance, namely, retained profits, bank overdrafts/cash credit, short-term bank loans, supplier credit, factoring, loan from family members, loan from money lenders, government-sponsored schemes, buyers credit, letter of credit on a 5-point scale from 1 not at all preferred to 5 extremely preferred. Table 4.13 gives the mean rating of preference for each financing source. It is clear that SME owners/managers mostly prefer ***internal sources*** for working capital financing because it is cost free and easily available. The results show that SME owners/ managers have the highest preference for ***retained profit*** (mean rating =4.2007) followed by ***credit from suppliers*** (mean rating =3.6617), ***cash credit/bank overdraft*** (mean rating =3.2974) and ***loan from family and friends*** (mean rating =2.6171). On the contrary, SME owners/managers do not much prefer sources such as ***factoring*** (mean rating =1.4275), ***letter of credit*** (mean rating =1.7584), ***buyers credit*** (1.9071), ***loan from money lenders*** (2.3234) and ***government-sponsored scheme*** (mean rating =2.4796) for working capital financing. Table 4.13 also shows that in the case of external financing SMEs rely heavily on credit provided by suppliers of raw materials (mean rating =3.66) because here a firm does not have to bear the extra cost. A similar higher preference is also found for ***cash credit/bank overdraft*** facility provided by banks and financial institutions. These results for financing preference are fairly consistent with those of Padachi *et al*. (2012) who found a higher preference for ***retained profit*** (mean rating = 4.01), ***cash credit/bank overdraft*** (mean rating = 3.64) and supplier's credit (mean rating = 3.16) among Mauritian SMEs. In the case of short-term bank loans, SMEs have a moderated preference (mean rating = 2.68) due to procedural issues involved in it. Surprisingly, SME owners least preferred ***factoring*** which is a kind of supplier financing and involves selling of accounts receivable at a discount for immediate cash. This low preference for factoring can be

justified by the fact that most developing countries do not have strict laws and sufficiently quick and efficient judicial systems, which allows lenders to enforce factoring contracts (Klapper, 2006). Further, India does not have the technological infrastructure or access to commercial credit information necessary to allow this type of automated credit approval.

In addition to this, some variation in the working capital financing preference of micro, small and medium firms was also observed. Table 4.13 indicates that micro firms have the highest preference for ***retained profit*** because their working capital requirement is relatively lower and can be fulfilled by internal sources. On the contrary, medium firms have relatively larger working capital requirements which is very hard to be fulfilled by ***retained profit*** only. Thus, the preference of medium firms is higher for formal bank financing in the form of cash credit/overdraft (mean rating = 4.5).

On the contrary, micro firms due to a lack of knowledge of these schemes and procedural issues do not prefer these sources for financing. In addition to this, micro and medium firms also differ in terms of preference for ***loans from family and friends***. Micro firms due to their small firm size find it difficult to approach formal financing sources for working capital. Thus, they heavily rely on internal financing of informal sources such as ***loan from family and friends*** (mean rating =2.9236). But medium firms having a fairly easy access to formal funding have a very low preference for such informal sources (mean rating =1.8).

Meredith (1986) advocated that financial management issues including WCM is the centre of the overall management of SMEs. Inefficiency of managing financial affairs related to working capital creates serious problems for SMEs and hampers their performance (Jindrichovska, 2013). The improvement in WCM primarily starts with the regular monitoring of the investment in working capital. Thus, this research also aims at identifying the efforts put in by SMEs to monitor the efficiency of working capital for the subsequent improvement in it. Table 4.14 indicates that SMEs are not much focused on monitoring WCM efficiency, as more than one-third (37.5%, n=101) of the SMEs sampled do not regularly monitor their investment in working capital to determine its efficiency.

Table 4.13 Working capital financing preference of SMEs

This table shows the mean rating score of respondents for various working capital financing sources on a 5 point scale where 1 =Not at all preferred , 2 = Somewhat preferred , 3 =Moderately preferred , 4 =Highly preferred , and 5 =Extremely preferred

	Micro		Small		Medium		Overall	
Sources of Finance	**Mean Value**	**Rank**	**Mean Value**	**Rank**	**Mean Value**	**Rank**	**Mean Value**	**Rank**
Retained profit	4.2222	1	4.2667	1	3.7000	3	4.2007	1
Cash Credit/Overdraft	2.7569	4	3.8095	2	4.5000	1	3.2974	3
Short term bank loan	2.2500	6	3.1619	4	3.3000	5	2.6840	4
Suppliers credit	3.6806	2	3.6667	3	3.5000	4	3.6617	2
Factoring	1.3819	10	1.4095	10	1.8500	8	1.4275	10
Loan from family and friend	2.9236	3	2.3524	6	1.8000	9	2.6171	5
Loan from money lenders	2.4097	5	2.0476	9	2.1500	6	2.3234	7
Government sponsored scheme	1.7917	7	3.0952	5	4.2000	2	2.4796	6
Buyers credit	1.7431	8	2.0762	7	2.2000	7	1.9071	8
Letter of credit	1.5486	9	2.0571	8	1.7000	10	1.7584	9

These firms do not monitor WCM probably due to the insufficient use of technologies in managing business processes, and inadequate managerial capabilities of SME owners. Additionally, In SMEs, business processes are rarely documented which makes monitoring a lot more difficult for managers. A significant variation is also observed between practices related to WCM monitoring among micro, small and medium firms Table 4.14 shows that 95% of the medium firms and 81% of the small firms monitor WCM efficiency, whereas only 44.4% of the micro firms regularly monitor WCM. These results show that focus on WCM increases with an increase in firm size. The higher importance of WCM in medium firms is due to the relatively formalized structure and standardized management practices.

Table 4.14 Monitoring of working capital
This table shows the proportion of SMEs on the basis of monitoring or working capital in their firms.

	Micro		**Small**		**Medium**		**Overall**	
	Count	%	Count	%	Count	%	Count	%
No	80	55.6	20	19.0	1	5.0	101	37.5
Yes	64	44.4	85	81.0	19	95.0	168	62.5
Total	**144**	**100**	**105**	**100**	**20**	**100**	**269**	**100**
χ^2 statistics	44.275***							
p-value	.000							

*, **, *** Significant at the 0.10, 0.05, and 0.01 level respectively

Further, to understand the key value metrics for monitoring WCM, the respondents were asked to choose from among six matrices, namely, return on investment (ROI), net working capital (NWC), cash conversion cycle (CCC), current ratio (CR) and working capital turnover (WCT). Table 4.15 presents the proportions of SME owners/managers who adopt the particular key value metrics of working capital.

The results show that the maximum number of SMEs (46.4%, n=78) that monitor WCM consider the ***CCC*** as the key value metric of WCM. This finding also supports the view of Richards & Laughlin (1980) who advocated the CCC as a comprehensive measure of WCM. Gitman (1974) also considered the CCC as a key factor in WCM, because it takes into account all components of WCM (e.g. inventory management, receivable management and payable management).

The second most popular key value matrix for WCM monitoring is '***NWC'***. It is found that 39.9% (n=67) of the SMEs use ***'NWC'*** as a key value matrix for working capital followed by current ratio (11.4%, n=19), ROI (8.9%, n=15) and working capital turnover (7.1%, n=12). Further, in the case of micro, small and medium firms, key value matrices are somewhat different. In the case of medium (47.4%) and small (55.3%) firms, CCC is the maximum used key value metric for WCM; however, micro firms (54.7%) rely more on NWC for managing and monitoring working capital. Similarly, in the case of 'return on investment', medium firms differ from micro and small firms. It is found that 36.8% of the medium firms use the ROI as a key metric, whereas only 4.7% of the micro firms and 5.9% of the small firms consider ROI as a key metric for monitoring working capital.

Table 4.15 Key value metric for monitoring and managing working capital
This table shows the proportion of SME owners in each category as per key value metric considered by them for monitoring working capital.

	Micro		**Small**		**Medium**		**Overall**	
	Count	%	Count	%	Count	%	Count	%
Return on Investment	3	4.7	5	5.9	7	36.8	15	8.9
Net Working capital	35	54.7	25	29.4	7	36.8	67	39.9
Cash Conversion Cycle	22	34.4	47	55.3	9	47.4	78	46.4
Current Ratio	5	7.8	9	10.6	5	27.8	19	11.4
Working Capital Turnover	2	3.1	8	9.4	2	10.5	12	7.1

Finally, to assess the importance of the individual components of WCM, the respondents were asked to rate the importance of cash management, inventory management, receivable management and payable management on a 5-point scale (1 - not at all important; 5 – extremely important). Table 4.16 presents the mean scores for each component with rank. We see that cash management (mean value= 3.6803) is the most important component in the overall management of working capital followed by inventory management (mean value= 3.3903), receivable management (mean value = 2.9368) and payable management (mean value= 2.4610). The results of this study

support the arguments of Chang & Chang (1986) who reported that cash management is the most important component of financial management and the primary reason for small business failure. SMEs pay more attention to cash management because it helps in maintaining optimal cash balance. In addition to this, effective cash management also helps in identifying potential cash flow gaps and serves as a reference tool for banks and other external sources of finance.

Similarly, Table 4.16 also shows that in SMEs inventory management is considered to be the second most important component of WCM. SMEs pay more attention to inventory management because inventories represent a significant proportion of the total current assets of a business (Kruger, 2005).

Table 4.16 Focus on working capital management components

This table shows the mean rating score of respondents for various component of WCM as per their importance on a 5 point scale where 1 =Not at all important, 2 = Somewhat important, 3 =Moderately important, 4 =Highly important, and 5 =Extremely important

	Micro		Small		Medium		Overall	
	Mean Value	**Rank**	**Mean Value**	**Rank**	**Mean Value**	**Rank**	**Mean Value**	**Rank**
Cash Management	3.5556	1	3.7714	1	4.1000	1	3.6803	1
Inventory Management	3.2569	2	3.4952	2	3.8000	2	3.3903	2
Receivable Management	2.9375	3	2.8381	3	3.4500	3	2.9368	3
Payable Management	2.3681	4	2.4952	4	2.9500	4	2.4610	4

Inadequate inventory management also creates problems like loss of production due to shortage of inventory and locking of funds due to accumulation of costly physical inventories (Meyer, 1991). On the contrary, SMEs in the sample do not pay much attention to payable management as is evident from the low mean value of 2.4610 (Table 4.16). The results of this study on WCM components are partly consistent with the findings of Belt & Smith (1991) for large Australian and US firms. Belt & Smith (1991) also found the lowest ranking for preference for 'slowing' payment of payables among Australian and US large firms.

4.5.2 Cash Management Practices

After discussing overall WCM practices, the focus of this section is on individual components of WCM, that is, cash management. In this section, an attempt has been made to 1) identify the cash management approach used in SMEs; 2) determine the effect of various external factors on cash management of SMEs. First, the respondents were asked whether they prepared a cash budget in their organization. It was found that SMEs realized the importance of cash budgeting. This is supported by the fact that 81.1% (n=220) of the firms regularly prepare a cash budget to monitor cash inflows and outflows (Table 4.17). Higher reliance on cash budgeting in SMEs is due to the advantages provided by it. Preparation of a regular cash budget helps firms to determine whether they have the required cash balance to meet their short-term obligations. It is also very helpful in reduction of working capital requirements by providing information about the excessive cash maintained by a firm that could be otherwise used in productive activities and investments. These results on cash budgeting are fairly consistent with those of Agyei-Mensah (2012) who found that 93% of the SMEs in Ghana prepare a cash budget. In addition, it is also found that the focus on cash budgeting is higher in the case of medium (100%, n=20) and small (90.5%, n=95) firms as compared to that in micro firms (72.9%, n=105).

Table 4.17 Preparation of cash budget

This table show the proportion of responses based on whether they prepare cash budget or not

	Micro		**Small**		**Medium**		**Overall**	
	Count	%	Count	%	Count	%	Count	%
No	39	27.1	10	9.5	0	0.0	49	18.2
Yes	105	72.9	95	90.5	20	100.0	220	81.8
Total	**144**	**100**	**105**	**100**	**20**	**100**	**269**	**100**
χ^2 statistics			17.380***					
p-value			0.000					

*, **, *** Significant at the 0.10, 0.05, and 0.01 level respectively

Table 4.18 Shortest duration of cash budget

This table shows the proportion of responses in each category on the bases of shortest duration of cash budget.

	Micro		**Small**		**Medium**		**Overall**	
	Count	%	Count	%	Count	%	Count	%
Weekly	0	0.0	2	2.1	3	15.0	5	2.3
monthly	43	41.0	54	56.8	16	80.0	113	51.4
Quarterly	43	41.0	36	37.9	1	5.0	80	36.4
Semi-annually	6	5.7	0	0.0	0	0.0	6	2.7
annually	13	12.4	3	3.2	0	0.0	16	7.3
Total	**105**	**100**	**95**	**100**	**20**	**100**	**220**	**100**
χ^2 statistics	42.700***							
p value	.000							

*, **, *** Significant at the 0.10, 0.05, and 0.01 level respectively

Next, to determine the shortest interval of time for cash budgeting in SMEs, the respondents were asked to mention the cash budget duration for their firm. Table 4.18 show that the most prevalent interval of time for cash budgeting in SMEs is monthly (51.4%, n=113), followed by Quarterly (36.4%, n=80). These results are in contrast with those of Burns & Walker (1991), who found that UK SMEs mostly prepare a cash budget on a weekly basis (40%).

Further, to identify methods used in cash management, SME owners/managers were asked to choose from among various cash management techniques, that is, cash management through netting, centralization of cash management decisions, meeting payments in a timely manner, diversification of banks, minimizing of float, emergency liquidity reserves and managing cash through leading and lagging. Table 4.19 indicates that the most preferred approach for cash management in SMEs is ***centralization of cash management decisions***, because 86.6% of SME owners/managers were using this approach. The centralized management of cash is very helpful in managing cash tightly. Centralization makes the process of cash management more transparent and controllable due to the involvement of one individual/group responsible for all cash-related activity. The results of this study on centralization of cash management are fairly consistent with those of previous studies in the literature on large firms. Soenen (1986) found that around 70% of the firms in UK have centralized cash management decisions. Similarly, Zhao (2011) found centralization of cash management decisions as the most popular approach in cash

management with 75% of the respondents using this approach in Australia. The second most used method for cash management in SMEs is found to ***be 'maintaining emergency liquidity reserve'*** because 39.0% of SME owners/managers use this approach. This finding highlights the fact that SMEs are conservative in their approach towards cash management. By following the conservative approach, Indian firms also rely largely on maintaining proper liquidity reserves to deal with unforeseen circumstances and avoid financial distress. The third and fourth most popular methods for cash management entail meeting payments in a timely manner (23.8%) and managing cash through leading and lagging (21.6%).Table 4.19 shows that 23.8% of the SMEs pay their trade credit on time or earlier to get a discount on the invoice price from suppliers. These firms also pay their credit to reduce the fear of adverse effects on their credit history by late payments. On the contrary, SMEs in the sample do not extensively use methods such as ***bank diversification***, ***float minimization, managing cash through netting***. Table 4.19 shows that only 3% of Indian SMEs use netting for cash management despite the fact that netting is very important in cash management and reduces unnecessary communication and transaction costs. Tsamenyi & Skliarova (2005) also argued that the use of netting with leading and lagging enhances the efficiency of internal funds. However, netting is a good approach to mainly regulate settlements among subsidiaries of the same company. The study sample includes SMEs which are usually of a small size and do not have multiple subsidiaries. This can be a possible reason for the low use of netting in SMEs.

Similarly, it is also found that only 11.2% of the SMEs in this study use diversification of bank transactions to reduce risk and to enjoy all the benefits that different banks have to offer. These results are contrary to the findings of Zhao (2011) who observed that 43% of Australian large firms use bank diversification for effective cash management. The possible reasons for such contradiction are the size of the firms of these two studies. SMEs do not prefer to diversify bank transaction because it is relatively easy to establish a good and healthy relationship with a single bank than with multiple banks. In addition, Soenen (1986) and Anvari & Gopal (1983) concluded that small firms contrary to large firms prefer to limit cash transaction to one or two banks.

Table 4.19 Cash management approach used in SMEs

This table shows the proportion of respondents using a particular approach for cash management in their firm

	Micro		Small		Medium		Overall	
	Count	%	Count	%	Count	%	Count	%
Managing cash through netting	0	0.0	4	3.8	4	20.0	8	3.0
Centralization of cash management decision	125	86.8	93	88.5	15	75.0	233	86.6
Meet payments in timely manner	29	20.1	25	23.8	10	50.0	64	23.8
Bank Diversification	5	3.5	18	17.1	7	35.0	30	11.2
Float Minimization	3	2.1	11	10.5	1	5.0	15	5.6
Emergency Liquidity Reserve	47	32.6	48	45.5	10	50.0	105	39.0
Managing cash through leading and lagging	19	13.2	31	29.5	8	40.0	58	21.6

In addition, some variation in the cash management approach of micro, small and medium firms is observed in this study. Table 4.19 shows that medium firms (50%) are more concerned about meeting the payment of suppliers on time as compared to small (23.8%) and micro firms (20.1%). These medium firms have a relatively higher revenue and cash flow which enables them to pay suppliers on time. On the contrary, micro and small firms due to limited access to finance and more uncertain cash flow from customers find it difficult to pay suppliers on time. Similarly, bank diversification is also higher in medium firms (30%) as compared to that in small (17.1%) and micro firms (3.5%). On the contrary, similarity exists among micro, small and medium enterprise in terms of ***'centralization of cash management decision'*** and ***'emergency liquidity reserve'***. Centralization of cash

management decision is the most preferred approach used by micro (86.8%), small (88.5%) and medium firms (75%).

In light of the above cash management practices, an attempt was also made to assess the significance of external factors (e.g. currency exchange rates, level of inflation, interest rate, financial/banking environment, market condition and GDP] on cash management decisions. Table 4.20 shows that cash management of Indian SMEs is most affected by the market condition pertaining to demand, supply and competition (mean value =3.3569) followed by interest rate (mean value = 3.0706) and banking/financial environment of the country (mean value = 3.0669). Market condition is very important in the case of SMEs because it significantly affects the cash inflow and outflow of any business. Similarly, interest rate and banking environment also play a very important role in the financing of SMEs which ultimately affects cash management.

Table 4.20 Effect of environmental factor on cash management of SMEs
This table shows the mean rating score of SME owners for external factors as per their effects on cash management on a 5 point scale where 1 =Not at all, 2 =Somewhat, 3 =Moderate, 4 =High, and 5 = Extremely.

	Micro		Small		Medium		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
Currency exchange rate	1.8681	6	2.4952	5	2.8000	6	2.1822	6
Level of inflation	2.1042	5	2.9143	4	4.2000	1	2.5762	4
Interest rate	2.9028	3	3.1619	2	3.8000	3	3.0706	2
Banking and financial environment	2.9306	2	3.2476	2	3.1000	5	3.0669	3
Market condition	3.2083	1	3.4286	1	4.0500	2	3.3569	1
GDP	2.1736	4	2.3238	6	3.3500	4	2.3197	5

The other external factors, that is, ***currency exchange rates*** (mean value=2.1822), ***level of inflation*** (mean value= 2.5762) and ***GDP*** (mean value=2.3197), do not play an important role in cash management of SMEs because the mean score for all these variables is less than the mid value of 3. Currency exchange rate does not have any significant effect on the cash management of SMEs

because 78.4% of the firms in the sample do not have any kind of foreign exposure. In addition, it is also observed that in the case of medium firms the effect of external factors is a lot higher as compared to that of micro and small firms. In the case of medium firms, the effect of the ***level of inflation*** (mean value = 4.2000) and GDP (mean value = 3.3500) on cash management is higher, but in the case of small and micro firms, these factors do not play an important role in cash management.

4.5.3 Inventory Management Practices

Another important component of WCM in SMEs is inventory management. Inventories represent a large portion of the total current assets of any business (Kruger, 2005). Thus, the inaccuracy of managing inventory causes a variety of problems for business. Firstly, the shortage of inventory results in a loss of production and secondly the excess of inventory results in an unproductive investment. Therefore, effective and efficient inventory management practices are substantial for the smooth functioning of a business (Meyer, 1991).

To document the inventory management practices of SMEs, firstly respondents were asked to specify the main purpose of inventory management in their firms among different options, that is, satisfy customer demand, take advantage of economies of scale, meet seasonal high demand, reduce holding cost, safeguard against wastage and safeguard against shortage. Table 4.21 shows that 68.8% of the SMEs mainly use inventory management to provide a ***safeguard against shortage*** so that customer demand can be satisfied regularly. The second most important purpose of inventory management in SMEs is optimization of the investment in inventories because 34.2% of the respondents chose ***'reducing the holding cost of inventory'*** as an objective of inventory management. Further, it can be noted that 21.6%, 20.1% and 13.8% of the respondents chose 'safe guard against wastage', take advantage of economy of scale and meet seasonal high demand, respectively, as a purpose of inventory management). Furthermore, only 9% of the micro firms take advantage of economy of scale while 40% of the medium firms focus on taking advantage of economies of scale. Medium firms have relatively fewer financial constraints which is why these firms can have economies of scale for cost advantage. In contrast, micro firms due to irregular and relatively limited demand find it difficult to have economies of scale.

Table 4.21 Purpose of inventory management in SMEs
This table shows the proportion of respondents in each category based on the purpose of inventory management in their firm.

	Micro		Small		Medium		Overall	
	Count	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Take advantage of economies of scale	13	9.0	33	31.4	8	40	54	20.1
Meat seasonal high demand	15	10.4	18	17.1	4	20	37	13.8
Reduce holding cost	54	37.5	31	29.5	7	35	92	34.2
Safe guard against wastage	34	23.6	16	15.2	8	40	58	21.6
Safe guard against shortage	83	57.6	88	83.8	14	70	185	68.8
Total	**144**	**100**	**105**	**100**	**20**	**100**	**269**	**100**

Secondly, to determine the inventory management practices of SMEs, the respondents were also asked to rate the importance of various inventory management approaches (material requirement planning [MRP], inventory models, enterprise resource planning [ERP] system, just in time, Supply chain management [SCM], sales forecasting) as per the applicability in their firm on a scale of 1 to 5 where 1 represents not at all important and 5 represents extremely important. Table 4.22 indicates that material requirement planning (mean value = 3.0743) is the most popular technique in inventory management in SMEs in India. These findings are in line with the results of Zhao (2011) who observed that MRP is a popular inventory management technique in large Australian firms.

A higher reliance on MRP in SMEs is due to the advantages provided by it. A proper MRP system helps firms to have the right quantity of raw material for production. It also ensures a reduction in the production cost due to optimal investment in inventory and timely delivery of finished products to customers. An MRP system is a kind of information system which takes time and financial expertise to develop. This is why micro firms (mean value = 2.6736) rely less on MRP than do

medium firms (mean value = 3.3619) and small firms (mean value= 4.4500) because these firms are very small in size and also lack managerial expertise.

Table 4.22 Importance of inventory management approach in SMEs

This table shows the mean rating score of SME owners for inventory management approach as per the importance in their firm on a 5 point scale where 1 =Not at all important, 2 =Somewhat important, 3 =Moderate important, 4 =High important, and 5 = Extremely important..

	Micro		Small		Medium		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
Material requirement planning (MRP)	2.6736	2	3.3619	1	4.4500	1	3.0743	1
Inventory models (EOQ)	1.0694	6	1.3333	6	3.1500	5	1.3271	6
ERP System	1.4514	4	2.7429	4	3.5500	4	2.1115	4
Just in Time (JIT)	1.2014	5	1.4571	5	2.2500	6	1.3792	5
Supply Chain management(SCM)	1.8889	3	2.8762	3	4.1500	2	2.4424	3
Sales forecasting	2.7847	1	3.1714	2	3.6500	3	3.0000	2

The second most important technique of inventory management is sales forecasting with a mean rating of 3.000. These results are consistent with the findings of Zhao (2011) who noted that sales forecasting is very important for Australian firms. Accurate sales forecasting plays a very important role in inventory management because it helps business firms to maintain an optimum level of inventory. The third most popular method is SCM, with a mean rating of 2.4424. This is because SCM enhances the business performance by effectively integrating suppliers, manufacturers, distributors and customers (Chopra &Meindl, 2001). The results of this study support the argument of Lenny Koh*et al.* (2007) who found that SMEs with a high level of SCM practices also have a high operational performance. The focus on SCM in micro and medium firms also differs as is evident from the mean difference (4.1500-1.8889 = 2.261) of rating between micro and medium enterprises. Owners of

medium firms which have a more formal organizational structure and management process find SCM to be more useful for inventory management than do micro firms. Micro firms usually consider SCM as an exertion of power by their customers and thus do not use SCM (Quayle, 2003).

Further, with a mean rating of 3.5550, the ERP system is also considered very important for inventory management in medium firms only. The ERP system helps a business in integrating key functions related to order processing, production and sales. Thus, the ERP system helps in cost reduction and improves operational efficiency through improvement in business processes (Nah *et al.*,2001; Beheshti, 2006). On the contrary, micro and small firms do not find ERP to be of much use for their inventory management as is evident by the low mean rating of 1.0694 and 1.3333, respectively (Table 4.22). These micro and small business owners are firstly less aware of the capabilities and advantages of ERP and secondly, these firms do not have skilled in-house IT resources that can provide suitable inputs and proper guidance to the implementation team. Lastly, they have budget constraints. Similar to the ERP system, the use of other sophisticated techniques such as JIT and EOQ is also very limited in SMEs. Further, a lower mean rating of 1.3271, 1.3792 for EOQ and JIT, respectively, shows that In Indian SMEs, JIT and inventory models do not play an important role in Inventory management (Table 4.22). JIT is not very popular in SMEs because for implementing JIT an organization must have considerable purchasing power and strong economies of scale. SMEs have an infrequent demand and they are not usually the top priority of their suppliers, which also hinders the implementation of JIT. In the case of application of inventory models like EOQ, Agyei-Mensah (2012) also found similar evidence for SMEs in Ghana. He concluded that 83% of the SMEs in Ghana do not at all use EOQ models for determining reorder quantity for their firm.

Finally, to trace the system for stock replenishment in Indian SMEs, owners/managers were asked to (1) choose the techniques used for deciding the time and quantity for stock replenishment and (2) rate the important factors considered at the time of stock replenishment. With regard to determination of reorder level and quantity, the respondents were given four options, that is, adhoc decision, cost balancing methods, computerized inventory control system and physical inspection of the Stock register. Table 4.23 indicate that maximum (37.2%) SMEs maintain a stock

register in physical form to determine the time and quantity of stock replenishment. These results are in line with the findings of Chittenden *et al.* (1998) who reported that more than one-third of the SMEs in the UK relied on manual methods for inventory control and stock replenishment. The second most used approach is a computerized inventory control system as 32.5% SMEs maintain this for stock replenishment.

Table 4.23 Method used for stock replenishment in SMEs

This table shows the proportion of respondents in each category as per the method used for stock replenishment in their firm.

	Micro		Small		Medium		Overall	
	Count	%	Count	%	Count	%	Count	%
Ad-hoc decision	52	36.1	22	21.0	0	0.0	74	27.5
Cost balancing methods	1	0.7	3	2.9	3	15.0	7	2.6
Physical inspection of Stock register	62	43.1	36	34.3	2	10.0	100	37.2
Computerized inventory control system	29	20.1	44	41.9	15	75.0	88	32.7
Total	**144**	**100**	**105**	**100**	**20**	**100**	**269**	**100**

These results show that more than two-thirds of the SMEs have a formal inventory system, whereas 27.5% of the SMEs take a stock replenishment decision on an adhoc basis. These 27.5% SMEs mainly rely on the owner's/manager's experience for determining the stock level and reorder quantity. Similar to the finding of Belt & Smith (1991), in this study, we observed that cost balancing methods are not much used in SMEs as only 2.6% firms in our sample follow cost balancing models like EOQ. In addition, Table 4.23 shows some variation in the approaches of micro, small and medium firms. It is noted that adhoc decision making related to stock replenishment is higher in the case of micro firms (36.1%), whereas it is relatively low in small firms (21%). Similarly, it is also found that the majority of small (41.9%) and medium firms (75%) rely on a computerized inventory system while maximum micro firms (43.1%) use a manual inventory system in the form of stock registers.

Table 4.24 Factor considered in purchasing inventory in SMEs

This table shows the mean rating score of SME owners for factors considered important for purchasing of inventory on 5 point scale where 1 =Not at all important, 2 =Somewhat important, 3 =Moderate important, 4 =High important, and 5 = Extremely important.

	Micro		Small		Medium		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
Price discount	3.3542	2	3.2095	4	2.9000	4	3.2639	3
Seasonal availability	2.8958	5	2.8762	5	2.7000	5	2.8736	5
Credit term offered by suppliers	3.3125	3	3.2571	2	3.2000	3	3.2825	2
Shortage cost	3.1944	4	3.2190	3	3.6000	2	3.2342	4
Storage cost	2.5833	6	2.7524	6	2.5500	6	2.6468	6
Quality of material	3.7778	1	3.9143	1	4.4000	1	3.8773	1

Further, to determine the important factors considered by SMEs for purchase of raw material, the owners of SMEs were provided with a list of factors (Price discount, seasonal availability, credit term offered by suppliers, shortage cost, storage cost, quality of product) and asked to rate them on a 5-point Likert scale (1 means 'not important' and 5 means 'extremely important'). Results for this question (Table 4.24) indicate that the ***'quality of product'*** is the most important factor in the purchasing decision of SMEs with the highest mean rating of 3.8773 followed by ***'credit term offered by suppliers'*** and price discount with a mean rating of 3.2825 and 3.2639, respectively. Quality of material is the most important factor in the purchase decision of micro, small, and medium firms irrespective of their size. On the contrary, it is found that the second most important factor in purchase decision of micro firms is price discount while in the case of small firms it is the credit term offered by suppliers.

4.5.4 Receivable and Payable Management Practices

According to Gentry *et al.*(1979) "*receivables represent delay in the inflow of cash, which must be financed by the firm*". This means that receivables are an opportunity cost to firms in the economic sense. Fabozzi & Peterson (2003) also explained that by allowing customers to purchase goods and services on credit, accounts receivable also known as trade credit is generated. Michalski (2008) defines accounts receivable management as a decision making process to grant trade credit terms to its customers. Shim & Siegel (2000) also described receivable management as a process of selecting customers for credit sales and then speeding up collections from those customers. Thus, in this section, firstly SME owners were asked to rate the factors that motivate them to use account receivable instead of cash sales and how they obtain information for credit appraisal of prospective customers. Secondly, they were also asked to rate the various approaches used to speed up the collection of receivables. Table 4.25 indicates that small businesses usually sell their product on a credit basis as 94.4% SME owners/managers admitted that they grant goods on a credit basis to customers. These findings on credit sales are fairly consistent with the results of Agyei-Mensah (2012) who observed that 80% of the SMEs in Ghana sell their product and services on a credit basis. In addition, it is also found that the proportion of credit sales is higher in SMEs as 74.4% responding firms have a credit sales of >40% of their total sales (Table 4.25).

Table 4.25 Credit sales in SMEs

This table classifies the SMEs as per the percentage of credit sales in their total sales.

	Micro		**Small**		**Medium**		**Overall**	
	Count	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
No credit sale	11	7.6	4	3.8	0	0.0	15	5.6
Between 1% to 20%	17	11.8	2	1.9	0	0.0	19	7.1
Between 20% to 40%	25	17.4	7	6.7	3	15.0	35	13.0
Between 40% to 60%	55	38.2	40	38.1	4	20.0	99	36.8
Between 60% to 80%	25	17.4	34	32.4	9	45.0	68	25.3
More than 80%	11	7.6	18	17.1	4	20.0	33	12.3
Total	**144**	**100**	**105**	**100**	**20**	**100**	**269**	**100**

Next, to identify the motivation for credit sales instead of cash, the respondents were asked to rate the various motivational factors, that is, improved

customer loyalty, increased sales revenue, increased financial reputation and competitive pressure on a 5-point Likert scale (1 means 'not at all important' and 5 means 'extremely important'). Table 4.26 shows that SMEs mainly consider credit sales because it increases the sales revenues (mean rating = 3.5472) of the firms.

Table 4.26 Factor considered in using credit sales in SMEs

This table shows the mean rating score of SME owners for factors considered important for credit sales on 5 point scale where 1 =Not at all important, 2 =Somewhat important, 3 =Moderate important, 4 =High important, and 5 = Extremely important.

	Micro		Small		Medium		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
Improved customer loyalty	2.3759	3	2.7723	3	3.1000	2	2.5906	3
Increased sales revenue	3.4286	1	3.6535	1	3.8000	1	3.5472	1
Increased financial reputation	2.2030	4	2.4356	4	2.3000	4	2.3031	4
Competitive pressure	3.0977	2	3.0198	2	3.0000	3	3.0591	2

The second-, third-, and fourth most important motivations for credit sales are competitive pressure, financial, improved customer loyalty and increased financial reputation with a mean rating of 3.0591, 2.5906 and 2.3031, respectively (Table 4.26). Sometimes, SMEs have to extend credit because of trends in a particular industry. When competitors of a firm are selling a similar product on credit basis, it can also create pressure on firms to grant goods on credit to sustain competition and remain in the market (Chandra, 2015).

Further, to determine the effectiveness of credit appraisal in SMEs and their approach used for credit appraisal, the respondents were asked to (1) state the level of bad debt in their firms and (2) rate the source for obtaining information about the creditworthiness of their customers. They were asked to rate the sources, that is, a customer's past records from other businesses, the customer's past financial dealing with the company, the customer's bank reference and credit rating of the firm on a 5-point Likert scale (1 means 'not at all important' and 5 means 'extremely important'). Table 4.27 indicates that 27.2% of the SMEs have a bad debt from 1% to 3% and that 12.6% of the SMEs have a bad debt of >3% of their total credit sales. On the contrary,

it is found that 60.2% of the SMEs have a bad debt level of <1% of their credit sales, which shows that credit management is efficient in these SMEs.

Table 4.27 Level of bad debt in SMEs

This table classifies the SMEs as per the percentage of bad debt on their total credit sales.

	Micro		Small		Medium		Overall	
	Count	%	Count	%	Count	%	Count	%
Less than 1 %	72	54.1	71	70.3	10	50.0	153	60.2
From 1 % to 3%	40	30.1	22	21.8	7	35.0	69	27.2
From 3 % to 5%	15	11.3	5	5.0	2	10.0	22	8.7
More than 5 %	6	4.5	3	3.0	1	5.0	10	3.9
Total	133	100	101	100	20	100	254	100

These results are in contrast with the argument of Atrill (2006) who advocated that due to limited resources and non-existence of the credit control department, SMEs lack in efficiency of managing receivables. A lower bad debt level in Indian SMEs is mainly due to the conservative approach of Indian owners/managers, which make them more cautious towards granting credit to customers.

Table 4.28 Approach for credit appraisal in SMEs

This table shows the mean rating score of SME owners for credit appraisal approaches adopted by them on a 5 point scale where 1 =Not at all important , 2 =Somewhat important , 3 =Moderately important, 4 =Highly important , and 5 =Extremely important.

	Micro		Small		Medium		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
Customer past record with other business	2.3985	4	3.0000	3	3.4000	4	2.7165	4
Customer past record with the company	3.1203	2	3.3762	2	3.6000	2	3.2598	2
Customer bank reference	1.3759	5	1.7921	5	2.1500	6	1.6024	5
Customer credit rating	1.1805	6	1.3465	6	2.2500	5	1.3307	6
Customer reputation in the market	3.5940	1	3.6040	1	4.0000	1	3.6299	1
Part payment in advance	2.8538	3	2.8812	4	3.7000	2	2.9323	3

Further, to understand how SMEs make the decision of granting credit to customers, SME owners were asked to rate the various approaches of credit appraisal (i.e. the customer past record with other businesses, customer past record with the company, customer bank reference, customer credit rating, customer reputation in the market, part payment in advance) on a 5-point Likert scale (1 means 'not at all important' and 5 means 'extremely important'). Table 4.28 shows that the most important factor in credit granting decisions of Indian SMEs is the ***reputation of customers in the market*** with a mean rating of 3.6299 followed by 'customer past record with the company' with a mean rating of 3.2598. The third most favoured approach for credit investigation in SMEs with a mean rating of 2.9323 is ***collection of part payment in advance from new customers***. Credit appraisal in Indian SMEs is not much formalized as is evident from the low mean rating of 1.6024 and 1.3307 for 'customer bank reference' and 'customer credit rating', respectively.

In addition to this, not much difference is observed between the approach adopted by micro, small and medium firms for credit investigation. Approaches such as ***'customer reputation in the market'*** and ***'customer past record with the company'*** are equally important in micro, small and medium firms as indicated by their mean ratings presented in Table 4.28. Similarly, approaches such as 'customer bank reference' and 'customer credit rating' are considered unimportant in micro, small and medium firms.

Finally, to identify the action taken for timely collection of receivables in SMEs, the respondents were asked to rate various actions, that is, special handling of large remittance, verbal and written request, bank diversification, cash discount, RTGS/NEFT and personal visit as per their applicability in their firm on a 5-point Likert scale (0 means 'not important' and 4 means 'extremely important'). Table 4.29 shows the mean rating given by respondents for each action. The highest mean rating of 3.6732 for ***'verbal or written request'*** indicates that small business owners/managers tactfully remind customers through written and verbal requests to accelerate receivable collections.

The second most important approach to speed up the collection of receivables in SMEs is ***NEFT/RTGS*** with a mean rating of 3.3976. The use of NEFT/RTGS for cash transaction helps in reducing float time in payment and subsequently speeds up receivable collection. The third and fourth most important approaches for speeding up

receivable collection in SMEs are '***special handling of large remittance'*** and ***'personal visit'*** with a mean rating of 3.2953 and 3.1890, respectively. It is also observed from Table 4.29 that SMEs in India do not focus much on giving cash discount for speeding up the collection as evident from a low mean rating of 2.1181. SMEs do not offer much cash discount because it increases the cost and reduces the profit margin of sales. The findings of this study on the use of cash discount is fairly consistent with the results of Kubickova & Soucek (2013) who reported that 76% of the SMEs in the Czech Republic do not offer a cash discount to their customers.

Table 4.29 Methods to speedup receivable collection

This table shows the mean rating score of SME owners for various approaches used by them to speed up receivable collection on a 5 point scale where 1 =Not at all used , 2 =Somewhat used , 3 =Moderately used, 4 =Highly used , and 5 =Extremely used.

	Micro		Small		Medium		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
Special handling of large remittance	3.2632	2	3.1782	4	4.1000	3	3.2953	3
Verbal or written request	3.5338	1	3.7129	1	4.4000	2	3.6732	1
Bank diversification	1.0226	6	1.1683	6	2.4500	6	1.1929	6
Cash discount	2.1504	5	1.9604	5	2.7000	5	2.1181	5
RTGS/NEFT	3.2256	3	3.4158	2	4.4500	1	3.3976	2
Personal visit	3.0376	4	3.2673	3	3.8000	4	3.1890	4

Finally, the respondents were asked to rate four methods used by their firms to delay the payment of accounts payable: (1) centralized payables, (2) payables through drafts or checks, (3) disbursement from a remote geographical location and (4) maximum use of the credit limit. This question used a 5-point scale, where 0 = not at all used, 1 = somewhat used, 2 = moderately used, 3 = highly used and 4 =extremely used. Table 4.30 indicates that Indian firms primarily rely on the ***maximum use of credit limit*** (mean = 3.8104) and ***centralized payments*** (mean= 3.3234) to delay the payment of accounts payable.

Table 4.30 Methods to delay the payments of account payable

This table shows the mean rating score of SME owners for various approaches used by them to delay the payment of account payable on a 5 point scale where 1 =Not at all used , 2 =Somewhat used , 3 =Moderately used, 4 =Highly used , and 5 =Extremely used.

	Micro		Small		Medium		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
Centralized payment	3.1111	3	3.4095	2	4.4000	1	3.3234	2
Pay through cheque	3.1806	2	3.4000	3	3.8000	3	3.3123	3
Disbursement from remote location	1.1042	4	1.0952	4	1.2000	4	1.1078	4
Maximum utilization of credit limit	3.7778	1	3.8095	1	4.0500	2	3.8104	1

4.6 CONCLUSION

This chapter documents the WCM practices of Indian SMEs. By applying a methodology similar to that of Zhao (2011) and Belt & Smith (1991), this chapter looks into the overall working capital policies and practices and focuses on specific components of WCM, that is, cash management, inventory management, accounts receivable management and account payable management. The empirical findings of this chapter indicate that SMEs in India have an informal approach towards WCM and that WCM decisions are mainly the sole responsibility of SME owners. In terms of financing, SMEs follow a moderate approach to maintain a proper trade-off between the firm's liquidity and profitability position. In addition, they mainly depend on internal funding in the form of retained profit and external funding in the form of cash credit limit. In terms of working capital monitoring, these SMEs consider the CCC and NWC as key value metrics. SMEs in India also have a very centralized approach for cash management because it reduces the chances of duplication of efforts in managing cash. Similarly, these firms like to maintain an emergency liquidity reserve to avoid financial distress. This chapter also reveals the effect of those external factors on the cash management decisions of SMEs.

CHAPTER 5
DATA ANALYSIS AND RESULTS -II
(FUNDAMENTAL ANALYSIS OF WORKING CAPITAL MANAGEMENT)

5.1 INTRODUCTION

In the previous chapter, the overall WCM practices of SMEs and practices related to various components of WCM (i.e. cash management, inventory management, receivable management and payable management) were documented. The literature in the field of corporate finance advocated that fundamental factors affect managerial decisions (Zhao, 2011; Belt & Smith, 1991; Graham & Harvey, 2001). Belt & Smith (1991) tested the effect of fundamental factors such as firm size, financial performance on WCM policy practices of large firms. The findings of this study indicate that these fundamental factors play an important role in determining the policy and practices of corporate firms. Similarly, Graham & Harvey (2001) extended the evidence on fundamental factors that affect corporate finance practice. They incorporated a set of fundamental factors not only related to a firm's characteristics but also related to the characteristics of decision makers. In the field of WCM, Zhao (2011) also followed an approach similar to that of Graham & Harvey (2001) and Belt & Smith (1991) and investigated whether firm characteristics (size of the firm, credit rating, export orientation, financial performance of the firm) and managers' characteristics affect decision making related to the management of working capital in large Australian firms.

In line with the findings in the literature, in this study, we also adopted the framework of Zhao (2011) related to the effect of fundamental factors on practices related to the management of working capital. More specifically, this research incorporates five firm specific factors (i.e. size of the firm, age of the firm, foreign sales, financial leverage and profitability) and four owner specific factors (gender of owner, age of owner, education of owner and experience of owner). Finally, to assess the impact of these fundamental factors, the whole sample was divided into subgroups based on the above factors. The WCM practices of these subgroups were then examined and compared with each other. The results related to the effect of fundamental factors on WCM practices of SMEs are summarized in sections 5.2-5.10.

5.2 SIZE OF THE FIRM

Belt & Smith (1991), Chiou *et al*. (2006), and Zhao, (2011) considered firm size as an important factor for the WCM of a firm. To examine the effect of a firm's size on WCM practices and policy preferences of SMEs, the whole sample of 269 firms was divided into two groups based on their annual sales revenue. Firms with annual sales revenue up to INR 5 crores were categorized as 'small' and firms with annual sales revenue more than INR 5 crores were categorized as 'large' firms. Finally, WCM practices of large and small firms were compared with the help of the chi-square test of association and independent t-test, and the results of this comparison are presented in Tables 5.1-5.9. The results presented in Table 5.1 show that focus on WCM in small firms is relatively lower as compared to that on large firms. It was found that only 13.6% of the large firms do not have an overall policy for WCM, whereas 54.1% of the small firms do not have an overall WCM policy. In addition, the difference between the WCM policy of small and large firms is also found to be statistically significant as shown by chi-square statistics of 52.154 with a significant p-value of .000.

In terms of financing policy, small firms also differ from large firms. Table 5.2 indicates that 54.7% of the small firms have a moderate approach to financing, whereas only 30% of the large firms have a moderate approach to financing. Similarly, it is also found that large firms (24.5%) are more aggressive as compared to small firms (9.4%) in their financing (Table 5.2). Similar to financing policy, Size also affects the financing preference of SMEs for working capital requirements. Table 5.3 shows that large firms have a higher preference for external sources in the form of cash credit and short-term bank loans for working capital financing as compared to small firms. The difference between the mean score of small and large firms for ***cash credit/bank overdraft*** and ***short-term bank loans*** is '-1.296' and '-0.7345', respectively, which is also statistically significant at the .01 significance level (Table 5.3). The lower preference for ***bank financing*** in small firms is due to the procedural issues attached with this kind of financing. Small firms have a relatively limited capability to fulfill collateral requirements for bank loans as compared to large firms. On the contrary, small firms have a higher preference for informal sources including loans from friends and family for working capital financing. The difference between

the rating of small and large firms for '***loan from friends and family'*** is '0.78256', which is statistically significant at the .01 significance level (Table 5.3).

It is also observed from Table 5.4 that size of the firms also affects the key value metrics, as the large firms are more inclined to use new and comprehensive measures of WCM like CCC as compared to the small firms. Table 5.4 demonstrates that 55.9% of the large firms use the CCC, whereas only 34.7% of the small firms use this measure. This difference between small and large firms is also found to be statistically significant at the .01 significance level as the chi-square value is 7.536 with a p-value of 0.006. On the contrary, in small firms, net working capital NWC is the key value metric for WCM monitoring. Table 5.4 shows that 53.3% of the small firms used NWC, whereas only 29% of the large firms used NWC as the key value metric for WCM. This difference between small and large firms is also found to be statistically significant at the 99% significance level as the chi-square value is 10.22 with a p-value of 0.001.

Subsequently, Table 5.5 shows the cash management approach adopted by small and large firms. It is obvious that the centralization of the cash management approach is equally important in small and large firms as 87.4% of the small firms and 85.5% of the large firms adopt the ***centralized cash management approach***. The centralized management of cash is very helpful in managing cash tightly and makes the process of cash management more transparent and controllable due to the involvement of one individual/group for all cash-related activity. On the contrary, a significant difference is observed between small and large firms with respect to bank diversification. It is observed from Table 5.5 that 25.5% of the large firms use bank diversification, whereas only 1.3% of the small firms use this approach. This difference between small and large firms is also statistically significant. Small firms do not prefer to ***diversify bank transaction*** because it is relatively easy to establish a good and healthy relationship with a single bank than with multiple banks. Further, Soenen (1986) and Anvari & Gopal (1983) also concluded that small firms contrary to large firms prefer to limit their cash transaction to one or two banks. Similarly, large firms also use the leading and lagging approach more as compared to small firms. We can see that 31.8% of the large firms and only 14.5% of the small firms use this approach for cash management in their firms.

Finally, it is also evident from Tables 5.7 and 5.8 that size of firms also affects the inventory management of SMEs. Large firms are more inclined to using sophisticated methods like ***SCM*** and ***MRP*** as compared to small firms. Similarly, the use of the ***ERP*** system for inventory management is higher in large firms than in small firms. The difference in the mean rating between small and large firms for MRP, SCM and ERP systems is -.93545, -1.4509 and 1.4262, respectively, which is statistically significant in all the cases at a significance level of .01% (Table 5.8). Similarly, the use of technology for inventory management is higher in large firms than in small firms. It is evident from Table 5.7 that 55.5% of the large firms use a ***computerized inventory control system***, whereas only 17% of the small firms have a computerized inventory control system.

5.3 AGE OF THE FIRM

To examine the effect of a firm's age on WCM practices and policy preference of SMEs, the whole sample of 269 firms was divided into two groups based on age of the firm in years. Firms aged up to 10 years are categorized as 'young' and firms older than 10 years are categorized as 'old' firms. Finally, WCM practices of young and old firms are compared with the help of the chi-square test of association and independent t-test and results of this comparison are presented in Tables 5.1-5.9.The age of a firm affects the practices of SMEs related to working capital financing as old firms are more likely to depend on ***suppliers' credit*** as compared to their younger counterparts. Further, the difference between the mean preference rating of young and old firms for suppliers' credit is found to be -0.511, which is statistically significant at the 0.01% significance level (Table 5.3). These old firms have a relatively longer relationship with suppliers, which help them to get these credits easily. On the contrary, young firms have a relatively higher preference for ***'loan from friends and family'*** for working capital financing as compared to older firms. Table 5.3 shows that the difference between the mean preference rating of young and old firms for ***'loan from friends and family'*** is found to be 0.4496 which is statistically significant at the 0.01% significance level.

In terms of cash management also, these old firms are more likely to make their payment on time so that they do not lose their credibility in the market. Similarly, 14.5% of the older firms rely on bank diversification for cash management

while in the case of young firms this proportion is just 5.2% (Table 4). Further, old firms are more concerned about external factors ***(i.e. level of inflation, bank interest rate and market conditions)*** for cash management as compared to their young counterparts. Table 5.6 shows that the difference between the mean rating of young and old firms for external factors such as level of inflation, bank interest rate and market conditions are -0.653,-0.2556 and -0.26337, respectively. This difference is also statistically significant at the 0.05 significance level in all three cases.

In terms of inventory management, old firms are significantly different from young firms. The focus on inventory management in old firms is relatively higher than in young firms as they use approaches, namely, MRP, ERP system and SCM, more than young firms do. Table 5.8 reveals that the mean difference of rating of young and old firms for MRP, ERP System and SCM is -0.52053, -0.59453 and -0.55829, respectively, which is statistically significant at the .05 significance level. Similarly, 37% of the old SMEs use a ***computerized inventory system*** for deciding the timing and quantity of stock to be replenished while a computerized system in young firms is relatively limited as only 25% of the young SMEs used this approach (Table 5.7).

5.4 FOREIGN SALE

To examine the effect of foreign sales on WCM practices of SMEs, the sample of 269 firms is divided into two groups: (1) firms with foreign sales and (2) firms without foreign sales. Finally, WCM practices of young and old firms are compared with the help of the chi-square test of association and independent t-test and the results of this comparison are presented in Tables 5.1-5.9. Firms with foreign sales tend to focus more on WCM as compared to those without foreign sales. It is also evident from Table 5.1 that 42% of the SMEs without foreign sales do not have an overall policy for WCM while this proportion is only 20.7% in the case of firms with foreign sales. Further, Table 5.2 shows that SMEs with foreign sales (29.3%) rely more on aggressive financing approach as compared to SMEs without foreign sales (11.8%). Foreign sales also affect the financing preference of SME owners (Buatsi, 2002; Abor & Biekpe, 2006). Table 5.3 indicates that firms with foreign sales have a relatively higher preference for ***short-term bank loans*** (mean difference = -0.3369, t-statistics = -2.223, p-value = 0.027) , ***letter of credit*** (mean difference = -1.2092, t-statistics = -

7.782, p-value = 0.000) and ***government-sponsored financing schemes*** (mean difference = -0.9272, t-statistics = -5.256, p-value = 0.000) as is evident from the mean difference between the rating of SMEs with and without foreign sales. It is relatively easy for export-oriented firms to get bank financing because they offer a higher probability of repayment as compared to non exporting firms due to higher productivity and profit (Castagnino & Sangiacomo, 2013).

In addition, Table 5.5 also shows that 11.1% of the firms with foreign sales use the netting approach for cash management while the application of netting in firms without foreign sales is negligible (0.5%). This is a rational result, because only export-oriented firms with international trading can benefit from netting (Zhao, 2011). Further, factors such as currency exchange rate and level of inflation have a relatively higher impact on cash management of firms with foreign sales than firms without this. Export-oriented firms focus more on currency exchange rate because chance in exchange rate also affects the price of exported goods and subsequently cash flows. In terms of inventory management also, firms with foreign sale are more formalized and use sophisticated techniques more than firms without foreign sale do. Table 5.7 shows that for stock monitoring and replenishment, the majority (53.4%) of firms with foreign sale use a ***computerized inventory control system*** whiles only 27% of the firms without foreign sale do not use one. Similarly, it is also evident from the mean difference presented in Table 5.8 that firms with foreign sale rely more on sales forecasting (mean difference = -0.32971, t-statistics = -2.312, p-value = 0.022) and SCM (mean difference =-0.57902, t-statistics = -3.252, p-value = 0.001) for proper management of inventory as compared to firms without foreign sale.

5.5 FINANCIAL LEVERAGE

To examine the effect of financial leverage on WCM practices of SMEs, the sample of 269 firms was divided into two groups based on debt as a percentage of total assets. Firms with a debt of upto 25% of total assets are categorized as ‘low levered’ and firms with a debt of more than 25% of total assets are categorized as ‘high levered’ firms. Finally, WCM practices of low levered and high levered firms are compared with the help of the chi-square test of association and independent t- test and the results of this comparison are presented in Tables 5.1-5.9. It can be observed from

Tables 5.1 and 5.3 that Level of financial leverage does not have a very significant effect of overall WCM policy and key value metrics of WCM in SMEs.

In the case of working capital financing also, no significant difference is found between high and low levered firms except that high levered firms have a higher preference for ***cash credit/bank overdraft*** (mean difference = -0.4317, t-statistics = -2.312, p-value = .010) and government-sponsored schemes (mean difference = -0.4504, t-statistics = -2.759, p-value = 0.006) for working capital financing as compared to low levered firms (Table 5.3). High levered firms also attach high importance to external factors such as ***level of inflation*** (mean difference = -0.66225, t-statistics = -4.184, p-value = 0.000.) and ***interest rate*** (mean difference = -0.8457, t-statistics= -7.801, p-value=.000.) as compared to low levered firms (Table 5.6). Finally, no significant difference is found between low and high levered firms with respect to inventory management and cash management approach (Tables 5.5 and 5.8).

5.6 FIRM PERFORMANCE

To determine the effect of firm financial performance on WCM practices of SMEs, the complete sample was subdivided into two groups based on average profit. Firms with increasing average profit for the past 3 years were grouped as 'good performing' and firms with decreasing average profit were grouped as 'poor performing' firms. Subsequently, the WCM practices of good and poor performing firms are compared with the help of the chi-square test of association and independent t-test and the results of these comparisons are presented in Tables 5.1-5.9. Tables 5.2 and 5.3 indicate that financial performance does not affect working capital financing much, as we do not find any significant difference between the practices of good and poor performing firms related to their overall financing policy and their preference for various working capital financing sources. However, it is found that good performing firms rely more on CCC and NWC to monitor and manage working capital. Table 5.4 shows that 52% of the good performing firms rely on CCC, whereas only 37.5% of the poor performing firms consider the CCC as a key value metric in WCM. Similarly, 45% of the good performing firms consider NWC as the key value metric as compared to 29% of the poor performing firms (Table 5.4).

In terms of the cash management approach, no significant difference is observed between poor and good performing firms except for the ***leading and lagging approach***. It is found that 24% of the good performing firms in comparison to 8% of the poor performing firms use the leading and lagging approach for managing cash flows (Table 5.5). The leading and lagging help firms to accelerate cash inflows and delay flow, which ultimately reduces the financing working capital requirements and increases profit. Good performing firms also pay more attention to inventory management than do poor performing firms. ***MRP*** and ***sales forecasting*** is considered more important for inventory management in good performing firms than in poor performing firms (Table 5.8). This is also evident from the statistically significant mean difference between the rating of good and poor performing firms for MRP (mean difference = 0.68451, t-statistics = 4.829, p-value = 0.000.) and sales forecasting (mean difference = 0.55330, t-statistics = 4.641, p-value = 0.000). By sales forecasting, firms have a better idea of future demand, which helps firms in reducing excess funds tied up in inventory and subsequently increase profit.

5.7 GENDER OF OWNER

Many researchers have explored the effect of gender of ownership and concluded that female owned firms are different from male owned firms in several characteristics (Fasci & Valdez, 1998; Loscocco *et al.*, 1991; Loscocco & Robinson, 1991). More specifically, Zhao (2011) explored the effect of gender of Australian corporate treasurers on WCM practices. Following the line of argument of Zhao (2011), this study compared the WCM practices of male owned firms with those of female owned firms and the results are presented in Tables 5.1-5.0. In India, the business scenario is male dominated; thus, there are only 8.9% female participants in this study. Table 5.2 shows that in terms of financing male owners are more aggressive than female owners. This is because18.3% of the male owned firms have an aggressive financing policy, whereas only 4.3% of the female owned firms have an aggressive financing policy. On the contrary, female owned firms (62.5%) rely more on moderate financing than do male owned firms (42.9%). Surprisingly, the preference of male and female owners for different sources of working capital financing does not differ significantly except for ***'loan from family and friends'***. Female owners (mean value = 3.1667) have a higher preference for 'loan from family and friends' for working

capital financing than male owners do (mean value = 2.5633) and this difference between the rating is also found to be statistically significant at 0.01 significance level (Table 5.3).

In the case of using key value metrics for WCM, male and female owners have an almost similar preference as indicated in Table 5.4. Similarly, in the cash management approach, males and females have a similarity except that males prefer to meet their payment on time while females are found to be delaying payments (Table 5.5). In addition, male owners have a higher focus on inventory models and ERP system for managing inventory as compared to their female counterparts. The differences between the rating of male and female owners are also statistically significant in the case of '***inventory models'*** (mean difference = 0.31344, t-statistic = 4.396, p-value = 0.000) and ***'ERP system'*** (mean difference= 0.53418, t-statistic= 2.321, p-value = 0.026) (Table 5.8).

5.8 AGE OF OWNER

To determine whether the WCM practices adopted by SMEs are affected by the age of the firm's owners, the whole sample was divided into young and old based on the age of respondents. SME owners up to 40 years of age are categorized as 'young' and SME owners more than of 40 years are categorized as 'old'. Subsequently, the practices adopted by young and old SME owners are compared with the help of the chi-square test of association and independent t-test and results of these comparisons are presented in Tables 5.1-5.9. When it comes to overall WCM policy, old SME owners are more concerned about WCM as it is found that 47% of the young owners do not have an overall WCM policy for their firms. However, for 30% of the old owners this percentage is relatively lower (Table 5.1).

Similarly, old and young firms also differ in terms of their financing policy. Table 5.2 shows that 19.4% of the old owners adopt an aggressive financing policy while only 10.5% of the young owners have an aggressive financing policy. Further, in terms of financing preference for working capital, old firms rely more on external financing in the form of short-term bank loans and cash credit/bank overdraft. Table 5.3 shows that the mean difference between the preference of young and old SME owners for short-term bank loans (mean difference = -0.4247, t-statistic = -2.744, p-value = .007) and cash credit (mean difference = -.4411, t-statistic = -3.653, p-value =

.000) is statistically significant. It is also observed from Table 5.6 that old SME owners attach a higher importance to external factors, namely, ***currency exchange rate*** (mean difference = -0.28568, t-statistic = -2.086, p-value = 0.038), ***level of inflation*** (mean difference = -0.72598, t-statistic = -5.631, p-value = 0.000) and ***bank interest rate*** (mean difference= -0.27482, t-statistic= -2.484, p-value= 0.014).

Finally, in terms of using a particular inventory management approach, a significant difference is observed between the practices of young and old SME owners. Older SME owners give greater importance to ***MRP*** (mean difference = -0.47917, t-statistic = -3.424, p-value = 0.001) ***SCM*** (mean difference = -0.61551, t-statistic = -4.331, p-value = 0.000) and ***ERP*** (mean difference = -0.69593, t-statistic = -3.905, p-value = 0.000) than do their younger counterparts for inventory management.

5.9 EDUCATION OF OWNER

The level of education of managers is vital for effective management of working capital Afrifa (2013). Afrifa (2013) also advocated that highly qualified managers are able to manage all aspects of WCM than are managers with a lower educational qualification. In line with previous research findings this study also determines the effect of educational qualification on WCM practices of SMEs in India. For this purpose, the respondents are subdivided into two groups based on their educational qualifications. SME owners with education up to senior secondary or diploma are categorized as lower educated, whereas SME owners with graduation and above are categorized as higher educated. Finally, the practices adopted by lower educated and higher educated SME owners are compared with the help of the chi-square test of association and independent t-test and the results of these comparisons are presented in Tables 5.1-5.9.

Table 5.2 shows that 42.9% of the higher educated owners adopt conservative financing policy, whereas only 23.3% of the lower educated owners have a conservative financing policy. Higher educated owners are better able to understand the risk associated with aggressive financing. This is why they prefer conservative financing policy. In terms of financing preference, not much difference is observed in the preference of lower and higher educated owners except in the case of ***government-sponsored scheme***. Higher educated owners have a better understanding

and knowledge of various government schemes for financing and thus have a higher preference than do lower educated owners (Table 5.3). Similarly, 50% of higher educated owners consider the CCC as a key value metric in WCM in comparison to 28.96% of lower educated owners (Table 5.4). On the contrary, lower educated owners (50%) rely more on NWC for WCM as indicated in Table 5.4.

5.10 EXPERIENCE OF OWNER

The years of work experience of managers affect WCM practices of SMEs. Afrifa (2013) found that managers with years of work experience are well able to manage all aspects of WCM practices. To determine how length of work experience of owner affects WCM practices in Indian SMEs, we have categorized respondents into two groups based on length of professional experience in years. SME owners with a total working experience up to 10 years are categorized as low experienced and owners with more than 10 years of experience are categorized as high experienced.

It was found that focus on WCM increases with the increase in the length of experience of the owner. Higher experience owners are more concerned with overall WCM policy as 72.5% of them have WCM policy (either formal or informal), whereas only 50% owners with low experience have WCM policy for their firm (either formal or informal) (Table 5.1). Similarly, experience of owner also has an impact on financing policy of SMEs. Table 5.2 shows that 21.5% of high experience owners have an aggressive financing policy while only 8.3% of the low experience owners have the same policy. In terms of using the cash management approach, not much difference is observed between the preference of low and high experience owners with the exception in ***bank diversification*** (Table 5.5). Table 5.5 shows that for managing cash 16.1% of the high experience owners prefer bank diversification, whereas only 5% of the low experience owners have a preference for bank diversification.

In addition, high experience owners also realized the importance of application of technology in inventory management. It is found that the majority of high experience owners use a ***computerized inventory control system***. On the contrary, low experience owners rely more on manual inventory control by maintaining stock registers (Table 5.7). Higher experience owners also pay more attention to inventory management techniques such as ***MRP*** (mean difference = -

0.52539, t-statistic = -3.868, p-value = 0.000), ***SCM*** (mean difference = -.64821, t-statistic = -4.586, p-value = 0.000) and ***sales forecasting*** (mean difference = -.31594, t-statistic = -2.687, p-value = 0.008) than do lower experience owners (Table 5.8).

5.11 CONCLUSION

This chapter investigates the firm-specific and owner-specific factors that affect WCM in Indian SMEs by following methodology similar to that of Zhao (2011). It examines the effects of firm size, firm age, level of financial leverage, firm performance and foreign sales, gender of owner, age of owner, education of owner and experience of owners on WCM practices of Indian SMEs. The findings of this chapter make it conclusive that these fundamental factors have a bearing on overall WCM practices and related to its components. It is noted that firm-specific factors have a greater impact on WCM practices, especially firm size. On the contrary, the effects of owner-specific factors on WCM practices are moderate. These factors primarily affect the working capital financing of SMEs.

Table 5.1 Effect of fundamental factors on overall WCM policy of SMEs

This table compares the overall WCM policy of Indian SMEs on the basis fundamental factors. The columns represent the proportion of respondents choosing a particular WCM policy.

Fundamental Characteristics		Formal	Informal	No policy
Size of Firm	Small	1.9%	44.0%	54.1%
	Large	14.5%	71.8%	13.6%
	χ^2 statistics		52.154***	
	p-value		.000	
Age of Firm	Young	9.4%	46.9%	43.8%
	Old	5.8%	60.1%	34.1%
	χ^2 statistics		4.614	
	p-value		.100	
Foreign Sale	No	6.2%	51.7%	42.2%
	Yes	10.3%	69.0%	20.7%
	χ^2 statistics		9.184**	
	p-value		.010	
Financial Leverage	Low	7.0%	54.5%	38.5%
	High	7.3%	57.3%	35.4%
	χ^2 statistics		.239	
	p-value		.888	

Table 5.1 Effect of fundamental factors on overall WCM policy of SMEs (Continue)

Fundamental Characteristics		Formal	Informal	No policy
Financial Performance	Increased	7.5%	58.0%	34.5%
	Decreased	6.3%	50.5%	43.2%
	χ^2 statistics		1.975	
	p-value		.372	
Gender of Owner	Male	6.9%	54.7%	38.4%
	Female	8.3%	62.5%	29.2%
	χ^2 statistics		.793	
	p-value		673	
Age of Owner	Young	1.8%	50.9%	47.4%
	Old	11.0%	58.7%	30.3%
	χ^2 statistics		13.705***	
	p-value		.001	
Education of owner	Secondary	14.0%	48.8%	37.2%
	Higher	5.8%	56.6%	37.6%
	χ^2 statistics		3.839	
	p-value		.174	
Experience of Owner	Low	4.2%	45.8%	50.0%
	High	9.4%	63.1%	27.5%
	χ^2 statistics		15.095	
	p-value		.011**	

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 5.2 Effect of fundamental factors on financing policy of SMEs

This table compares the financing policy adopted by of Indian SMEs on the basis fundamental factors. The columns represent the proportion of respondents choosing a particular financing policy.

Fundamental Characteristics		Moderate	Aggressive	Conservative
Size of Firm	Small	54.7%	9.4%	35.8%
	Large	30.0%	24.5%	45.5%
	χ^2 statistics		19.922***	
	p-value		.000	
Age of Firm	Young	46.9%	12.5%	40.6%
	Old	43.4%	17.3%	39.3%
	χ^2 statistics		1.125	
	p-value		570	
Foreign Sale	No	48.3%	11.8%	39.8%
	Yes	31.0%	29.3%	39.7%
	χ^2 statistics		11.940***	
	p-value		.003	
Financial Leverage	Low	43.9%	16.6%	39.6%
	High	46.3%	13.4%	40.2%
	χ^2 statistics		.451	
	p-value		.798	
Financial Performance	Increased	44.8%	18.4%	36.8%
	Decreased	44.6%	15.6%	39.8%
	χ^2 statistics		3.551	
	p-value		.169	

Table 5.2 Effect of fundamental factors on financing policy of SMEs (Continue)

Fundamental Characteristics		Moderate	Aggressive	Conservative
Gender of Owner	Male	42.9%	18.3%	38.8%
	Female	62.5%	4.3%	33.2%
	χ^2 statistics		3.531	
	p-value		.171	
Age of Owner	Young	51.8%	10.5%	37.7%
	Old	39.4%	19.4%	41.3%
	χ^2 statistics		5.754**	
	p-value		.049	
Education of Owner	Secondary	62.8%	14.0%	23.3%
	Higher	41.2%	15.9%	42.9%
	χ^2 statistics		7.395	
	p-value		.025**	
Experience of Owner	Low	50.8%	8.3%	40.8%
	High	39.6%	21.5%	38.9%
	χ^2 statistics		9.296	
	p-value		.010***	

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 5.3 Effect of fundamental factors on working capital financing preference of SMEs

This table compares the rating score of respondents for various working capital financing sources on the basis of fundamental factors. The columns are: 1 = Retained Profit, 2 = Cash Credit/Bank overdraft, 3 = Sort Term Bank Loan, , 4 = Suppliers Credit,5 = Factoring. 6 = Loan from Friends and Family, 7= Loan from Money Lenders, 8 = Government Sponsored Schemes, 9 = Buyers Credit, and 10 = Letter of Credit. The numbers reported in columns 1 to 10 are mean scores obtained from a 5 point scale where 1 =Not at all preferred , 2 = Somewhat preferred , 3 =Moderately preferred , 4 =Highly preferred , and 5 =Extremely preferred.

Fundamental Characteristics		1	2	3	4	5	6	7	8	9	10
Size of Firm	Small	4.2327	2.7673	2.3836	3.6667	1.3836	2.9371	2.3459	1.8742	1.7736	1.6226
	Large	4.1545	4.0636	3.1182	3.6545	1.4909	2.1545	2.2909	3.3545	2.1000	1.9545
	Difference	.0781	-1.296	-.7345	.01212	-.1072	.78256	.05500	-1.480	-.3264	-.3319
	t-statistics	.812	-10.29***	-6.132***	.111	-1.551	6.724***	.426	-11.12***	-3.173***	-2.846***
	D.F.	267	264.54	267	267	213.67	213.23	192.63	186.46	267	267
	p-value	.417	.000	.000	.912	.122	.000	.671	.000	.002	.005
Age of Firm	Young	4.166	3.031	2.708	3.118	1.437	2.906	2.354	2.135	1.770	1.645
	Old	4.219	3.445	2.670	3.630	1.422	2.456	2.306	2.670	1.982	1.820
	Difference	-.0529	-.4138	.03781	-.511	.0155	.4496	.0478	-.5351	-.2118	-.174
	t-statistics	-.506	-2.588**	.288	-2.888***	.225	3.515***	.379	-3.592***	-1.984**	-1.446
	D.F.	165.11	267	267	267	199.86	176.66	267	222.64	267	267
	p-value	.614	.010	.774	.009	.823	.001	.705	.001	.048	.149
Foreign Sale	No	4.1469	3.2701	2.6114	3.6730	1.4171	2.7251	2.3744	2.2796	1.791	1.4976
	Yes	4.3966	3.3966	2.9483	3.6207	1.4655	2.2241	2.1379	3.2069	2.327	2.7069
	Difference	-0.2496	-0.1264	-0.3369	0.0523	-0.0484	0.50098	0.23648	-0.9272	-0.536	-1.2092
	t-statistics	-2.187**	-0.671	-2.223**	0.4	-0.598	4.136***	1.615	-5.256***	-3.60***	-7.782
	D.F.	267	267	267	267	267	121.61	267	267	72.44	69.819
	p-value	0.03	0.503	0.027	0.69	0.55	0	0.107	0	0.001	0

Table 5.3 Effect of fundamental factors on working capital financing preference of SMEs (Continue)

Fundamental Characteristics		1	2	3	4	5	6	7	8	9	10
Financial Leverage	Low	4.1658	3.1658	2.6150	3.6952	1.3957	2.6578	2.3369	2.3422	1.9251	1.7647
	High	4.2805	3.5976	2.8415	3.5854	1.5000	2.5244	2.2927	2.7927	1.8659	1.7439
	Difference	-.1147	-.4317	-.2264	.10982	-.1042	.13336	.04422	-.4504	.05928	.02080
	t-statistics	-1.117	-2.594**	-1.550	.940	-1.445	1.015	.337	-2.759***	.530	.165
	D.F.	267	267	132.06	267	267	267	267	267	267	267
	p-value	.265	.010	.124	.348	.150	.311	.737	.006	.597	.869
Financial Performance	Increased	4.2241	3.2299	2.7126	3.6609	1.3736	2.6839	2.4080	2.4310	1.9023	1.7586
	Decreased	4.1579	3.4211	2.6316	3.6632	1.5263	2.4947	2.1684	2.5684	1.9158	1.7579
	Difference	.06624	-.1911	.08106	-.0022	-.1527	.18917	.23962	-.1373	-.0134	.00073
	t-statistics	.669	-1.181	.616	-.020	-2.210**	1.499	1.906*	-.863	-.125	.006
	D.F.	267	267	267	267	267	267	267	267	267	267
	p-value	.504	.239	.538	.984	.028	.135	.058	.389	.901	.995
Gender of Owner	Male	4.2163	3.2939	2.6980	3.6735	1.4286	2.5633	2.3551	2.5020	1.9143	1.7347
	Female	4.0417	3.3333	2.5417	3.5417	1.4167	3.1667	2.0000	2.2500	1.8333	2.0000
	Difference	.17466	-.03946	.15629	.13180	.01190	-.60340	.35510	.25204	.08095	-.26531
	t-statistics	1.053	-.145	.709	.698	.482	-3.593***	2.068**	1.258	.448	-1.659
	D.F.	267	267	267	267	.102	31.282	30.996	32.903	267	31.758
	p-value	.293	.885	.479	.486	267	.001	.047	.217	.654	.107

Table 5.3 Effect of fundamental factors on working capital financing preference of SMEs (Continue)

Fundamental Characteristics		1	2	3	4	5	6	7	8	9	10
Age of Owner	Young	4.1842	3.0526	2.4298	3.6491	1.3947	2.7632	2.3333	2.1404	1.7456	1.6930
	Old	4.2129	3.4774	2.8710	3.6710	1.4516	2.5097	2.3161	2.7290	2.0258	1.8065
	Difference	-.0286	-.4247	-.4411	-.0218	-.0568	.25348	.01720	-.5886	-.2801	-.1134
	t-statistics	-.299	-2.744***	-3.653***	-.196	-.844	2.085**	.148	-4.075***	-2.901***	-.965
	D.F.	267	267.00	263.66	223.85	267	267	266.36	266.04	263.08	267
	p-value	.765	.007	.000	.844	.399	.038	.882	.000	.004	.335
Education of Owner	Lower	4.1628	3.0233	2.6512	3.4884	1.4186	2.6726	2.5814	2.3850	2.0930	1.8140
	Higher	4.2080	3.3496	2.6903	3.6947	1.4292	2.3256	2.2743	2.9767	1.8717	1.7478
	Difference	-.04517	-.32630	-.03910	-.20632	-.01060	-.34698	.30706	.59179	.22134	.06617
	t-statistics	-.350	-1.548	-.228	-1.409	-.117	-2.614**	1.872*	2.890***	1.582	.417
	D.F.	267	267	267	267	267	75.565	267	267	267	267
	p-value	.727	.123	.820	.160	.907	.011	.062	.004	.115	.677
Experience of Owner	Low	4.1500	3.1750	2.3833	3.6250	1.3917	2.7667	2.2417	2.1583	1.7917	1.7417
	High	4.2416	3.3960	2.7651	3.6913	1.4564	2.4966	2.3893	2.7383	2.0000	1.7718
	Difference	-.0916	-.2209	-.3818	-.0662	-.0647	.27002	-.1476	-.5799	-.2083	-.0301
	t-statistics	-.963	-1.421	-2.882**	-.612	-.966	2.236**	-1.255	-4.015***	-2.127**	-.257
	D.F.	267	267	267	267	267	267	265.22	265.02	250.84	267
	p-value	.336	.156	.021	.541	.335	.026	.211	.000	.034	.797

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 5.4 Effect of fundamental factors on Key value metric in WCM

This table shows the comparison between key value metrics considered by SMEs on the basis of fundamental factors. The columns are: 1 = Return on Investment, 2 = Networking Capital, 3 = Cash Conversion Cycle, 4 = Current Ratio and 5 = Working Capital Turnover. The numbers reported in columns 1 to 5 are the proportion of respondents for corresponding key value metrics

Fundamental Characteristics		**1**	**2**	**3**	**4**	**5**
Size of Firm	Small	4.0%	53.3%	34.7%	10.7%	5.3%
	Large	12.9%	29%	55.9%	11.8%	8.6%
	χ^2 statistics	4.047**	10.22***	7.536***	.056	.669
	p-value	.04	001	.006	.813	.413
Age of Firm	Young	1.8%	40%	47.3%	10.9%	5.5%
	Old	12.4%	39.8%	46.0%	11.5%	8%
	χ^2 statistics	5.04**	.001	.023	.013	.351
	p-value	.024	.982	.878	.909	.553
Foreign Sale	No	4.9%	39.8%	49.6%	13.0%	5.7%
	Yes	20%	40%	37.8%	6.7%	11.1%
	χ^2 statistics	9.265***	.001	1.849	1.321	1.49
	p-value	.002	.985	.174	.250	.227
Financial Leverage	Low	8%	38.1%	46%	11.5%	7.1%
	High	10.9%	43.6%	47.3%	10.9%	7.3%
	χ^2 statistics	.390	.481	.023	.013	.002
	p-value	.530	.488	.878	.909	.964
Financial Performance	Increased	9.9%	45.0%	52.6%	9.9%	8.1%
	Decreased	7%	29.8%	37.2%	14%	5.3%
	χ^2 statistics	.384	3.639**	4.22**	.639	.460
	p-value	.534	.049	.042	.424	.498

Table 5.4 Effect of fundamental factors on Key value metric in WCM (Continue)

Fundamental Characteristics		1	2	3	4	5
Gender of Owner	Small	9.9%	40%	46.7%	10.5%	6.6%
	Large	0%	37%	43.8%	18.5%	12.5%
	χ^2 statistics	1.73	.042	.051	.976	.765
	p-value	.188	.838	.821	.323	.382
Age of Owner	Young	3.3%	42.6%	47.5%	6.6%	6.6%
	Old	12.1%	38.3%	45.8%	14%	7.5%
	χ^2 statistics	3.76*	.300	.048	2.15	.049
	p-value	.051	.584	.827	.142	.84
Education of Owner	Lower	10.7%	50%	28.6%	17.9%	0%
	Higher	8.6%	37.9%	50%	10%	8.6%
	χ^2 statistics	.132	1.435	4.308**	1.436	.258
	p-value	.717	.231	.038	.231	.108
Experience of Owner	Low	1.7%	38.3%	53.3%	6.7%	6.7%
	High	13%	40.7%	42.6%	13.9%	7.4%
	χ^2 statistics	6.053**	.093	1.789	2.001	.032
	p-value	.014	.76	.181	.157	.858

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 5.5 Effect of fundamental factors on Cash management approach of SMEs

This table compares cash management approaches adopted by SMEs based on fundamental factors. The columns represent the following: 1 = Managing Cash through Netting, 2 = Centralization of Cash Management Decisions, 3 = Meet Payment in a Timely Manner, 4 = Diversification of Banks, 5 = Minimize Float, 6 = Emergency Liquidity Reserves and 7 = Management of Cash through Leading and Lagging. The numbers reported in columns 1 to 7 are the proportion of respondents for corresponding cash management approach

Fundamental Characteristics		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Size of Firm	Small	0%	87.4%	19.5%	1.3%	4.4%	34.6%	14.5%
	Large	7.3%	85.5%	30%	25.5%	7.3%	45.5%	31.8%
	χ^2 statistics	11.9***	.217	3.956**	38.41***	1.017	3.224	11.5**
	p-value	.001	.641	.047	.000	.313	.073	.011
Age of Firm	Young	1%	86.7%	17.7%	5.2%	4.2%	40.6%	19.8%
	Old	4%	86.5%	27.2%	14.5%	6.4%	38.2%	22.5%
	χ^2 statistics	1.93	.002	3.047*	5.323**	.563	1.58	.276
	p-value	.650	.955	.081	.021	.453	.690	.599
Foreign Sales	No	.5%	90%	22.9%	10%	3.1%	39.3%	19.4%
	Yes	11.1%	72.4%	29.3%	15.5%	12.8%	37.9%	29.3%
	χ^2 statistics	21.197***	12.868***	1.24	1.422	5.920**	.038	2.625
	p-value	.000	.000	.265	.233	.015	.846	.105
Financial Leverage	Low	2.7%	85.6%	24.6%	9.6%	5.9%	35.3%	18.7%
	High	3.7%	89.0%	22%	14.6%	4.9%	47.6%	28%
	χ^2 statistics	.192	.590	.220	1.443	.109	3.604*	2.935*
	p-value	.662	.433	.639	.230	.741	.058	.087
Financial performance	Increased	4.6%	87.9%	21.3%	10.3%	4%	37.9%	24%
	Decreased	0%	84.2%	28.4%	12.6%	8.4%	41.1%	8%
	χ^2 statistics	4.502**	.734	1.736	.324	2.257	.252	3.88**
	p-value	.034	.392	.188	.569	.133	.616	.046

Table 5.5 Effect of fundamental factors on cash management approach of SMEs (Continue)

Fundamental Characteristics		1	2	3	4	5	6	7
Gender of Owner	Small	2.9%	86.5%	25.3%	11.8%	6.2%	38.4%	22.4%
	Large	4.2%	87.5%	8.3%	4.2%	0%	45.8%	12.5%
	χ^2 statistics	.130	.018	3.473*	1.298	1.55	.512	1.259
	p-value	.719	.894	.062	.255	.212	.474	.258
Age of Owner	Young	2.6%	85.1%	25.4%	6.1%	6.1%	41.2%	19.3%
	Old	3.2%	87.7%	22.6%	14.8%	5.2%	37.4%	23.2%
	χ^2 statistics	.080	.399	.296	5.016**	.120	.400	.599
	p-value	.777	.572	.586	.025	.729	.527	.439
Education of Owner	No	4.7%	74.4%	25.6%	14.0%	18.6%	44.2%	25.6%
	Yes	2.7%	88.9%	23.5%	10.6%	3.8%	38.1%	20.8%
	χ^2 statistics	.499	6.570**	.090	.405	16.50***	.571	.489
	p-value	.480	.010	.764	.524	.000	.460	.484
Experience of Owner	Low	2.5%	87.5%	20.8%	5%	5%	41.7%	19.2%
	High	3.4%	85.9%	26.2%	16.1%	6%	36.9%	23.3%
	χ^2 statistics	.169	.146	1.046	8.276***	.137	.631	.735
	p-value	.689	.703	.306	.004	.721	.427	.391

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively

Table 5.6 Effect of fundamental factors on external factors affecting cash management

This table compares the rating score of SME owners on the basis of fundamental factors to different external factors as per their effects on cash management. The columns represent the following: 1 = Currency Exchange Rate, 2 = Level of Inflation, 3 = Bank Interest Rate, 4 = Financial and Banking Environment, 5 = Market Conditions and 6 = Overall Economic Environment (Gross Domestic Product). The numbers reported in columns 1 to 6 for are mean scores obtained for corresponding external factors from a 5 point scale where 1 =Not at all, 2 =Somewhat, 3 =Moderate, 4 =High, and 5 = Extremely.

Fundamental Characteristics		1	2	3	4	5	6
Size of the Firm	Small	1.8868	2.2264	2.9497	2.9811	3.2767	2.1195
	Large	2.6091	3.0818	3.2455	3.1909	3.4727	2.6091
	Difference	-0.7223	-0.8554	-0.29577	-0.20978	-0.196	-0.48959
	t-statistics	-5.114***	-6.227***	-2.664***	-1.777*	-2.308**	-4.588***
	D.F.	184.584	188.274	267	267	267	201.014
	p-value	0	0	0.008	0.077	0.022	0
Age of the Firm	Young	1.8958	2.1563	2.9063	2.9896	3.1875	2.3021
	Old	2.3410	2.8092	3.1618	3.1098	3.4509	2.3295
	Difference	-0.44521	-0.653	-0.2556	-0.12024	-0.26337	-0.0274
	t-statistics	-3.436***	-5.071***	-2.235**	-0.989	-3.043***	-0.264
	D.F.	247.637	238.84	267	267	267	228.949
	p-value	0.001	0	0.026	0.324	0.003	0.792
Foreign Sale	No	1.7630	2.4265	3.0427	3.0047	3.3081	2.2796
	Yes	3.7069	3.1207	3.1724	3.2931	3.5345	2.4655
	Difference	-1.94386	-0.69415	-0.12976	-0.28836	-0.22643	-0.1859
	t-statistics	-12.548***	-4.278***	-0.967	-2.047**	-2.228**	-1.46
	D.F.	68.988	267	267	267	267	267
	p-value	0	0	0.335	0.042	0.027	0.145

Table 5.6 Effect of fundamental on factor affecting cash management (Continue)

Fundamental Characteristics		1	2	3	4	5	6
Financial Leverage	Low	2.2460	2.3743	2.8128	3.0909	3.3155	2.3316
	High	2.0366	3.0366	3.6585	3.0122	3.4512	2.2927
	Difference	0.2094	-0.66225	-0.8457	0.07871	-0.13571	0.03887
	t-statistics	1.402	-4.184***	-7.801***	0.621	-1.487	0.34
	D.F.	267	126.807	267	267	267	267
	p-value	0.162	0	0	0.535	0.138	0.734
Financial Performance	Increased	2.2816	2.5977	3.0345	3.0460	3.3506	2.2816
	Decreased	2.0000	2.5368	3.1368	3.1053	3.3684	2.3895
	Difference	0.28161	0.06086	-0.10236	-0.05929	-0.01785	-0.10786
	t-statistics	1.964*	0.422	-0.886	-0.486	-0.202	-0.982
	D.F.	267	267	267	267	267	267
	p-value	0.051	0.673	0.376	0.628	0.84	0.327
Gender of Owner	Male	2.2041	2.5837	3.0653	3.0980	3.3796	2.3347
	Female	1.9583	2.5000	3.1250	2.7500	3.1250	2.1667
	Difference	0.24575	0.08367	-0.05969	0.34796	0.25459	0.16803
	t-statistics	1.293	0.346	-0.308	1.708*	2.151*	1.186
	D.F.	31.732	267	267	267	31.233	32.276
	p-value	0.205	0.73	0.759	0.089	0.039	0.244

Table 5.6 Effect of fundamental on factor affecting cash management (Continue)

Fundamental Characteristics		1	2	3	4	5	6
Age of Owner	Young	2.0175	2.1579	2.9123	2.9737	3.2105	2.2544
	Old	2.3032	2.8839	3.1871	3.1355	3.4645	2.3677
	Difference	-0.28568	-0.72598	-0.27482	-0.1618	-0.25399	-0.11336
	t-statistics	-2.086**	-5.631***	-2.484**	-1.374	-3.027***	-1.119
	D.F.	253.313	262.052	267	267	267	266.992
	p-value	0.038	0	0.014	0.17	0.003	0.264
Education of Owner	Lower	2.3256	2.5581	3.0233	2.9070	3.4186	2.4186
	Higher	2.1549	2.5796	3.0796	3.0973	3.3451	2.3009
	Difference	0.17071	-0.02151	-0.05639	-0.19037	0.07347	0.11772
	t-statistics	0.908	-0.114	-0.401	-1.293	0.639	0.822
	D.F.	267	267	63.267	63.688	267	267
	p-value	0.365	0.909	0.69	0.201	0.523	0.412
Experience of Owner	Low	1.9417	2.1333	2.9750	3.0000	3.2250	2.2667
	High	2.3758	2.9329	3.1477	3.1208	3.4631	2.3624
	Difference	-0.43417	-0.79955	-0.17265	-0.12081	-0.23809	-0.09575
	t-statistics	-3.217***	-6.267***	-1.559	-0.996	-2.849***	-0.935
	D.F.	262.643	266.219	267	210.021	267	265.652
	p-value	0.001	0	0.12	0.32	0.005	0.351

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively

Table 5.7 Effect of fundamental factors on inventory replenishment system

This table compares the inventory replenishment system adopted by of Indian SMEs on the basis fundamental factors. The columns represent the following: 1= Ad-hoc Decision, 2=Computerized Inventory System, 3=Cost Balancing Models, 4=Maintenance of Stock Registered. The numbers reported in columns 1 to 4 for are the proportion of respondents choosing corresponding inventory replenishment system.

Fundamental Characteristics		**1**	**2**	**3**	**4**
Size of Firm	Small	37.1%	17.0%	0.0%	45.9%
	Large	13.6%	55.5%	6.4%	24.5%
	χ^2 statistics		60.542***		
	p-value		.000		
Age of Firm	Young	33.3%	25.0%	0.0%	41.7%
	Old	24.3%	37.0%	4.0%	34.7%
	χ^2 statistics		9.250**		
	p-value		.026		
Foreign Sale	No	31.3%	27.0%	1.9%	39.8%
	Yes	13.8%	53.4%	5.2%	27.6%
	χ^2 statistics		18.480***		
	p-value		.000		
Financial Leverage	Low	26.2%	29.4%	2.7%	41.7%
	High	30.5%	40.2%	2.4%	26.8%
	χ^2 statistics		5.833		
	p-value		.120		
Financial Performance	Increased	24.1%	33.9%	2.3%	39.7%
	Decreased	33.7%	30.5%	3.2%	32.6%
	χ^2 statistics		3.240		
	p-value		.356		

Table 5.7 Effect of fundamental factors on inventory replenishment system (Continue)

Fundamental Characteristics		1	2	3	4
Gender of Owner	Male	28.2%	32.7%	2.9%	36.3%
	Female	20.8%	33.3%	0.0%	45.8%
	χ^2 statistics		1.647		
	p-value		.649		
Age of Owner	Young	34.2%	19.3%	0.0%	46.5%
	Old	22.6%	42.6%	4.5%	30.3%
	χ^2 statistics		23.882***		
	p-value		.000		
Education of Owner	Secondary	27.9%	39.5%	2.3%	30.2%
	Higher	27.4%	31.4%	2.7%	38.5%
	χ^2 statistics		1.409		
	p-value		.703		
Experience of Owner	Low	36.7%	22.5%	0.0%	40.8%
	High	20.1%	40.9%	4.7%	34.2%
	χ^2 statistics		19.930***		
	p-value		.000		

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 5.8 Effect of fundamental factors on Inventory management approach

This table compares inventory management approaches adopted SMEs on the basis of fundamental factors. The columns are as follows: 1 = Material Requirement Planning, 2 = Inventory Models, 3 = ERP System, 4 = Just-In-Time, 5 = Supply Chain Management and 6 = Sales Forecasting. The numbers reported in columns 1 to are mean scores obtained from a 5 point scale where 1 =Not at all important , 2 =Somewhat important , 3 =Moderately important, 4 =Highly important , and 5 =Extremely important.

Fundamental Characteristics		**1**	**2**	**3**	**4**	**5**	**6**
Size of Firm	Small	2.6918	1.0440	1.5283	1.1887	1.8491	2.8239
	Large	3.6273	1.7364	2.9545	1.6545	3.3000	3.2545
	Difference	-.93545	-.69234	-1.4262	-.46587	-1.45094	-.43065
	t-statistics	-7.097***	-6.955***	-7.809***	-4.956***	-11.190***	-3.663***
	D.F.	267	113.222	177.581	169.096	190.486	267
	p-value	.000	.000	.000	.000	.000	.000
Age of Firm	Young	2.7396	1.0833	1.7292	1.2917	2.0833	2.8542
	Old	3.2601	1.4624	2.3237	1.4277	2.6416	3.0809
	Difference	-.52053	-.37909	-.59453	-.13608	-.55829	-.22676
	t-statistics	-3.615***	-4.503***	-3.267***	-1.533	-3.884***	-1.846*
	D.F.	267	212.53	232.744	227.7	229.852	267
	p-value	.000	.000	.001	.127	.000	.066
Foreign Sale	No	3.0095	1.3081	1.9716	1.3223	2.3175	2.9289
	Yes	3.3103	1.3966	2.6207	1.5862	2.8966	3.2586
	Difference	-0.30087	-0.08849	-0.64913	-0.26393	-0.57902	-0.32971
	t-statistics	-1.761*	-0.685	-2.874***	-2.156**	-3.252***	-2.312**
	D.F.	267	267	267	78.361	267	267
	p-value	0.079	0.494	0.004	0.034	0.001	0.022

Table 5.8 Effect of fundamental factors on Inventory management approach (Continue)

Fundamental Characteristics		1	2	3	4	5	6
Financial Leverage	Low	3.0588	1.2353	2.1123	1.3476	2.4118	3.0321
	High	3.1098	1.5366	2.1098	1.4512	2.5122	2.9268
	Difference	-.05093	-.30129	.00254	-.10363	-.10043	.10526
	t-statistics	-.332	-2.298**	.012	-.966	-.620	.819
	D.F.	267	116.304	267	126.161	267	267
	p-value	.740	.023	.990	.336	.536	.413
Financial Performance	Increased	3.3161	1.4253	2.2069	1.4080	2.5345	3.1954
	Decreased	2.6316	1.1474	1.9368	1.3263	2.2737	2.6421
	Difference	.68451	.27792	.27005	.08173	.26080	.55330
	t-statistics	4.829***	2.912***	1.374	.870	1.678*	4.641***
	D.F.	267	265.086	267	267	267	267
	p-value	.000	.004	.171	.385	.094	.000
Gender of Owner	Male	3.0898	1.3551	2.1592	1.3714	2.4367	3.0000
	Female	2.9167	1.0417	1.6250	1.4583	2.5000	3.0000
	Difference	.17313	.31344	.53418	-.08690	-.06327	.00000
	t-statistics	.699	4.396***	2.321**	-.551	-.242	.000
	d.f	267	146.025	35.061	267	267	267
	p-value	.485	.000	.026	.582	.751	1

Table 5.8 Effect of fundamental factors on Inventory management approach (Continue)

Fundamental Characteristics		1	2	3	4	5	6
Age of Owner	Young	2.7982	1.0439	2.4065	1.2105	2.0877	2.9561
	Old	3.2774	1.5355	1.7105	1.5032	2.7032	3.0323
	Difference	-.47917	-.49162	-.69593	-.29270	-.61551	-.07612
	t-statistics	-3.424***	-5.490***	-3.905***	-3.280***	-4.331***	-.635
	d.f	267	168.767	266.881	267	263.420	267
	p-value	.001	.000	.000	.001	.000	.526
Education of Owner	Lower	3.0233	1.4884	2.4186	1.3023	2.5581	2.9735
	Higher	3.0841	1.2965	2.0531	1.3938	2.4204	3.1395
	Difference	-.06081	.19191	.36551	-.09148	13779	.16608
	t-statistics	-.316	1.071	1.426	-.746	.677	1.030
	d.f	267	50.764	267	267	267	267
	p-value	.753	2.89	1.55	.456	.499	.364
Experience of Owner	Low	2.7833	1.0667	1.7667	1.2750	2.0833	2.8250
	High	3.3087	1.5369	2.3893	1.4631	2.7315	3.1409
	Difference	-.52539	-.47025	-.62260	-.18809	-.64821	-.31594
	t-statistics	-3.868***	-5.032***	-3.437***	-2.184**	-4.586***	-2.687***
	d.f	266.616	166.611	266.858	258.932	266.948	267
	p-value	.000	.000	.001	.030	.000	.008

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively

Table 5.9 Effect of fundamental factors on credit appraisal approach

This table compares credit appraisal approaches adopted SME owners on the basis of fundamental factors. The columns are as follows: 1 = Customer Past Record with other Business, 2 = Customer Past Record with the Company, 3 = Customer Bank Reference, 4 = Customer Credit Rating, 5 = Customer Reputation in Market and 6 = Part Payment In Advance. The numbers reported in columns 1 to 6 are mean scores obtained from a 5 point scale where 1 =Not at all important , 2 =Somewhat important , 3 =Moderately important, 4 =Highly important , and 5 =Extremely important.

Fundamental Characteristics		**1**	**2**	**3**	**4**	**5**	**6**
Size of Firm	Small	2.4247	3.1438	1.4658	1.1781	3.5753	2.8601
	Large	3.1111	3.4167	1.7870	1.5370	3.7037	3.0278
	Difference	-0.68645	-0.27283	-0.32128	-0.35895	-0.12836	-0.16764
	t-statistics	-5.328***	-2.184**	-2.959***	-3.327***	-1.087	-1.156
	D.F.	248.525	252	252	127.437	252	249
	p-value	0	0.03	0.003	0.001	0.278	0.249
Age of Firm	Young	2.4839	3.1075	1.4839	1.2043	3.6452	2.9457
	Old	2.8509	3.3478	1.6708	1.4037	3.6211	2.9245
	Difference	-0.36706	-0.2403	-0.18694	-0.19943	0.02404	0.02112
	t-statistics	-2.762***	-1.869*	-1.658*	-2.384**	0.198	0.148
	D.F.	227.157	252	252	238.933	252	215.989
	p-value	0.006	0.063	0.099	0.018	0.843	0.883
Foreign Sales	No	2.5505	3.1162	1.5354	1.3384	3.5909	2.9590
	Yes	3.3036	3.7679	1.8393	1.3036	3.7679	2.8393
	Difference	-0.75307	-0.6517	-0.30393	0.03481	-0.17695	0.11969
	t-statistics	-4.73***	-4.504***	-2.332**	0.296	-1.531	0.643
	D.F.	252	252	252	252	125.89	80.65
	p-value	0	0	0.02	0.767	0.128	0.522

Table 5.9 Effect of fundamental factors on credit appraisal approach

Fundamental Characteristics		1	2	3	4	5	6
Financial Leverage	Low	2.7966	3.2203	1.5932	1.3107	3.5706	2.9253
	High	2.5325	3.3506	1.6234	1.3766	3.7662	2.9481
	Difference	0.26414	-0.13031	-0.03016	-0.06589	-0.19561	-0.02276
	t-statistics	1.774*	-0.962	-0.254	-0.54	-1.544	-0.146
	D.F.	252	252	252	108.913	252	249
	p-value	0.077	0.337	0.8	0.59	0.124	0.884
Financial performance	Increased	2.7485	3.2761	1.6933	1.4049	3.7055	3.0438
	Decreased	2.6593	3.2308	1.4396	1.1978	3.4945	2.7363
	Difference	0.08913	0.0453	0.25369	0.20711	0.21102	0.30749
	t-statistics	0.621	0.348	2.25**	2.259**	1.739*	2.071**
	D.F.	252	252	252	238.439	252	249
	p-value	0.535	0.728	0.025	0.025	0.083	0.039
Gender of Owner	Male	2.7759	3.3276	1.5819	1.3405	3.7155	2.9258
	Female	2.0909	2.5455	1.8182	1.2273	2.7273	3.0000
	Difference	0.68495	0.78213	-0.23629	0.11324	0.98824	-0.07424
	t-statistics	2.842***	3.619***	-1.221	0.654	4.978***	-0.292
	D.F.	252	252	252	252	252	249
	p-value	0.005	0	0.223	0.514	0	0.771

Table 5.9 Effect of fundamental factors on credit appraisal approach

Fundamental Characteristics		1	2	3	4	5	6
Age of Owner	Young	2.4312	3.0826	1.4037	1.1101	3.6239	2.8019
	Old	2.9310	3.3931	1.7517	1.4966	3.6345	3.0276
	Difference	-0.49984	-0.31053	-0.34805	-0.38646	-0.01063	-0.2257
	t-statistics	-3.688***	-2.495**	-3.306***	-4.542***	-0.092	-1.602
	D.F.	252	252	249.614	183.192	247.827	245.127
	p-value	0	0.013	0.001	0	0.927	0.11
Education of Owner	Lower	2.7500	3.4250	1.6750	1.7750	3.7750	3.3250
	Higher	2.7103	3.2290	1.5888	1.2477	3.6028	2.8578
	Difference	0.03972	0.19603	0.08621	0.52734	0.1722	0.46718
	t-statistics	0.21	1.148	0.576	2.735***	1.392	2.403**
	D.F.	252	252	252	43.36	74.812	249
	p-value	0.834	0.252	0.565	0.009	0.168	0.017
Experience of Owner	Low	2.4107	3.0446	1.4821	1.1071	3.6518	2.8991
	High	2.9577	3.4296	1.6972	1.5070	3.6127	2.9577
	Difference	-0.54703	-0.38493	-0.21504	-0.3999	0.03911	-0.05866
	t-statistics	-4.071***	-3.139***	-1.97*	-4.64***	0.338	-0.404
	D.F.	252	242.444	252	176.572	249.732	249
	p-value	0	0.002	0.05	0	0.736	0.687

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively

CHAPTER 6
DATA ANALYSIS AND RESULTS –III
(BEHAVIOURAL ASPECTS OF SMEs' OWNERS)

6.1 INTRODUCTION

The previous chapter presented the results related to fundamental factors and their effects on policy and practices of WCM in SMEs. This chapter however focuses on the behavioural aspects of SME owners in managing working capital. As discussed in chapter 2 (literature review), the decision making of financial agents is not fully rational. Behavioural researchers argue that people have a tendency to use heuristics in complex and uncertain decision-making situations and these heuristics force them to exhibit certain biases. Thus, it is very important to undertake research on behavioural biases to better understand the decision-making processes of individuals (KalraSahi & Pratap Arora, 2012). In the field of WCM, Zhao (2011) was the first to incorporate behavioural biases in decision making of corporate treasurers. Based on the arguments of Zhao (2011), this chapter primarily examines the tendency of SME owners to exhibit behavioural biases (i.e. self-attribution bias [Miller & Ross, 1975], overconfidence bias [Frank, 1935], loss aversion bias [Tversky & Kahneman, 1991] and anchoring bias [Tversky & Kahneman, 1974]). Secondly, this chapter examines how age, experience, education and gender affect the propensity of SME owners to exhibit behavioural biases. Thirdly, this chapter assesses the impact of these biases on the decision making of SME owners, as related to WCM. The remainder of this chapter is structured as follows: Section 6.2 presents the results of self-attribution bias followed by results on overconfidence bias, loss aversion bias and the anchoring bias in sections 6.3-6.5, respectively. Finally, the last section of this chapter provides the concluding remarks.

6.2 SELF-ATTRIBUTION BIAS

Self-attribution bias is the tendency to attribute positive outcomes to one's own ability and negative outcomes to outside forces, or "bad luck" (Shefrin, 2007). People exhibit self-attribution bias to maintain high self-esteem and to feel good about themselves. This bias may cause individuals to overlook their own mistakes, which subsequently makes them overconfident. Individuals who are prone to self-attribution are more likely to attribute favourable outcomes to their own capabilities and blame to the

external factors for failures (Miller & Ross, 1975).In line with the argument of Miller & Ross (1975), our questionnaire poses two questions: (1) When your firm is in financial distress, to what extent do you blame your own financial policy and external environment? and (2) In times of good financial performance, to what extent do you think your own financial policy and external environment have contributed? Table 6.1 shows that in times of good performance, SME owners attribute success more often to own financial policy (mean value= 3.8513) than to external environment (mean value= 3.1747). In times of poor performance, however, they blame external environment (mean value= 3.7993) more than own financial policy (mean value= 3.2342). The difference between the rating of external environment in the case of poor and good performances is 0.62454 (3.7993-3.1747) with a t-statistic of 9.272, which is statistically significant at the 0.01 significance level (Table 6.1). Similarly, the difference between the ratings of own financial policy in the case of good and poor performances is -.61710 (3.2342 - 3.8513) with a t-statistics of-7.903, which is statistically significant at the 0.01 significance level (Table 6.1). Thus, this shows that SME owners are generally prone to self-attribution bias. The findings of this study on self-attribution bias are similar to the findings of Zhao (2011) who observed that Australian corporate treasurers are prone to self-attribution bias.

Table 6.1 Rating for own financial policy and external environment

This table shows the mean rating of SMEs owners for own financial policy and external environment in case of good and poor performance on a five point scale

	Own financial policy	External Environment
Blame in case of poor performance	3.2342	3.7993
Attribution of success in case of good performance	3.8513	3.1747
Mean difference	-0.61710	0.62454
t- statistics	-7.903***	9.272***
D.F	268	268
p-value	.000	.000

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively

Table 6.2 Identification of self attribution bias

This table shows the number of SME owners with or without self attribution behavioral bias

		Yes	**No**	**Other**	**Total**
Self attribution bias	Count	122	87	60	269
	%	45.4	32.3	22.3	100.0

Further, to identify individual SME owners with self-attribution bias, the approach mentioned in the research methodology section of chapter 3 was used. Table 6.2 shows that 122 SME owners exhibited self-attribution bias in their decision making and 87 SME owners did not exhibit anchoring bias. However, it was difficult to accurately determine the status of 60 SME owners. For further analysis, these 60 SME owners whose status was not confirmed were excluded. The remaining respondents were then classified into two groups: (1) with self-attribution bias and (2) without self-attribution bias. Then to identify the effect of self-attribution bias on WCM, the practices adopted by SME owners with or without self-attribution biases were compared and the results are presented in Tables 6.19-6.27. It is seen from Table 6.21 that the financing preference of SME owners with and without self-attribution bias significantly differs. Further, the mean difference (0.33927) between the preference of biased and unbiased SME owners for retained earnings is statistically significant at the .01 significance level ($p<.01$).Thus, we can conclude that biased SME owners have a higher preference for internal funds in the form of retained earnings for working capital financing than do unbiased SME owners. On the contrary, unbiased SME owners rely more on external financing in the form of short-term bank loans and buyer's credits indicated by the significant mean difference in the preference of biased and unbiased owners. Table 6.24 indicates that SME owners with self-attribution bias pay more attention than do those without this bias to such factors as market conditions, level of inflation, bank interest rate. Similarly, biased SME owners also rely more on material requirement planning (mean difference=.48549, t-statistic=2.882, p-value=.004) and sales forecasting (mean difference=.44300, t-statistic=3.229, p-value=.001) and ERP system (mean difference=.77426, t-statistic=3.727, p-value=.000) for inventory management compared to those without self-attribution bias (Table6.26).Finally, when using key value metrics for WCM and cash management approach, self-attribution bias does not have much effect.

6.2.1 Effect of Demographic Variables on Self-Attribution Bias

To assess the effect of demographic variables on self-attribution bias, a binary logistic regression was used, because instead of continuous independent variables, this study includes categorical independent variables. Similar to independent variables, the dependent variable in this study is also a dichotomous categorical variable (Field, 2009; Sreejesh *et al*., 2014). The binary logistic regression model is used to model the

relationship between the tendency to exhibit behavioural biases and demographic characteristics of SME owners (i.e. age, gender, education and experience of SME owners). In this research, the probability of a respondent being prone to self-attribution bias is calculated. However, due to the problem of limited value of probability, these probabilities cannot be used directly in regression models; instead, the odd [P (1-P)] is used. Further, the natural log of the odds is calculated so that the relationships can be linearized and treated as in multiple linear regressions. Finally, the logistic model used can be expressed as follows:

$$Log\ (P/1-P)\ SEB = B_0 + B_1\ (AGE_2) + B_2\ (AGE_3) + B_3\ (AGE_4) + B_4\ (GEN) + B_5\ (EDU) + B_6\ (EXP_2) + B_7\ (EXP_3) + e_i \quad \ldots\ldots\ldots\ldots\ldots (6.1)$$

where SEB is the self-attribution bias; P is the probability of a respondent with self-attribution bias;AGE_2 = 1 if a respondent is in the age group of 30-40 years, 0 otherwise; AGE_3= 1 if a respondent is in the age group of 40-50 years, 0 otherwise; AGE_4= 1 if a respondent is in the age group of >50 years, 0 otherwise; GEN= 1 if the respondent is male, 0 otherwise; EDU =1 if the respondent has education up to the secondary level or diploma,0 otherwise;, EXP_2 = 1 if a respondent is in the experience category of 10-20 years, 0 otherwise; EXP_3 =$_1$ if a respondent is in the experience category of >20 years, 0 otherwise.

Based on the above model, logistic regression is applied to assess the effect of demographic variables on the tendency to exhibit self-attribution bias and the results are presented in Table 6.3.The coefficients of each subcategory represent the effect of each subcategory with respect to a reference category. The reference category for age, gender, education and experience is ‘less than 30 years’, ‘female’ ‘higher education’, ‘less than 10 years’, respectively. A negative coefficient for any category indicates that compared with respondents in the reference category, respondents in that particular category is associated with a decreased odds ratio of being prone to self-attribution bias. Results of logistic regression for self-attribution bias, presented in Table 6.3, show that the level of self-attribution bias varies among the demographic characteristics. First to determine the model’s fitness, the Hosmer-Lemeshow (H-L) test is a widely used measure for determining how well the logistic model fits the data (Peng *et al*., 2002). The use of the H-L test yielded a chi-square statistic of 6.821, which was insignificant (p>.05). This indicates that the model was well fitted. Table

6.4also reveals that the current model including coefficients (i.e. age, gender, education and experience) is able to correctly classify 77.9% cases, which also confirms the overall goodness of fit.

According to the results presented in Table 6.3, gender, age and experience of SME owners significantly affect the odds of being prone to self attribution bias. In the case of gender, the coefficient is positive (1.609) and statistically significant at the 0.01 significance level (p<.01).This indicates that males are more likely to be prone to self-attribution bias as compared to females (reference category). The value of the expected β also confirms that the odds of being prone to self-attribution bias in the case of males are 4.999 times higher than the odds for a female. These results are consistent with the findings of Rosenthal *et al.* (1996) who reported that women managers less strongly attribute their success to ability than do men. Similarly, Deaux (1979) concluded that males attribute success more to their ability compared to females. Similarly, the Wald statistics for age (13.334) and experience (6.239) are significant at the .01 (p<.01) and .05 (p<.05) significance levels, respectively (Table 6.3). This denotes that the odds of being prone to self-attribution bias are significantly affected by the age and experience of SME owners. The positive coefficient for subcategories of age (i.e. '40-50 years') is statistically significant. This indicates that the odds of respondents to be prone to self-attribution bias in this category is 3.255 times higher than that of the respondents in the age category of <30.Thus, we can conclude that elderly SME owners are more prone to self-attribution bias as compared to young SME owners (Crawford & Stankov, 1996).

Similar to age, highly experienced SME owners are found to be more prone to self-attribution bias. The coefficient of experience category 'more than 20 years' is positive and statistically significant, which shows that the odds of SME owners with >20 years of experience is 6.278 times higher than the odds of SME owners with <10 years of experience. This finding is also consistent with the findings of Mishra & Metilda (2015) for stock investors. Finally, the effect of education of SME owners' tendency to exhibit self-attribution bias is found to be insignificant as the value of the Wald statistic is 0.584, which is not significant at the .05 significance level (Table 6.3).

Table 6.3 Results of logistic regression model for self attribution Bias

This table shows the results of logistic regression Model 6.1 for self-attribution bias. The reference categories are: Female (Gender), Less than 30 Years (Age), Higher education (Education), Less than 10 Years (Experience)

Variables	B	S.E.	Wald	D.F	Sig.	Exp(β)
Constant	-2.439	.816	8.924	1	.003	.087
GEN	1.609	.688	5.474	1	.019	4.999
AGE			13.334	3	.004	
AGE_2	-.525	.576	.831	1	.362	.591
AGE_3	1.180	.618	3.647	1	.049	3.255
AGE_4	1.086	.855	1.611	1	.204	2.962
EDU	.353	.474	.554	1	.457	1.423
EXP			6.239	2	.044	
EXP_2	.865	.455	3.619	1	.054	2.376
EXP_3	1.837	.777	5.588	1	.018	6.278

Model Summary	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
	209.366	.295	.397

Hosmer and Lemeshow Test	Chi-square	df	Sig.
	6.821	7	.448

Table 6.4 Classification table for regression model for self attribution bias

This table show the correctly classified cases based on logistic regression model 6.1

Observed		Predicted		
		Self attribution bias		
		No	Yes	Percentage correct
Self attribution bias	No	62	24	72.1
	Yes	22	100	82.0
Overall correct percentage				77.9

6.3 OVERCONFIDENCE BIAS

Overconfidence bias has been the centre of research in human judgement and corporate decision making (Hardman, 2009). The existing literature on behavioural finance makes it conclusive that the majority of people are overconfident about their own capabilities (Frank, 1935; Taylor & Brown, 1988). An overconfident person usually overestimates his/her ability and ignores the actual risk involved in any

decision (Kahneman & Riepe, 1998). Frank (1935) observed a tendency among people to overestimate their own capabilities. In line with the argument of Frank (1935), we designed questions to capture this tendency by asking SME owners to rate their confidence in cash management in two situations: (1) when their firm's financial performance is good and (2) when their firm's financial performance is poor. We used a five-point scale, where 1 = not at all confident, 2 = somewhat confident, 3 = moderately confident, 4 = highly confident and 5 = extremely confident. Figure 6.1 shows that in times of strong performance, the mean value for confidence in cash management is 4.2639, whereas in the case of poor performance also, the mean value for confidence is 3.6506, which is higher than the average rating of 3 (moderately confident). To test whether the mean confidence rating in the case of good and poor performances is significantly higher than the average rating of 3, one sample t-test was applied. Table 6.5 shows that the mean rating of confidence in times of good and poor performances is significantly higher that the test value of 3 in both situations. For both good and poor performances, the t-statistics are 25.708 and 12.136, respectively, with a statistically significant p-value at a significance level of .01 in both cases. Thus, we can conclude that overall the SME owners are overconfident. This evidence is consistent with that of Ramiah *et al.* (2014) who found that corporate treasurers are overconfident.

Figure 6.1 Level of confidence in case of strong and poor performance

This figure shows the confidence rating of SME owners in the case of poor and strong performance.

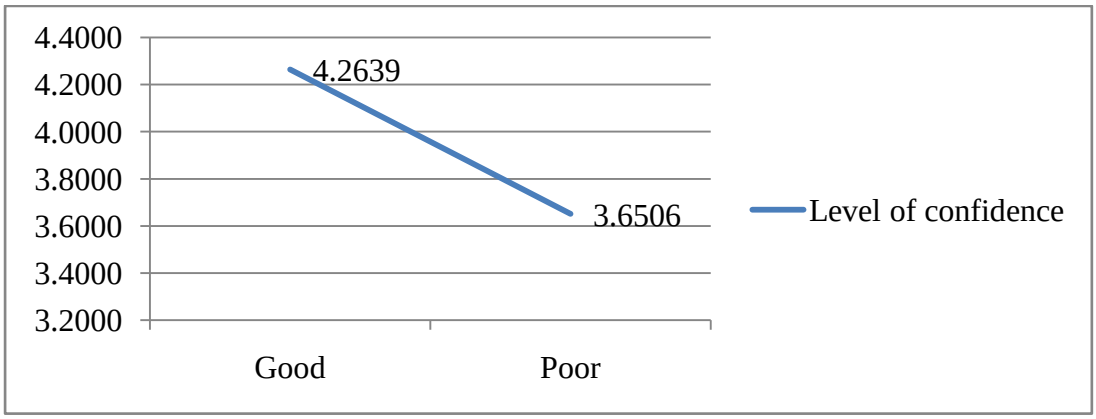


Table 6.5 Results of one sample t test for overconfidence bias

This table shows the results of one sample t-test for the comparison of mean rating for confidence in case of poor and good performance with test value of 3.

	Test Value = 3					
			Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
	t	D.F.			Lower	Upper
Confidence in cash management in case of poor performance	12.136	268	.000	.65056	.5450	.7561
Confidence in cash management in case of good performance	25.708	268	.000	1.26394	1.1671	1.3607

Further, to identify individual SME owners with overconfidence bias, a methodology similar to that of Zhao (2011) was used. We identify overconfidence bias on the combination of responses to the above two questions. If the respondents give a rating of 4 or 5 for both questions, we consider them to be prone to overconfidence bias. Otherwise, we consider them not to be prone to overconfidence bias. We classify respondents with a 1, 2 or 3 on one question and a 4 or 5 on the other question as "other". It was found that 168 (62.5%) SME owners exhibit this bias in their decision making, whereas 61 (22.7%) do not. We place the remaining 40 (14.9%) SME owners in the "other" category because they provide a rating of 4 or 5 in the case of good performance and a rating of 1, 2 or 3 in the case of poor performance to cash management (Table 6.6). These 40 SME owners were excluded from further analysis.

Table 6.6 Identification of overconfidence bias

This table shows the number of SME owners with or without overconfidence behavioral bias

		Yes	No	Other	Total
Overconfidence Bias	Count	168	61	40	269
	%	62.5	22.7	14.9	100.0

Then to identify the effect of overconfidence bias on WCM, the practices adopted by SME owners with or without overconfidence bias were compared and the results are presented in Tables 6.19-6.27.Overconfidence bias affects the overall WCM policy of SMEs. Table 6.20 shows that overconfident SME owners are more

aggressive as 20.5% overconfident SME owners follow aggressive financing policy, whereas only 9.8% owners without overconfident bias adopt aggressive policy. The difference between the financing policy of SME owners with or without overconfidence bias is found to be significant at the .05 significance level (chi-square statistic =4.467, p=0.045). In addition to overall financing policy, overconfidence bias also affects the working capital financing preference of SME owners. Overconfident SME owners have a higher preference for external financing in the form of bank loans (mean value =2.7143) and supplier's credit (mean value= 3.7500). The difference between the mean rating of biased and unbiased SME owners for short-term bank loans (mean difference=0.5766, t-statistics=3.134, p-value= 0.004) and supplier's credit (mean difference=0.4926, t-statistics=2.935, p-value= 0.015) is statistically significant at the .05 significance level (Table 6.21).

In terms of using cash management, overconfident SME owners pay less attention to maintain emergency liquidity reserve as is evident from Table 4.23 that only 31.3 % biased SME owners use this approach as compared to 47.3%SME owners without overconfident bias. Lastly, Table 6.26 shows that overconfident owners attach less importance to material requirement planning (MRP) than SME owners without overconfidence bias.

6.3.1 Effect of Demographic Variables on Overconfidence Bias

To assess the effect of demographic variables on overconfidence bias, a similar logistic model as explained in the previous section is used. The logistic model used can be expressed as follows:

$$Log\ (P/1-P)\ OB = B_0 + B_1\ (AGE_2) + B_2\ (AGE_3) + B_3\ (AGE_4) + B_4\ (GEN) + B_5\ (EDU) + B_6\ (EXP_2) + B_7\ (EXP_3) + e_i \qquad \textit{(Model 6.2)}$$

where OB is the overconfidence bias; P is the probability of a respondent with overconfidence bias. All other independent variables are the same as in Model-1 explained in the previous section.

The results of the logistic regression model for overconfidence bias are presented in Tables 6.7 and 6.8. The use of the H-L test yielded a chi-square statistic of 1.401 and was insignificant (p>.05), which indicates that the model was well fitted (Table 6.7). In addition, Table 6.8 reveals that the current model including

coefficients (i.e. Age, Gender, Education and Experience) is able to correctly classify 78.2.9% of the cases, which also confirms the overall goodness of fit.

Table 6.7 Results of logistic regression model for overconfidence bias

This table shows the results of logistic regression Model 6.2 for overconfidence bias. The reference categories are: Female (Gender), Less than 30 Years (Age), Higher education (Education), Less than 10 Years (Experience)

	B	S.E.	Wald	d.f	Sig.	Exp(β)
Constant	-1.015	.623	2.652	1	.103	.362
GEN	.750	.553	1.837	1	.175	2.116
AGE			8.419	3	.038	
AGE_2	.490	.445	1.211	1	.271	1.632
AGE_3	1.576	.603	6.830	1	.009	4.833
AGE_4	.272	.955	.081	1	.776	1.313
EDU	-.219	.474	.214	1	.644	.803
EXP			7.877	2	.019	
EXP_2	1.448	.569	6.469	1	.011	4.253
EXP_3	2.323	.992	5.489	1	.019	10.210

Model Summary	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
	209.886a	.215	.314

Hosmer and Lemeshow Test	Chi-square	df	Sig.
	1.401	6	.966

Table 6.8 Classification table for regression model for overconfidence bias

This table show the correctly classified cases based on logistic regression model 6.2

Observed		Predicted		
		Overconfidence bias		
		No	Yes	Percentage correct
Overconfidence bias	No	29	32	47.5
	Yes	18	150	89.3
Overall correct percentage				78.2

Table 6.7 indicates that the Wald statistics in the case of age and experience is statistically significant at the .05 level ($p<.05$). We can thus conclude that the age and experience of SME owners/managers significantly affect their chances of being overconfident. The coefficient of age category 'AGE_3'is positive and statistically significant ($p<.05$). This shows that SME owners in the age category of 'between 40 and 50 years' are more likely to be overconfident as compared to SME owners in the

reference category (<30 years). This finding is in line with that of the existing research of Crawford & Stankov (1996) who reported that older people exhibit greater overconfidence in their performance. Similarly, in the case of experience, the coefficient of experience category EXP_2 and EXP_3 is positive and statistically significant ($p<.05$), which shows that the odds of being overconfident increases with the increase in experience. This finding is in line with the findings of Mishra & Metilda (2015) who studied stock investors.

Table 6.7 also shows that the Wald statistic for gender and education is not statistically significant at a significance level of 0.05. This indicates that the tendency to exhibit overconfidence bias is not significantly affected by the gender and education of SME owners. The finding of this study on the effect of gender is contradictory to that of Barber & Odean (2001), Mittal &Vyas (2011), Jaiswal & Kamil (2012) involving stock investors. This contradiction may exist because the present study involves only SME owners, whose behaviour may differ from that of stock investors.

6.4 LOSS AVERSION BIAS

Loss aversion is one of the most important concepts in behavioural economics. Tversky & Kahneman (1991) suggested that people are loss averse and fear losses more that they value gain. Thus, loss aversion is a behavioural condition in which individuals feel more pain in the case of loss compared to the happiness for an equal quantum of gain (Rabin, 1998). Based on the argument of Tversky & Kahneman (1991), to identify the tendency of loss avoidance, we included two questions related to the same loss and gain and asked SME owners to rate their disappointment and satisfaction in both situations on a five-point scale. One question asked SME owners to rate their disappointment in the case of bad debt on 5% and 10% of sales on a five-point scale, where 1 = not at all disappointed, 2 = somewhat disappointed, 3 = moderately disappointed, 4 = highly disappointed and 5 = extremely disappointed. The other question asked them to rate their satisfaction in the case of a profit of 5% and 10% of sales on a five-point scale where 1 = not at all satisfied, 2 = somewhat satisfied, 3 = moderately satisfied, 4 = highly satisfied and 5 = extremely satisfied. The results of this study show that SME owners feel more disappointment in the case of loss than satisfaction in the case of profit (Table 6.9). Table 6.10 also shows that in

the case of 5% of the sales level the difference between degree of disappointment and satisfaction is 0.76952 with a t-statistics of 17.235, which is statistically significant at the 0.01 significance level. Similarly, in the case of 10% of the sales revenue, the difference between degree of disappointment and satisfaction is 1.02602 with a t-statistics of 18.055, which is statistically significant at the .01significance level. A higher difference between the level of disappointment and satisfaction at 10% sales revenue shows that loss aversion bias is more prominent for a higher level of sales revenue. Additionally, our evidence shows that SME owners are generally prone to loss aversion bias because they regret losses more that they value similar gains. These findings are consistent with the results of Ramiah *et al.*'s study (2014) involving treasurers.

Table 6.9 Mean rating score for disappointment and satisfaction

This table shows the mean rating of SME owners for satisfaction and disappointment at 5% and 10% sales level.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Disappointment on 5% sales	3.1859	269	.65422	.03989
	Satisfaction on 5% of sales	2.4164	269	.59024	.03599
Pair 2	Disappointment on 10% sales	4.0149	269	.60452	.03686
	Satisfaction on 10% of sales	2.9888	269	.82173	.05010

Table 6.10 Paired samples test for loss aversion bias

This table shows the results of paired t-test for comparison of level of satisfaction and disappointment on 5% and 10% sales level.

		Mean difference	Std. Deviation	Std. Error Mean	t	D.F	Sig. (2-tailed
Pair 1	Disappointment on 5% sales - Satisfaction on 5% of sales	.76952	.73228	.04465	17.235	268	.000
Pair 2	Disappointment on 10% sales - Satisfaction on 10% of sales	1.02602	.93205	.05683	18.055	268	.000

Further, to identify individual respondents with loss aversion bias, we follow the approach mentioned in research methodology section of chapter 3. A total of 163 (60.6%) respondents are found to be prone to loss aversion bias and 64 (23.8%) respondents are identified who did not show a tendency for loss aversion. We were

not able to determine the status of 42(15.6%) respondents. Hence, they are categorized as others and excluded from further analysis (Table 6.11).

Table 6.11 Identification of loss aversion bias

This table shows the number of SME owners with or without loss aversion bias

		Yes	No	Other	Total
Loss aversion bias	Count	163	64	42	269
	%	60.6	23.8	15.6	100.0

Further, to identify the effect of loss aversion bias on WCM, the practices adopted by SME owners with or without loss aversion bias were compared, and the results are presented in Tables 6.19-6.27. Similar to overconfident bias, loss aversion bias affects the working capital financing of SMEs. Loss averse owners are more conservative in terms of financing as 43.0% owners with loss aversion bias follow conservative financing policy, whereas only 26.6% owners without loss aversion bias follow the conservative policy (Table 6.20). In terms of financing preference also, owners with loss aversion bias have a higher preference for retained earnings and lower preference for short-term bank loans as compared to that of owners without loss aversion bias. Table 4.21 also shows the mean difference between the preference rating of biased and unbiased SME owners for retained earnings (mean difference= 0.3780, t-statistics= 2.213, p-value=0.008) and short-term bank loans (mean difference=-0.4685, t-statistics= -2.768, p-value= 0.001) is statistically significant at the 0.01 significance level. In addition, loss averse owners are less likely to make payments on time as only 18.4% biased owners follow this approach as compared to 34.4% unbiased owners (Table 6.23). For inventory management, biased owners rely more on sales forecasting than do unbiased managers as indicated by the mean difference of 0.44747 which is statistically significant at the .05% significance level (Table 6.26).

6.4.1 Effect of Demographic Variables on Loss Aversion Bias

To determine the effect of demographic variables on the tendency to exhibit loss aversion bias among SME owners/managers, we used a binary logistic regression model similar to the one explained in section 6.2.1.The logistic model used can be expressed as follows:

$$Log\ (P/1-P)\ LAB = B_0 + B_1\ (AGE_2) + B_2\ (AGE_3) + B_3\ (AGE_4) + B_4\ (GEN) + B_5\ (EDU) + B_6\ (EXP_2) + B_7\ (EXP_3) + e_i \quad \textbf{(Model 6.3)}$$

where LAB is the Loss aversion bias; P is the probability of a respondent with loss aversion bias. All other independent variables are the same as in Model-1 explained in section 6.2.1.

Table 6.12 Results of logistic regression model for loss aversion Bias

This table shows the results of logistic regression Model 6.3 for loss aversion bias. The reference categories are: Female (Gender), Less than 30 Years (Age), Higher education (Education), Less than 10 Years (Experience)

	B	S.E.	Wald	D.F	Sig.	Exp(β)
Constant	1.176	.744	2.500	1	.114	3.241
GEN	-1.136	.668	2.892	1	.089	.321
AGE			11.755	3	.008	
AGE_2	.321	.479	.451	1	.502	1.379
AGE_3	1.617	.672	5.789	1	.016	5.039
AGE_4	3.006	.923	10.598	1	.001	20.208
EDU	-.371	.436	.722	1	.395	.690
EXP			1.488	2	.475	
EXP_2	-.592	.548	1.169	1	.280	.553
EXP_3	-.889	.800	1.236	1	.266	.411
Model Summary	-2 Log likelihood 241.919		Cox & Snell R Square .116		Nagelkerke R Square .167	
Hosmer and Lemeshow Test	Chi-square 3.849		Df 7		Sig. .797	

Table 6.13 Classification table for regression model for loss aversion bias

This table show the correctly classified cases based on logistic regression model 6.3

Observed		Predicted		
		Loss aversion bias		
		No	Yes	Percentage correct
Loss aversion bias	No	9	55	14.1
	Yes	10	153	93.9
Overall correct percentage				71.4

The results of the logistic regression model for loss aversion bias are presented in Tables 6.12 and 6.13. The H-L test obtained a chi-square statistic of 3.849 and was

insignificant (p>.05), which indicates that the model was well fitted (Table 6.12). In addition, Table 6.13 reveals that the current model including coefficients (i.e. Age, Gender, Education and Experience) is able to correctly classify 71.4 % of the cases, which also confirms the goodness of model fit. From Table 6.12, it is clear that the Wald statistics for education and experience are not statistically significant and hence are unrelated to loss aversion biases. However, the coefficients of age category AGE_3 and AGE_4 are statistically significant, which shows that in comparison of young (<30 years) SME owners, the older (> 40 years) SME owners are more likely to exhibit loss aversion bias (Table 6.12). These findings are similar to that of Johnson *et al.* (2006) and Arora &Kumari (2015) who also concluded that older people are more likely to exhibit loss aversion bias. Similarly, in the case of gender, the coefficient is negative and statistically significant at the 0.1significance level (Table 6.12). This indicates that male SME owners are less likely to exhibit loss aversion bias as compared to female SME owners (Table 4.12).The finding of this study on the effect of gender also confirms the earlier evidence of Rau (2014) who found that females are more loss averse than are males.

6.5 ANCHORING BIAS

Anchoring is a process in which people make estimates based on some initial values. The theory of anchoring indicates a human tendency to associate a decision with a reference point. To capture anchoring bias, we present a situation to SME owners in which they make credit sales to a low-rated company A, which has been repaid on time. The questionnaire then asks SME owners to provide a rating on a five-point scale, where 1 = not at all likely and 5 = extremely likely that they will grant credit to company A or a similarly low-rated company B in the future. As Table 6.14 shows, the rating scores for companies A and B are 2.9777 and 2.1822, respectively. The difference between the rating of companies A and B is statistically significant at the 0.01 level (Table 4.15). These results show that past experience with company A does not substantially affect the decision to grant future credit to companies A and B. Thus, we conclude that SME owners are not generally prone to anchoring bias.

Table 6.14 Mean rating score for credit sales to company A and B

This table shows the mean rating of SME owners for granting credit sale to company A and B in future

	Mean	N	Std. Deviation	Std. Error Mean
make credit sale to A when paid on time	2.9777	269	1.16521	.07104
make credit sale to B when paid on time	2.1822	269	1.05462	.06430

Table 6.15 Paired samples test for anchoring bias

This table shows the results of paired t-test for comparison of rating in case of credit sale to company A and B

		Mean	Std. Deviation	Std. Error Mean	T	df	Sig. (2-tailed
Pair-1	make credit sale to A when paid on time - make credit sale to B when paid on time	.79554	.87621	.05342	14.891	268	.000

To identify individual respondents with anchoring bias, we used the approach mentioned in the research methodology (chapter 3). Overall, there are 45 (16.7%) respondents with anchoring bias and 134 (50.9%) corporate treasurers/managers without such bias. The remaining 87 (32.3%) corporate treasurers/managers were excluded from further analysis as it was difficult to determine their status (Table 6.16). These results indicate that anchoring bias is not very prevalent in SME owners as only 16.7% exhibited this bias in their decision making.

Table 6.16 Identification of anchoring bias

This table shows the number of SME owners with or without anchoring bias

		Yes	No	Other	Total
Anchoring bias	Count	45	137	87	269
	%	16.7	50.9	32.3	100

Further, to identify the effect of anchoring bias on WCM, the practices adopted by of SME owners with or without anchoring bias were compared and results are presented in Tables 6.19-6.27.Table 6.19 shows that only SME managers with anchoring bias are more concerned with WCM as only 22.2%of biased owners do not have an overall WCM policy as compared to 49.6% of unbiased owners. Similarly, for working capital financing, SME owners with anchoring bias have a higher preference for cash

credit/bank overdraft (mean difference=.51971, t-statistics= 2.339, p-value=.020) and short-term bank loans(mean difference=.34972, t-statistics= 2.055, p-value =.041)than SME owners without anchoring bias (Table 6.21). Similarly, for cash management, SME owners with anchoring bias attach more importance to external factors, that is, financial and banking environment (mean difference=0.79838, t-statistics= 4.686, p-value=.000), market conditions (mean difference=0.7356, t-statistics = 6.667, p-value=.000) and overall economic environment (mean difference=.32960, t-statistics= 2.27, p-value=0.024) than SME owners with anchoring bias.

6.5.1 Effect of Demographic Variables on Anchoring Bias

To assess the effect of demographic variables on anchoring bias, a similar logistic model as explained in section 6.2.1 was used. The logistic model used can be expressed as follows:

$$Log\ (P/1-P)\ AB = B_0 + B_1\ (AGE_2) + B_2\ (AGE_3) + B_3\ (AGE_4) + B_4\ (GEN) + B_5\ (EDU) + B_6\ (EXP_2) + B_7\ (EXP_3) + e_i \qquad \textit{(Model 6.4)}$$

where AB is the anchoring bias; P is the probability of a respondent with anchoring bias. All other independent variables are the same as in Model-1 explained in the previous section.

Results of the logistic regression model for overconfidence bias are presented in Tables 6.17 and 6.18. The use of the H-L test yielded a chi-square statistic of 6.956 which was insignificant (p>.05). This indicates that the model was well fitted (Table 6.17). In addition, Table 6.18 also reveals that the current model including coefficients (i.e. Age, Gender, Education and Experience) is able to correctly classify 78% of the cases, which also confirms the goodness of model fit.

In addition, Table 6.17 shows that Wald statistics for independent variable gender (0.012), age (0.881) and experience (0.643) are statistically non significant in all cases (p>.05).This indicates that the demographic variables age, experience and gender do not significantly affect the tendency to exhibit anchoring bias. Exceptionally, the Wald statistic for independent variable education is statistically significant at the .05 significance level with a positive coefficient value. The positive

sign indicates that SME owners with lower education exhibit anchoring bias more than higher educated SME owners do.

Table 6.17 Results of logistic regression model for anchoring bias

This table shows the results of logistic regression Model 6.4 for overconfidence bias. The reference categories are: Female (Gender), Less than 30 Years (Age), Higher education (Education), Less than 10 Years (Experience)

	B	S.E.	Wald	d.f	Sig.	Exp(β)
Constant	-1.936	.918	4.450	1	.035	.144
GEN	-.079	.732	.012	1	.914	.924
AGE			.667	3	.881	
AGE_2	.545	.733	.552	1	.457	1.725
AGE_3	.287	.831	.119	1	.730	1.332
AGE_4	.374	.983	.144	1	.704	1.453
EDU	1.588	.419	14.363	1	.000	4.894
EXP			.884	2	.643	
EXP_2	.066	.554	.014	1	.905	1.068
EXP_3	.599	.758	.625	1	.429	1.820
Model Summary	-2 Log likelihood		Cox & Snell R Square		Nagelkerke R Square	
	184.024a		.102		.151	
Hosmer and Lemeshow Test	Chi-square		df		Sig.	
	6.956		7		.434	

Table 6.18 Classification table for regression model for anchoring bias

This table show the correctly classified cases based on logistic regression model 6.3

Observed		Predicted		
		Anchoring bias		
		No	Yes	Percentage correct
Anchoring bias	No	126	11	92.0
	Yes	29	16	35.6
Overall correct percentage				78

Table 6.19 Effect of behavioural biases on overall WCM policy of SMEs

This table shows the comparison between the overall WCM policy adopted by biased and unbiased SME owners. Columns shows the proportion of respondents in corresponding category

Behavioural Biases		Formal	Informal	No policy
Self attribution	Yes	13.9%	50.8%	35.2%
	No	1.1%	59.8%	39.1%
	χ^2 statistics		10.587***	
	p-value		.005	
Overconfidence	Yes	8.9%	59.5%	31.5%
	No	6.6%	49.2%	44.3%
	χ^2 statistics		3.218	
	p-value		.200	
Loss aversion	Yes	8.0%	55.2%	36.8%
	No	1.6%	56.3%	42.2%
	χ^2 statistics		3.420	
	p-value		.181	
Anchoring bias	Yes	13.3%	64.4%	22.2%
	No	4.4%	46.0%	49.6%
	χ^2 statistics		12.341***	
	p-value		.002	

*, **, *** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 6.20 Effect of behavioural bias on overall financing policy of SMEs

This table shows the comparison between the overall working capital financing policy adopted by biased and unbiased SME owners. Coolum shows the proportion of respondents for each type of financing policy.

Behavioural Biases		Moderate	Aggressive	Conservative
Self attribution	Yes	41.8%	18.0%	40.2%
	No	50.6%	11.5%	37.9%
	χ^2 statistics		2.342	
	p-value		.310	
Overconfidence	Yes	50.2%	20.5%	29.3%
	No	49.2%	9.8%	41.0%
	χ^2 statistics		4.467**	
	p-value		.045	
Loss aversion	Yes	46.0%	11.0%	43.0%
	No	51.6%	21.9%	26.6%
	χ^2 statistics		4.951**	
	p-value		.042	
Anchoring bias	Yes	31.1%	24.4%	44.4%
	No	53.3%	11.7%	35.0%
	χ^2 statistics		8.007**	
	p-value		.018	

*, **, *** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 6.21 Effect of behavioral biases on working capital financing

This table shows the comparison between the working capital financing practices adopted by biased and unbiased SME owners. *The columns are: 1 = Retained Profit, 2 = Cash Credit/Bank overdraft, 3 = Sort Term Bank Loan, , 4 = Suppliers Credit,5 = Factoring. 6 = Loan from Friends and Family, 7= Loan from Money Lenders, 8 = Government Sponsored Schemes, 9 = Buyers Credit, and 10 = Letter of Credit. The numbers reported in columns 1 to 10 are mean scores obtained from a 5 point scale where 1 =Not at all preferred , 2 = Somewhat preferred , 3 =Moderately preferred , 4 =Highly preferred , and 5 =Extremely preferred.*

Behavioural Biases		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Self attribution Bias	Yes	4.3852	3.5000	2.5172	3.6475	1.4426	2.3934	2.2049	2.7623	2.0328	1.8525
	No	4.0460	3.3839	2.8115	3.6437	1.3908	2.6437	2.3908	2.2299	1.7011	1.6207
	Difference	.33927	.31609	.29423	00386	.05182	-.25024	-.18589	.53241	.33164	.23177
	t-statistics	3.248***	1.780*	2.151**	.031	.660	-1.907*	-1.295	3.134***	2.833***	1.793*
	D.F	207	207	204.56	207	207	207	207	203.63	207	205.89
	p-value	.001	.077	.033	.975	.510	.058	.197	.002	.005	.075
Overconfidence Bias	Yes	4.1964	3.3143	2.7143	3.7500	1.4464	2.6250	2.3274	2.5357	1.9583	1.7738
	No	4.1311	3.4902	2.1377	3.2574	1.4262	2.7705	2.3279	2.4590	1.8689	1.9016
	Difference	.06528	-.1759	.5766	.4926	.02020	-.1454	-.0004	.07670	.08948	-.1278
	t-statistics	.565	-.988	3.134***	2.935**	.250	.803	-.003	.419	.807	-.883
	D.F	227	227	227	227	227	227	227	227	144.25	227
	p-value	.572	.124	.004	.015	.803	.320	.997	.676	.421	.378

Table 6.21 Effect of behavioral biases on working capital financing (Continue)

Behavioural Biases		1	2	3	4	5	6	7	8	9	10
Loss aversion Bias	Yes	4.2718	3.3988	2.3503	3.6933	1.3988	2.5337	2.1902	2.5644	1.926	1.7853
	No	3.8938	2.9688	2.8188	3.5781	1.5938	2.7344	2.5938	2.4063	1.906	1.8906
	Difference	.3780	.43002	-.4685	.11513	-.1949	-.2006	-.4035	.15817	.0201	-.1053
	t-statistics	2.213***	2.314***	-2.768***	.882	-1.998**	-1.366	-2.751***	.855	.156	-.733
	D.F	225	225	225	225	100.25	225	225	225	225	225
	p-value	.008	.002	.001	.379	.026	.173	.006	.393	.876	.464
Anchoring Bias	Yes	4.3111	3.6000	2.9556	3.7111	1.4444	2.1333	2.2889	2.7111	1.9333	1.9111
	No	4.1971	3.0803	2.6058	3.5474	1.4672	2.9416	2.5182	2.3066	1.9197	1.6934
	Difference	.11403	.51971	.34972	.16367	-.0227	-.8082	-.2293	.40454	.01363	.21768
	t-statistics	.852	2.339**	2.055**	1.113	-.248	-5.246***	-1.360	1.928*	.093	1.145
	D.F	180	180	180	88.252	180	180	180	180	180	58.771
	p-value	.396	.020	.041	.269	.805	.000	.176	.055	.926	.257

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively

Table 6.22 Effect of behavioral biases on key value metrics

This table shows the comparison between key value metrics considered by biased and unbiased SME owners in managing and monitoring working capital. The columns are: 1 = Return on Investment, 2 = Networking Capital, 3 = Cash Conversion Cycle, 4 = Current Ratio and 5 = Working Capital Turnover. The numbers reported in columns 1 to 5 are the proportion of respondents for corresponding key value metrics

Behavioural Biases		**1**	**2**	**3**	**4**	**5**
Self attribution	Yes	12.7	35.4	51.9	13.9	7.6
	No	7.4	44.4	37.0	7.4	7.4
	χ^2 statistics	.939	1.091	2.853*	1.36	.002
	p-value	.333	.296	.091	.243	.968
Overconfidence	Yes	11	40.9	45.9	10.4	6.1
	No	0	35.3	55.2	11.8	11.8
	χ^2 statistics	4.21**	.341	1.197	.048	11.23
	p-value	.040	.559	.274	.826	.266
Loss aversion	Yes	10.8	36.3	47.1	13.7	10.8
	No	7.9	36.8	52.6	10.5	0
	χ^2 statistics	.257	.004	.344	.253	4.443**
	p-value	.212	.951	.557	.615	.035
Anchoring bias	Yes	8.6	45.7	34.3	14.3	11.4
	No	7.4	44.1	45.6	10.3	5.9
	χ^2 statistics	.048	.024	1.214	.358	.992
	p-value	.827	.877	.271	.550	.319

*, **, *** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 6.23 Effect of behavioral biases on cash management approaches

This table compares cash management approaches adopted by biased and unbiased SME owners. The columns represent the following: 1 = Managing Cash through Netting, 2 = Centralization of Cash Management Decisions, 3 = Meet Payment in a Timely Manner, 4 = Diversification of Banks, 5 = Minimize Float, 6 = Emergency Liquidity Reserves and 7 = Management of Cash through Leading and Lagging. The numbers reported in columns 1 to 7 are the proportion of respondents for corresponding cash management approach

Behavioural Biases		1	2	3	4	5	6	7
Self attribution Bias	Yes	4.9	86.1	28.7	17.2	6.6	39.3	21.3
	No	2.3	81.6	23	9.2	8	39.1	21.8
	χ^2 statistics	.946	.759	.851	2.732*	.169	.001	.008
	p-value	.331	.384	.356	.098	.681	.969	.927
Overconfidence Bias	Yes	3.6	86.9	26.8	11.9	5.4	31.3	22.0
	No	3.3	85.2	13.1	8.2	6.6	47.3	24.6
	χ^2 statistics	.001	.105	4.702**	.633	.120	3.196**	.168
	p-value	.915	.746	.030	.426	.729	.042	.682
Loss aversion Bias	Yes	3.1	89.6	18.4	13.5	4.3	40.5	24.5
	No	4.7	70.7	34.4	9.4	7.8	34.5	20.3
	χ^2 statistics	.355	4.914**	6.637**	.722	1.136	.724	.459
	p-value	.551	.038	.010	.395	.287	395	.498
Anchoring bias	Yes	2.2	84.4	37.1	13.3	8.9	44.4	15.6
	No	3.6	89.1	21.9	5.1	4.4	36.5	18.2
	χ^2 statistics	.216	.676	4.459**	3.454*	1.326	.904	.169
	p-value	.642	.411	.035	.063	.249	.342	.681

*, **, *** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 6.24 Effect of behavioral biases on external factors affecting cash management

This table compares the rating score of biased and unbiased SME owners to different external factors based on their effects on cash management. The columns represent the following: 1 = Currency Exchange Rate, 2 = Level of Inflation, 3 = Bank Interest Rate, 4 = Financial and Banking Environment, 5 = Market Conditions and 6 = Overall Economic Environment (Gross Domestic Product). The numbers reported in columns 1 to 6 for are mean scores obtained for corresponding external factors from a 5 point scale where 1 =Not at all, 2 =Somewhat, 3 =Moderate, 4 =High, and 5 = Extremely.

Behavioral Bias		1	2	3	4	5	6
Self-attribution	Yes	2.3115	2.9426	3.2213	3.1393	3.5492	2.4180
	No	2.2184	2.1954	2.8736	2.9310	3.2184	2.2414
	Difference	0.0931	0.7472	0.3477	0.2083	0.3308	0.1766
	t-statistics	0.556	5.173***	2.813***	1.618	3.539***	1.502
	D.F	207	204.308	207	207	195.827	206.329
	p-value	0.579	0.001	0.005	0.107	0.001	0.135
Overconfidence	Yes	2.2917	2.6310	3.0476	3.1071	3.3393	2.3750
	No	2.0328	2.2459	2.9672	2.7541	3.2295	2.3443
	Difference	0.2589	0.3851	0.0804	0.353	0.1098	0.0307
	t-statistics	1.608	2.436**	0.583	2.546**	0.962	0.241
	D.F	121.751	122.847	227	227	88.764	227
	p-value	0.11	0.016	0.561	0.012	0.338	0.81

Table 6.24 Effect of behavioral biases on external factors affecting cash management (Continue)

Behavioral Bias		1	2	3	4	5	6
Loss Aversion	Yes	2.2270	2.6196	3.0675	3.0307	3.3620	2.3129
	No	2.3906	2.6250	3.1875	3.2500	3.5469	2.4844
	Difference	-0.16363	-0.00537	-0.12002	-0.21933	-0.18491	-0.17149
	t-statistics	-0.939	-0.031	-0.876	-1.39	-1.813*	-1.318
	D.F	225	225	225	88.55	225	225
	p-value	0.349	0.975	0.382	0.168	0.071	0.189
Anchoring	Yes	2.1778	2.8000	3.3333	3.6889	3.8889	2.5778
	No	2.1387	2.5474	3.0803	2.8905	3.1533	2.2482
	Difference	0.03909	0.25255	0.25304	0.79838	0.7356	32960
	t-statistics	0.203	1.22	1.592	4.686***	6.667***	2.27**
	D.F	180	180	180	180	180	180
	p-value	0.84	0.224	0.113	0.000	0.000	0.024

*, **, *** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 6.25 Effect of behavioral biases on inventory replenishment system

This table compares the inventory replenishment system adopted by biased and unbiased SME owners. *The columns represent the following: 1=Ad-hoc Decision, 2=Computerized Inventory System, 3=Cost Balancing Models, 4=Maintenance of Stock Registered. The numbers reported in columns 1 to 4 for are the proportion of respondents choosing corresponding inventory replenishment system.*

Behavioral Bias		**1**	**2**	**3**	**4**
Self attribution Bias	Yes	21.3%	44.3%	4.9%	29.5%
	No	34.5%	18.4%	1.1%	46.0%
	χ^2 statistics		19.378***		
	p-value		.000		
Overconfidence Bias	Yes	23.2%	38.1%	2.4%	36.3%
	No	34.4%	23.0%	4.9%	37.7%
	χ^2 statistics		6.127		
	p-value		.106		
Loss aversion Bias	Yes	28.2%	35.0%	3.7%	33.1%
	No	29.7%	39.1%	1.6%	29.7%
	χ^2 statistics		1.086		
	p-value		.783		
Anchoring Bias	Yes	24.4%	42.2%	2.2%	31.1%
	No	35.8%	24.8%	1.5%	38.0%
	χ^2 statistics		5.398		
	p-value		.145		

*, **, *** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 6.26 Effect of behavioral biases on inventory management approaches

This table compares inventory management approaches adopted by biased and unbiased SME owners. The columns are as follows: 1 = Material Requirement Planning, 2 = Inventory Models, 3 = ERP System, 4 = Just-In-Time, 5 = Supply Chain Management and 6 = Sales Forecasting. The numbers reported in columns 1 to 6 for Yes and No are mean scores obtained from a 5 point scale where 1 =Not at all important , 2 =Somewhat important , 3 =Moderately important, 4 =Highly important , and 5 =Extremely important. The numbers in parentheses indicate the corresponding p value of the t-statistics given in the table.

Behavioral Bias		**1**	**2**	**3**	**4**	**5**	**6**
Self attribution Bias	Yes	3.3361	1.5574	2.4754	1.5082	2.7295	3.2131
	No	2.8506	1.1609	1.7011	1.2759	2.2069	2.7701
	Difference	.48549	.39646	.77426	.23233	.52261	.44300
	t-statistics	2.882***	3.318***	3.727***	2.258**	3.032***	3.229***
	D.F.	207	192.14	206.46	206.97	207	207
	p-value	.004	.001	.000	.025	.003	.001
Overconfidence Bias	Yes	3.1250	1.3512	2.1310	1.4286	2.4583	3.0000
	No	3.5852	1.2459	2.1475	1.2459	2.4426	2.9344
	Difference	-.4602	.10529	-.01659	.18267	.01571	.06557
	t-statistics	-3.727***	.810	-.071	2.136**	.087	.450
	D.F.	227	227	227	177.45	227	227
	p-value	.000	.419	.944	.034	.931	.653

Table 6.26 Effect of behavioral biases on inventory management approaches (Continue)

Behavioral Bias		1	2	3	4	5	6
Loss aversion Bias	Yes	3.0613	1.3742	1.9632	1.3006	2.5337	3.3125
	No	3.0938	1.3125	2.5000	1.6406	2.3906	2.8650
	Difference	-.03240	.06173	-.53681	-.34001	.14312	-.44747
	t-statistics	-.190	.451	-2.284**	-2.668***	.778	-3.654***
	D.F.	225	225	104.297	88.794	225	162.624
	p-value	.850	.653	.024	.009	.437	.000
Anchoring Bias	Yes	3.3333	1.3556	2.8000	1.5333	2.8000	3.2000
	No	2.8394	1.1971	1.5766	1.2409	2.1022	2.7883
	Difference	.49392	.15848	1.2233	.29246	.69781	.41168
	t-statistics	2.552**	1.119	4.418***	1.856*	3.780***	2.678***
	D.F.	180	65.367	56.819	51.872	180	91.612
	p-Value	.012	.267	.000	.069	.000	.009

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

Table 6.27 Effect of behavioral biases on credit appraisal approach

This table compares credit appraisal approaches adopted by biased and unbiased SME owners. The columns are as follows: 1 = customer past record with other business, 2 = Customer past record with the company, 3 = customer bank reference, 4 = customer credit rating, 5 = customer reputation in the market and 6 = part payment in advance. The numbers reported in columns 1 to 6 for Yes and No are mean scores obtained from a 5 point scale where 1 =Not at all important , 2 =Somewhat important , 3 =Moderately important, 4 =Highly important , and 5 =Extremely important. .

Behavioral Bias		**1**	**2**	**3**	**4**	**5**	**6**
Self attribution Bias	Yes	2.9829	3.4615	1.8376	1.4701	3.6923	2.9402
	No	2.5750	3.0125	1.3500	1.2375	3.6125	2.8718
	Difference	0.40791	0.44904	48761	0.23259	0.07981	0.06838
	t-statistics	2.592**	3.316***	4.067***	2.037**	0.604	0.396
	D.F.	195	173.512	192.947	194.906	195	193
	p-value	0.01	0.001	0.001	0.043	0.547	0.693
Overconfidence Bias	Yes	2.7950	3.3416	1.5714	1.3540	3.7516	2.8994
	No	2.5965	3.2632	1.6316	1.2807	3.3860	2.9643
	Difference	0.19854	0.07846	-0.06015	0.07334	0.36559	-0.06491
	t-statistics	1.391	0.53	-0.477	0.613	2.559**	-0.368
	D.F.	140.589	216	216	216	216	213
	p-value	0.166	0.597	0.634	0.541	0.011	0.713

Table 6.27 Effect of behavioral biases on credit appraisal approach (continue).

Behavioral Bias		1	2	3	4	5	6
Loss Aversion Bias	Yes	2.8092	3.3289	1.4474	1.4013	3.6447	2.7333
	No	2.7097	3.1613	1.7742	1.2903	3.8387	3.2131
	Difference	0.09953	16766	-0.32683	0.11099	-0.19397	-0.47978
	t-statistics	0.596	1.196	-2.854***	0.89	-1.467	-2.772***
	D.F.	212	129.014	212	212	212	209
	p-Value	0.552	0.234	0.005	0.375	0.144	0.006
Anchoring Bias	Yes	2.7500	3.4773	1.9545	1.3182	3.5682	2.8409
	No	2.6032	3.1190	1.4603	1.2778	3.5952	2.8943
	Difference	0.14683	0.35823	0.49423	0.0404	-0.02706	-0.0534
	t-statistics	0.779	1.924*	3.501***	0.36	-0.175	-0.271
	D.F.	168	64.698	168	168	168	165
	p-Value	0.437	0.059	0.001	0.719	0.861	0.787

*,**,*** Significant at the 0.10, 0.05, and 0.01 levels, respectively.

6.6 CONCLUSION

According to the behavioural finance literature, decision makers are not always rational. Various heuristics and biases affect their ability to process information related to financial decisions. This chapter examines several behavioural biases of SME owners in India and assesses their effect on WCM decisions. The study also provides empirical evidence on how demographic variables affect behavioural biases.

Based on a survey of 269 SME owners, we find that these owners are prone to self-attribution, overconfidence and loss aversion biases, but not to anchoring bias. Demographic factors including gender, age and experience significantly affect the propensity to exhibit these behavioural biases. The WCM practices adopted by SME owners with and without behavioural biases differ significantly. SME owners with self-attribution bias rely more on material requirement planning and sales forecasting compared to their counterparts without self-attribution bias. In terms of WCM financing, SME owners with anchoring bias have a higher preference for using supplier credit. Similarly, regarding cash management, SME owners without overconfidence bias are more likely to maintain emergency liquidity reserves as compared to those with overconfidence bias. The study provides new insights regarding behavioural finance literature by testing the propensity of SME owners to succumb to behavioural biases in WCM decision making. This study is the first to provide such evidence for Indian SME owners. Additional research is needed to verify the results in different countries and contexts with the help of large samples.

CHAPTER – 7
DATA ANALYSIS AND RESULTS -IV
(DETERMINANTS OF WORKING CAPITAL REQUIREMENTS IN SMEs)

7.1 INTRODUCTION

Effective working capital management (WCM) is critical for the survival and growth of any organization because it affects the profitability and liquidity available for a business (Deloof, 2003). A firm's decision regarding the optimum level of working capital is affected by a variety of factors. Therefore, a clear understanding of various factors that affect WCM is very essential for improved decision making (Gill, 2011). Prior studies on WCM have identified various determinants of WCM. These include financial leverage, firm's size, and profitability, growth, operating cash flows, asset tangibility and age of the firm. In this study, we investigate the effect of the above factors on working capital requirements (WCR) of small- and medium-sized enterprises (SMEs) in India. A panel data regression method was used to test the hypothesis because it is a comparatively reliable technique for a sample of cross-sectional time series data (Ismail, 2006). In this chapter, empirical results of panel regression on determinates of WCR in Indian SMEs are presented.

The next section of this chapter discusses the problem of stationarity in panel regression. Section 7.3 presents the empirical results, which includes descriptive statistics and correlation analysis of variables under study (section 7.3.1) and results of the regression model (section 7.3.2). Section 7.4 provides the concluding remarks on determinants of working capital requirements.

7.2 TESTS FOR STATIONARITY

The basic assumption of panel data techniques is the stationarity of data. A stationary process has the property that the mean, variance and autocorrelation structure do not change over time. The investigation of stationarity in panel data is closely related to the test of unit roots. The presence of unit roots in a series ensures the non-stationarity of data series. To check whether all variables are stationary, a panel unit root test was used. The panel unit root test was used because it combines the information from time series with the information from cross-sectional units. Maddala & Wu (1999) have listed that the Levin, Lin and Chu (LLC) test and Im, Pesaran and Shin (IPS) test are the key panel unit root tests in the recent econometric literature. In line with the

review of Maddala & Wu (1999), in this study, we used the LLC test and IPS test for determining the stationarity of data series. The results of the LLC test are presented in Table 7.1 for dependent and all independent variables. It is clear that all the variables are stationary with or without any trend as the null hypothesis of non-stationarity is rejected in all the cases. In addition to the LLC test, the results of the IPM test also show similar findings. Table 7.2 shows that all variables are stationary as the null hypothesis of the unit root is rejected in all the cases.

Table 7.1 Results of LLC panel unit root test

This table shows the results of LLC panel unit root test for all dependent and all the independent variables with or without trend

	No Trend				Trend			
Variable	Statistics	p-value	Cross Section	Obs.	Statistics	p-value	Cross Section	Obs.
WCR	-108.253***	0.000	254	1016	-69.6503***	0.000	254	1016
ROA	-50.4653***	0.000	254	1016	-95.9495***	0.000	254	1016
DR	-32.6860***	0.000	254	1016	-49.6910***	0.000	254	1016
SG	-132.554***	0.000	254	1016	-112.178***	0.000	254	1016
AGE	-66.7617***	0.000	254	1016	-64.6390***	0.000	254	1016
FATA	-36.0300***	0.000	254	1016	-357.070***	0.000	254	1016
SIZE	-87.2622***	0.000	254	1016	12.7893***	1.000	254	1016
OCF	-57.5623***	0.000	254	1016	-147.347***	0.0000	254	1016

Note: H_0: non stationary (unit root)
***Estimates are statistically significant at p<0.01

Table 7.2 Results of IPS panel unit root test

This table shows the results of IPS panel unit root test for all dependent and all the independent variables with or without trend

	No Trend				Trend			
Variable	Statistics	p-value	Cross Section	Obs.	Statistics	p-value	Cross Section	Obs.
WCR	-23.1329***	0.000	254	1016	-16.7918***	0.000	254	1016
ROA	-12.8820***	0.000	254	1016	-27.8664***	0.000	254	1016
DR	-9.55459***	0.000	254	1016	-13.9851***	0.000	254	1016
SG	-20.0906***	0.000	254	1016	-30.6682***	0.000	254	1016
AGE	-1084.83***	0.000	254	1016	-686.092***	0.000	254	1016
FATA	-10.6026***	0.000	254	1016	-87.3996***	0.000	254	1016
SIZE	-17.7163***	0.000	254	1016	-13.7946***	0.000	254	1016
OCF	-20.1382***	0.000	254	1016	-29.3584***	0.000	254	1016

Note: H_0: non stationary (unit root)
***Estimates are statistically significant at p<0.01

7.3 EMPIRICAL RESULTS

As discussed in chapter 3, in this study, we used the panel data regression model to examine the relationship between independent variables and WCR of SMEs in India. To achieve the objective of this study, various hypotheses have been tested using the panel regression in line with the existing literature (Banos-Caballero *et al*., 2010; Akinlo, 2012; Banos-Caballero *et al.,* 2012; Deloof, 2003). Firstly, the panel data regression model in both fixed and random effects was analysed, and based on the Hausman test, fixed effect model results are examined. To overcome the problem of heteroscedasticity, all the variables were deflated by the firm's total assets for each year.

7.3.1 Descriptive Statistics

Table 7.4 presents the mean, median, maximum, minimum and standard deviations for the dependent and independent variables examined in this study. A summary of descriptive statistics presented in Table 7.3 shows that during the study period of 2010-2014 the average profitability of SMEs is 9.94 %, which ranges from a maximum of 328.86 % to -52.57%. In addition, it is also observed that SMEs in the sample are not highly levered. Firms in the sample have on an average 27.98 % debt of their total assets. The lower proportion of debt in the sample firms implies that SMEs in India rely mainly on internal financing and equity capital. Similarly, in terms of sales growth, a sale of SMEs in the sample is growing with 14.20%. In terms of growth, a significant variation is also observed between the firms in the sample per year. Sales growth ranges from a maximum of 539.46% to a minimum of -78.56%in the sample during 2010- 14. Table 7.3 also indicates that the average amount invested in tangible fixed assets for the sample is only 23.25% of their total assets. Banos-Caballero *et al*. (2010) obtained similar (23.6%) results for Spanish SMEs. In addition, the operating cash flow in these SMEs is also very low. As indicated in Table 7.3, an average sample firms is able to generate 3.37% percent of operating cash to total assets.

In this study, we used panel regression to identify various determinants of WCR in Indian SMEs. Before estimating the regression coefficient for each variable, it is essential to check the correlations among independent variables to ensure that the regression model does not have the problem of multi-collinearity.

Table 7.3 Descriptive statistics of WCR and independent variables

This table shows the mean, median, maximum and minimum value of all the variables in this study

	Dependent variable	**Independent Variables**						
	WCR	**ROA**	**DR**	**SG**	**AGE**	**FATA**	**SIZE**	**OCF**
Mean	0.1683	0.0994	0.2798	0.1420	3.2496	0.2325	5.7382	0.0337
Median	0.1660	0.0930	0.2688	0.0895	3.1781	0.1820	5.5328	0.0334
Maximum	0.8631	3.2886	0.9869	5.3946	4.9628	0.9785	11.7761	0.8174
Minimum	-0.4399	-0.5257	0.0011	-0.7856	0.6931	-0.0304	2.2721	-0.6488
Std. Dev	0.1999	0.1220	0.1807	0.4157	0.6029	0.1949	1.4569	0.1238

Table 7.4 Correlation matrix of WCR and independent variables

T*his table show the pair wise value of Pearson correlation coefficients for all the variables along with value of variance inflation factor.*

	Dependent Variable	**Independent Variable**							
	WCR	**ROA**	**DR**	**SG**	**AGE**	**FATA**	**SIZE**	**OCF**	**VIF**
WCR	1.000								
ROA	0.102***	1.000							**1.028961**
DR	-0.253***	-0.058**	1.000						**1.06376**
SG	0.024	0.089***	-0.038	1.000					**1.026047**
AGE	-0.053	0.104***	-0.157***	-0.080***	1.000				**1.078928**
FATA	-0.367***	0.014	-0.040	-0.064**	0.172***	1.000			**1.341373**
SIZE	0.025	-0.027	0.148***	0.051	-0.157***	-0.470***	1.000		**1.319498**
OCF	-0.098***	0.087***	-0.136***	-0.067**	0.109***	0.208***	-0.134***	1.000	**1.004102**

Note: **Estimates are statistically significant at $p<0.05$

***Estimates are statistically significant at $p<0.01$

The pairwise Pearson correlation coefficients between all the variables in the model are presented in Table 7.4. The results of the correlation analysis indicate that dependent variable WCR is significantly correlated with ROA, DR, FATA and OCF. On the contrary, the correlation coefficient between WCR and SG is not significant. In terms of independent variables, the correlation coefficient ranges from 0.014 to -0.470. Overall, the magnitude of the correlation coefficients shows that our independent variables are not much co-related among them. Although, some pair wise compression between independent variables is statistically significant. Further, to test whether these significant correlation coefficients will create the problem of multi-collinearity, the variance inflation factor (VIF) is calculated. VIF helps in measuring the severity of multi-collinearity in a multiple regressions. It measures the extent to which variance of an estimated regression coefficient is increased because of the problem of collinearity. In terms of acceptable level of VIF, most of research studies consider 10 as the maximum acceptable value of VIF (Hair, 2006; Marquardt, 1970). Table 7.4 shows that VIF for all the variables are within the acceptable limit of 10, which reduces our concern of multi-collinearity.

7.3.2. Regression Analysis

The objective of this study is to identify the various determining factors of WCR in Indian SMEs. To obtain the research objective and to test the research hypothesis, in this study, we used Panel regression. Based on the approach of Baños-Caballero *et al*. (2010) and Akinlo (2012), we tested the hypothesis using the following multivariate regression model with WCR as a dependent variable and, return on assets, debt ratio, sales growth, age of firm, ratio of tangible fixed assets to total assets, firm size and operating cash flow as independent variables.

$$WCR_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 DR_{it} + \beta_3 SG_{it} + \beta_4 AGE_{it} + \beta_5 FATA_{it} + \beta_6 SIZE_{it} + \beta_7 OCF_{it} + e_{it} \quad \textit{(Model 7.1)}$$

where

β_0 = Common y-intercept

$\beta_1 - \beta_7$ = Coefficients of the explanatory variables concerned

WCR_{it} = Working capital requirement of firm i at time t

ROA_{it} = Return on assets of firm i at time t

DR_{it} = Debt ratio of firm i at time t

SG_{it} = Sales growth of firm i at time t

AGE_{it} = Age of firm i at time t

$FATA_{it}$ = Tangible fixed assets to total asset ratio of firm i at time t

$SIZE_{it}$ = Size of firm i at time t

OCF_{it} = Operating cash flow of firm i at time t

e_{it} = Stochastic error term of firm i at time t

The basic panel regression model (7.1) can be further divided into pooled model, fixed effect model and random effect model based on error components. In this study, two sets of tests were conducted to test the fixed effect model against the standard pooled model and the random effect model against the fixed effect model. Firstly, to test the fixed effect model against the standard pooled model, a redundant fixed effect test was applied and the results are presented in Table 7.5. This includes two tests that evaluate the joint significance of cross-sectional effects using the sum-of-square (F- test) and the likelihood function (chi-square test). The null hypothesis assumes that that the fixed effects are redundant. Table 7.5 shows a significant p-value in both the cases; thus, the null hypothesis is rejected. This suggests that cross-sectional effects are statistically significant. Thus, the fixed effect model is acceptable in the estimates.

Table 7.5 Results of Fixed effect test

This table show the value of fixed effect test for Regression model $WCR_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 DR_{it} + \beta_3 SG_{it} + \beta_4 AGE_{it} + \beta_5 FATA_{it} + \beta_6 SIZE_{it} + \beta_7 OCF_{it} + e_{it}$

Effects Test	Statistic	Degree of freedom	p-value
Cross-section F	8.193240	253,1009	0.0000
Cross-section Chi-square	1418.060656	253	0.0000

Note: H_0: Fixed effects are redundant

Further, to test the fixed effect model against the random effect model, the Hausman (1978) test was applied and the results are presented in Table 7.6 (Eriotis *et al*., 2007; Garcia-Teruel & Martiez-Solano, 2007; Manoori & Muhammad, 2012).The Hausman test has a null hypothesis that individual effects are uncorrelated with the other regressors in the model. Table 7.6 shows a significant p-value for the chi-square statistic which rejects the null hypothesis. Thus, it can be concluded that the fixed effect model is preferred to the random effect model. As the fixed effect model is the

most appropriate model for estimation, results of only the fixed effect model are presented and analysed.

Table 7.6 Results of Hausman test

This table show the value of Hausman test for Regression model $WCR_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 DR_{it} + \beta_3 SG_{it} + \beta_4 AGE_{it} + \beta_5 FATA_{it} + \beta_6 SIZE_{it} + \beta_7 OCF_{it} + e_{it}$

Effects Test	Chi-Sq. Statistic	Degree of freedom	p- value
Cross-section random	23.662958	7	0.0013

Note: H_0: there are no fixed effects

The results of the fixed effect regression model are presented in Table 7.7. Before interpreting the results, it is essential to check whether the model is free from the problem of first-order serial correlation. To detect the problem of serial correlation, the Durbin-Watson test was used. The Durbin-Watson statistic is 1.614, which indicates the absence of serial correlation in the data (Table 7.7). Table 7.7 further shows that the R-squared statistic for the model is 0.7705, which means 77.05% of the variation in the firm's WCRs can be explained by independent variables used in the model. In addition, the F-statistic is also found to be statistically significant, which confirms an overall goodness of fit for the model.

In the fixed-effect model, the coefficients of ROA and SG are positive and statistically significant at the 0.1 and 0.05 significance levels, respectively (Table 7.7).The positive and statistically significant coefficient of ROA signifies that there is a significant positive relationship between WCR and ROA and supports the ***H_1 of the significant relationship between ROA and WCR.*** This positive relationship can be justified by the fact that higher profitable firms have a greater capacity to extend trade credit to their customers, which ultimately increases their WCR (Niskanen & Niskanen, 2006). The findings of this study on the effect of profitability on WCR are consistent with those of Nazir & Afza (2009) who reported a similar positive relationship between WCR and ROA.

Similarly, the coefficient (0.017155, p-value= 0.046) of SG is also positive and statistically significant at the .05 significance level (Table 7.7). This significant and positive coefficient supports the ***H_2 of the significant positive relationship between sales growth and WCR.*** These results are consistent with those in the literature. Thus, we can conclude that firms with higher sales growth have a higher

WCR (Chiou *et al*., 2006; Nazir & Afza, 2009; Wasiuzzaman & Arumugam, 2013). High growth firms have to maintain a higher level of inventory, which ultimately increases investment in working capital. It is also observed from Table 7.7 that **H_3 of the significant positive relationship between firm size and WCR** is rejected as the coefficient of SIZE is -0.023218 with a p-value of 0.1394, which is statistically not significant. These results show that size of a firm does not significantly affect its WCR in Indian SMEs**.** These results are contradictory to the findings of Akinlo (2012) and Abbadi & Abbadi (2013) involving large firms. Such a contradiction in the results may be due to the uniqueness of the sample. This study includes only SMEs that do not differ much in terms of size. This may be the reason why the effect of size in this study is not significant.

Similar to firm size, the coefficient of firm age is -0.031680 with a p-value of 0.1394, which is statistically not significant at the .05 significance level (Table 7.7). These non-significant results indicate that older and young firms do not significantly differ in terms of their WCR. These results also reject the ***H_4 of the significant positive relationship between a firm's age and WCR.***

In terms of asset tangibility, the coefficient of FATA is found to be -0.319070 with a p-value of 0.000, which is statistically significant at the .01 significance level. This negative and significant coefficient of FATA support ***the H_5 of the significant negative relationship between tangibility fixed assets and WCR.*** It can be concluded that firms with higher tangible fixed assets need less WCR. In the situation of financial constraints, if the investment in tangible fixed assets is higher, it automatically reduces the funds available for working capital. Thus, firms need to follow an aggressive working capital policy which reduces the WCR. These results are also in line with those of the previous studies of Fazzari & Petersen (1993), Kieschnick *et al.* (2006) and Banos-Caballero *et al.* (2010) who also advocated a significant negative relationship between the tangible fixed assets and WCR.

The empirical results of this study also show a significant negative relationship between the operating cash flow and WCR. The value of the coefficient of OCF in Table 7.7 is statistically significant and supports *the* ***H_6 of the significant relationship between operating cash flow and WCR.*** Chiou *et al.* (2006) argued that a higher operating cash flow is associated with efficient WCM, which subsequently resulted in a lower WCR. In addition, operating cash flow can be increased by

accelerating the collection of receivables and delaying the payments of payables, thus, the investment in working capital gets automatically reduced. This negative relationship is also supported by Chiou *et al.* (2006) and Appuhami (2008) for a sample of large firms.

Table 7.7 Results of Fixed effect panel data regression for determinants of WCR

Dependent variable: WCR (Working Capital Requirement)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Constant	0.525456***	0.137185	3.830273	0.0001
ROA	0.056789*	0.030802	1.843701	0.0655
DR	-0.183299***	0.044371	-4.131018	0.0000
SG	0.017155**	0.008610	1.992486	0.0466
AGE	-0.031680	0.046883	-0.675725	0.4994
FATA	-0.319070***	0.062310	-5.120679	0.0000
SIZE	-0.023218	0.015697	-1.479160	0.1394
OCF	-0.106323***	0.030181	-3.522887	0.0004
R-squared	0.750599			
Adjusted R-squared	0.686333			
F-statistic	11.67961			
P value	0.000000			
Durbin-Watson statistics	1.614269			
Note: t statistic in parentheses; *Significant at p< 0.1 * *Significant at p< 0.05 ; ***Significant at p< 0.01				

Finally, the results of the panel regression also support the ***H_7 of the significant negative relationship between debt ratio and WCR***. Table 7.7 shows that the coefficient of debt ratio (DR) is statistically significant with a negative sign. This negative sign advocates an inverse relationship between leverage and WCR, which means high levered firms need less investment in working capital than do low levered firms. A firm with a higher debt ratio has to incur a higher cost for external financing due to a higher risk premium (Banos-Caballero *et al.*, 2010). Thus, these firms pay more attention to effective WCM so that investment in working capital can be minimized to avoid further high cost external financing (Nazir & Afza, 2009). This negative relationship is also confirmed by Raheman & Nasr (2007) and Akinlo (2012) for different countries.

7.4 CONCLUSION

WCM is a very important factor to consider for all firms, regardless of their size.. However, it is even more critical in the case of small firms due to their limited sources of funds and financial expertise. This chapter contributes to the limited literature on the determinants of WCM by identifying the various determinants of WCRs in Indian SMEs. This chapter investigates the effects of firm age, firm size, debt ratio, asset tangibility, operating cash flow, sales growth and profitability on WCRs of Indian SMEs. To investigate the relationship between dependent and independent variables, in this study, we used panel data regression.

The overall results of the study indicate that profitability measured by ROA and sales growth positively affects the WCRs and operating cash flow, asset tangibility, and leverage negatively affect the WCRs in Indian SMEs. In the case of firm size and firm age, we did not find any significant effect on WCR. Our findings on these relationships are partly consistent with those in the previous literature (Chiou *et al*., 2006; Nazir & Afza, 2009; Banos-Caballero *et al*., 2010; Manoori & Muhammad, 2012; Valipour *et al*., 2012; Akinlo, 2012). Some of the findings of this study are contradictory to the findings of earlier studies. This contradiction is because all studies except that of Banos-Caballero *et al*. (2010) used a sample of large firms to analyse the determinants of WCR. These conflicting results therefore provide scope for future research in the case of small firms.

CHAPTER 8
SUMMARY, CONCLUSION AND SUGGESSIONS

8.1 INTRODUCTION

Management of financial affairs is one of most important '*value adding*' activity of an organization and thus should be an inseparable part of top management's decision-making process (Chandra, 2015). Corporate finance decisions can broadly be categorized into (1) long-term decisions related and (2) short-term decisions (Chiou et al., 2006). Long-term financial decisions primarily deal with firm valuation, earning management, capital structure, capital budgeting, etc. In contrast, short-term decision making entails decisions related to liquidity of a firm, especially working capital management (WCM), which focuses on the composition of current assets and current liabilities of a firm (Jamalinesari & Soheili, 2015). WCM performance is an important indicator of company's financial position. WCM includes the essential decisions related to the level and composition of current assets and current liabilities of the firm (Pass and Pike, 1984). Working capital is required in any organisation to fund the difference between the short-term assets and short-term liabilities (Modi, 2012). Primary objective of WCM is to maintain an optimal level of investment in working capital components such as account receivable, account payable, inventory and cash so that the overall value of the firm can be maximised (Afza and Nazir, 2007). Effective WCM can reduce financing cost by minimising the funds tied up in different components of working capital (Filbeck & Krueger, 2005). It is therefore very important for enterprises to manage their working capital more carefully as it is critical for long-term survival of business (Padachi and Howorth, 2014). Although effective WCM is important for all size of firms, but in case of SMEs it becomes relatively more important because huge amount of money is usually tied in different components of current assets in SMEs (Banso-Caballero *et al.*, 2010). Unlike larger companies, SMEs have an even more limited source of funds and are less likely to have access to financial expertise. Therefore it is important for them to manage current assets in an optimum way. Effective WCM can make a substantial difference between the success and failure of an enterprise. Smith (1973) argues that a large number of business failures have been due to improper WCM. Berryman (1983) and Dunn & Cheatham (1993) also state that improper WCM is the primary reason for small business failures in the UK and the USA. Dodge *et al,* (1994) also identified

that inadequate capital, improper cash flow management and inventory control causes small business failure. Despite such significance, research related to working capital decision making appears to be relatively neglected in the corporate finance literature (Pass and Pike, 1987). Over the last forty years, major theoretical developments have been reported on the management of long-run financial decisions of a firm (Garcia-Teruel & Martinez-Solano, 2007).

However, there has been a paradigm shift in the area of WCM after the global financial crisis (GFC) of 2007-08. The GFC has brought back the focus of practitioners on WCM (Enqvist *et al*., 2014). Due to the GFC, several large financial institutions and banks went bankrupt, and this ultimately resulted in a credit crunch situation for corporate firms (Polak, 2012). This phenomenon forced them to look for internal sources to free up much needed cash and cope with the situation of limited availability of external finance. The optimum level of working capital provides an opportunity to increase the company's free cash flow (Ganesan, 2007). Although WCM is gaining importance among corporate treasurers, shareholders, loan providers and legal advisers, it has often been overlooked by academics.

Development in the WCM-related literature is very limited in scope (Singh & Kumar, 2014). The primary focus of researchers has been on studying the relationship between WCM efficiency and profitability of a firm (Jose *et al*., 1996; Shin & Soenen, 1998; Deloof, 2003; Padachi, 2006; Garcia-Teruel & Martinez-Solano, 2007; Raheman & Nasr, 2007) or on identifying the various determinants of WCM (Chiou *et al.*, 2006; Narender *et al*., 2008; Nazir & Afza, 2009; Mansoori & Muhammad, 2012).

Research related to how firms manage working capital in an organizational context is very limited. Few studies like Smith & Sell (1980), Belt & Smith (1991), Zhao (2011), Burns & Walker (1991), Peel & Wilson (1996), Padachi & Howorth (2014) and Orobia *et al.,* (2013) have captured practices related to WCM. Study of Smith & Sell (1980), Belt & Smith (1991), and Zhao (2011), were performed in the context of large firms operating in well developed economies like Australia and the USA. However, their findings may not apply to SMEs for several reasons. First, SMEs may differ from large firms in terms of formal processes used in WCM. Second, SME owners may not have the same level of financial sophistication as corporate treasurers in large firms. In case of small firms, study of Burns & Walker

(1991) and Peel & Wilson (1996), captured the WCM practices of U.S.A and U.K. SMEs but these study were conducted in the year of 1991 and 1996 while major advancement in WCM have occurred after the GFC of 2008. Furthermore, the finding of these studies cannot be generalised for Indian SMEs as institutional, cultural and other differences may exist between firm operating in developed economies like U.S.A or U.K and developing economies like India. In India financing costs tend to be higher and capital less readily available than developed countries. India also has somewhat different accounting practices, a smaller manufacturing base, and a less open multi-national firm orientation. Further limitation of these studies can be identified as ignorance of behavioural aspects of finance managers though behavioural finance literature suggests that professionals are prone to various heuristic-driven biases (Kumar, 2009; Tversky & Kahneman, 1974). Therefore, present study aims at capturing contemporary WCM practices of SMEs in India by incorporating behavioural aspects of SMEs owners/managers. The objectives of the study are three folded. But primarily, this study aims at documenting contemporary practices adopted by SMEs in India for managing working capital. Secondly this study, also aims at identifying the factor affecting the working capital requirements of SMEs. Finally this study identifies whether the SMEs owner exhibit behavioural biases in decision making and how there biases affect their WCM decisions.

8.2 KEY FINDINGS AND CONCLUSION

This study contributes significantly in both theory and practice. This study makes several new contributions, as well as extension to the extant literature on WCM practices. This study is probably the first to capture the WCM practices of SMEs in Indian context. Thus it contributes to WCM literature by filling the gap. Additionally this study also assesses the determinants of working capital requirement of SMEs in Indian context which is also not previously documented in the literature. It also provides new empirical evidence of the effect of firm's characteristics and owner/manager characteristics on WCM practices.

This study also contributes to behavioural finance literature. Behavioural finance suggests that professionals are prone to various heuristic-driven biases (Kumar, 2009; Tversky & Kahneman, 1974) thus this study update the literature first, by testing the propensity of SMEs owners to fall parry to self attribution bias,

overconfidence bias, anchoring bias and loss aversion bias and second, by determining how these biases affect the WCM decision making of SMEs owners. The main finding and conclusion are presented here under the following sub sections:

8.2.1 Key findings Related to WCM Practices

To answer research questions of this study, a survey based research was carried out with the help of a structured questionnaire. Owners of Indian SMEs were contacted for data collection purpose. Finally, data was collected and analyzed and following key findings were observed related to WCM of SMEs in India.

1. It was found that Indian SMEs are primarily owned by male and the participation of females in SMEs is very limited in India. Similar to the finding of Burns & Walker (1991), present study also found that focus of SMEs on WCM is limited as it was found in the survey that more than one-third (37.5%) of the SMEs do not have any kind of overall policy (formal or informal) for managing working capital in their firms. In addition, it is also observed that only 7.1% Indian SMEs have formal policy for managing WCM. In SMEs, working capital is mostly informally managed as more than half of the sample firms (55.4%) in this study were found to have an informal policy for managing working capital. These SMEs are mainly owner driven and lack in decentralization due to which there is not much formalization in WCM. Apart from this, these SMEs are mainly self-financed; thus, they are not pressured by external stakeholders to have a formal policy.
2. In terms of decision making related to WCM policy formulation, owners of SMEs play a major role. In the present study it was found that the major responsibility of policy formulation lies only with SME owners, because in 93.5% of the SMEs in the sample the owner is the policy maker.
3. Indian SMEs also do not regularly review their policy for WCM. They usually adopt a contingent approach towards WCM, which means that they review the policy related to WCM whenever they feel the need to do so.
4. Similar to the findings of Perera & Wickremasinghe (2010), Indian SMEs are also not very aggressive in their financing approach rather maximum number of SMEs follows a moderate approach for financing. SMEs adopt a moderate policy primarily because it helps in maintaining a proper trade-off between liquidity and profitability.

5. In terms of working capital financing, Indian SMEs highly prefer internal financing in the form of retained profit. In case of external sources SMEs mainly rely on cash credit/ bank overdraft and supplier's credit for working capital financing. Surprisingly, SME owners least preferred 'factoring' which is a kind of supplier financing and involves selling of accounts receivable at a discount for immediate cash.
6. The results show that the maximum numbers of SMEs consider the CCC as the key value metric of WCM because it takes into account all components of WCM (e.g. inventory management, receivable management and payable management) followed by NWC.
7. In terms of relative importance of the individual components of WCM, that most important component in Indian SMEs is cash management followed by inventory management. The results of this study support the arguments of Chang & Chang (1986) who reported that cash management is the most important component of financial management and the primary reason for small business failure.
8. Majority (86.6%) of Indian SMEs have centralized cash management system to manage cash tightly because it make cash management more transparent and controllable due to the involvement of one individual/group for all cash-related activity. The results of this study on centralization of cash management are fairly consistent with Soenen (1986) who also found that around 70% of the firms in UK have centralized cash management decisions. In case of cash management SMEs follow a caution approach and like to maintain emergency liquidity reserve to deal with unforeseen circumstances and avoid financial distress. However, Indian SMEs do not rely much on techniques like netting, bank diversification. The later results are contrary to the findings of Zhao (2011) who observed that 43% of Australian large firms use bank diversification for effective cash management. The possible reasons for such contradiction are the size of the firms of these two studies. SMEs do not prefer to diversify bank transaction because it is relatively easy to establish a good and healthy relationship with a single bank than with multiple banks. In addition, Soenen (1986) and Anvari & Gopal (1983) concluded that small firms contrary to large firms prefer to limit cash transaction to one or two banks.

9. In case of inventory management it is observed that SMEs have higher reliance on MRP and sales forecasting to reduce the production cost due to optimal investment in inventory and timely delivery of finished products to customers. the focus of SMEs on ERP system is low as these small sized firms do not have skilled in-house IT resources that can provide suitable inputs and proper guidance to the implementation team. Furthermore, they have budget constraints. Similar to the ERP system, the use of other sophisticated techniques such as JIT and EOQ is also very limited in SMEs. Agyei-Mensah (2012) also found similar evidence for SMEs in Ghana. He concluded that 83% of the SMEs in Ghana do not at all use EOQ models for determining reorder quantity for their firm.
10. The results of this study also show that SMEs in India usually sell their product on a credit basis as 94.4% SME owners admitted that they grant goods on a credit basis to customers. In addition, it is also found that the proportion of credit sales is higher in SMEs as 74.4% responding firms have a credit sales of >40% of their total. To accelerate the collection of receivable SMEs mainly rely on written and verbal requests to tactfully remind customers for prompt payments. Secondly, SMEs use NEFT/RTGS for cash transaction to help in reducing float time in payment and subsequently speeds up receivable collection. On the contrary the use of providing cash discount to customer for speeding up the collection of receivable is very limited discount because it increases the cost and reduces the profit margin of sales.
11. In terms of effect of fundamental factors (firm size, firm age, level of financial leverage, firm performance and foreign sales, gender of owner, age of owner, education of owner and experience of owners) on WCM practices, the finding of this study make it conclusive that these fundamental factors have a bearing on overall WCM practices and related to its components. It is noted that firm-specific factors have a greater impact on WCM practices, especially firm size. On the contrary, the effects of owner-specific factors on WCM practices are moderate. These factors primarily affect the working capital financing of SMEs.

8.2.2 Key Findings Related to Behavioural Bias

According to the behavioural finance literature, decision makers are not always rational. Various heuristics and biases affect their ability to process information related to financial decisions. With the help of survey of 269 SME owners, this study examines the presence of overconfidence bias, self attribution bias, loss aversion bias and anchoring bias in decision making related to WCM. The study also provides empirical evidence on how demographic variables affect behavioural biases. The main findings of this study related to behavioural biases are as follow:

1. The findings of this study show that SME owners are generally prone to self-attribution bias because they attribute favourable outcomes to their own capabilities and blame to the external factors for failures. The findings of this study on self-attribution bias are similar to the findings of Ramiah *et al.* (2014) who observed that Australian corporate treasurers are prone to self-attribution bias. In terms of effect of demographic variable on tendency to exhibit behavioural biases, gender, age and experience of SME owners significantly affect the odds of being prone to self attribution bias. It was found that males are more likely to be prone to self-attribution bias as compared to females. Similarly, it is also found that elderly and highly experience SME owners are more prone to self-attribution bias as compared to young and less experienced SME owners.
2. In terms of effect of self attribution bias on WCM practices of SMEs, it is found that biased SME owners have a higher preference for internal funds in the form of retained earnings for working capital financing than do unbiased SME owners. On the contrary, unbiased SME owners rely more on external financing in the form of short-term bank loans and buyer's credits.
3. Similar to the findings of Ramiah *et al.* (2014) present study also found that in general SME owners are overconfident because they overestimate their own capabilities. In case of effect of demographic variable, it is found that age and experience of SME owners significantly affect their chances of being prone to overconfidence bias. This study suggests that older and higher experience SME owners exhibit greater overconfidence in their performance. In addition to that, overconfident SME owners are more aggressive in terms of financing policy than SME owners without overconfidence bias.

4. Findings of this study suggest that Indian SMEs owner are in general prone to loss aversion bias because they regret losses more that they value similar gains. In addition, tendency to exhibit loss aversion bias is also affected by age and gender of SME owners. Results of this study suggest that older SME owners are more likely to exhibit loss aversion bias than their young counterparts. Similarly, it is also observed that female SME owners are more likely to be loss averse than male SME owners. Finally, owners with loss aversion bias are less likely to make payments on time unbiased owners. In case of inventory management also, biased owners rely more on sales forecasting than do unbiased managers.
5. These results of this study show that SME owners are not generally prone to anchoring bias because past experience with company A does not substantially affect the decision to grant future credit to companies A and B. In terms of individual respondents only 16.7% of SME owners exhibited this bias in their decision making. Further, it is also noted that demographic factors do not statistically affect the tendency of SME owners to exhibit anchoring bias except in education. In case of education it is found that SME owners with lower education exhibit anchoring bias more than higher educated SME owners do.

8.2.3 Key Findings Related to Determinants of Working Capital Requirements

WCM is a very important factor to consider for all firms, regardless of their size. However, it is even more critical in the case of small firms due to their limited sources of funds and financial expertise. This study investigates the effects of firm age, firm size, debt ratio, asset tangibility, operating cash flow, sales growth and profitability on WCRs of Indian SMEs with the help of panel data regression. The overall results of the study indicate that profitability measured by ROA and sales growth positively affects the WCRs and operating cash flow, asset tangibility, and leverage negatively affect the WCRs in Indian SMEs. In the case of firm size and firm age, we did not find any significant effect on WCR. Our findings on these relationships are partly consistent with those in the previous literature (Chiou *et al*., 2006; Nazir & Afza, 2009; Banos-Caballero *et al*., 2010; Manoori & Muhammad, 2012; Valipour *et al*., 2012; Akinlo, 2012). Some of the findings of this study are contradictory to the

findings of earlier studies. This contradiction is because all studies except that of Banos-Caballero *et al*. (2010) used a sample of large firms to analyse the determinants of WCR. These conflicting results therefore provide scope for future research in the case of small firms.

Figure 8.1 Final determinants of working capital requirements in Indian SMEs

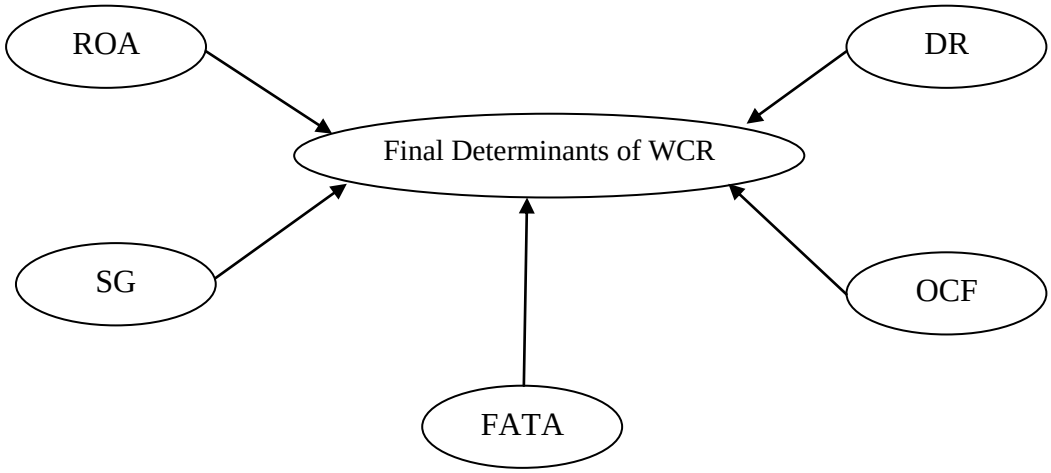


Table 8.1 Research question wise summary of key findings

Research Question	**Major Finding**	**Justification**
1(a) What are the contemporary practices and techniques adopted by SMEs for managing Overall WCM	A) It is found that focus of SMEs on WCM is limited as more than one-third (37.5%) of the SMEs in this survey do not have any kind of overall policy (formal or informal) for managing working capital in their firms. B) Owners of SMEs play a major role in policy formulation related to WCM in SMEs.	These SMEs are mainly owner driven and lack in decentralization due to which there is not much focus on the specific aspects of WCM. Apart from this, these SMEs are mainly self-financed; thus, they are not pressured by external stakeholders to have a formal policy.

	C) SMEs are also not very aggressive in their financing approach rather maximum number of SMEs follows a moderate approach for financing.	SMEs adopt a moderate policy primarily because it helps in maintaining a proper trade-off between liquidity and profitability.
	D) In terms of working capital financing, Indian SMEs highly prefer internal financing in the form of retained profit. In case of external sources SMEs mainly rely on cash credit/ bank overdraft and supplier's credit for working capital financing. Surprisingly, SME owners least preferred 'factoring' which is a kind of supplier financing and involves selling of accounts receivable at a discount for immediate cash.	The major focus of SMEs is on internal financing is due to its cost advantages. SMEs are mainly owner driven and due to lack of knowledge about sources like factoring, government sponsored schemes and letter of credits. Another reason for low preference for above sources is procedural issues and high disclosure requirements.
	E) The results show that the maximum number of SMEs (46.4%, n=78) that monitor WCM consider the ***CCC*** as the key value metric of WCM.	This finding also supports the view of Richards & Laughlin (1980) who advocated the CCC as a comprehensive measure of WCM. Gitman (1974) also considered the CCC as a key factor in WCM, because it takes into account all components of WCM.

	F) Cash management (mean value= 3.6803) is the most important component in the overall management of working capital followed by inventory management (mean value= 3.3903), receivable management (mean value = 2.9368) and payable management (mean value= 2.4610).	The results of this study support the arguments of Chang & Chang (1986) who reported that cash management is the most important component of financial management and the primary reason for small business failure. SMEs pay more attention to cash management because it helps in maintaining optimal cash balance.
1 (b) What are the contemporary practices and techniques adopted by SMEs for Cash Management?	A) Results of this study shows that 81.1% (n=220) of the firms regularly prepare a cash budget to monitor cash inflows and outflows.	Higher reliance on cash budgeting in SMEs is due to the advantages provided by it. Preparation of a regular cash budget helps firms to determine whether they have the required cash balance to meet their short-term obligations. It is also very helpful in reduction of working capital requirements by providing information about the excessive cash maintained by a firm that could be otherwise used in productive activities and investments

	B) SMEs mainly focus on approaches like centralized cash management and maintaining emergency liquidity reserve for proper management of cash in the organizational context. On the contrary, SMEs in the sample do not extensively use methods such as bank diversification, float minimization, managing cash through netting.	The centralized management of cash is very helpful in managing cash tightly. Centralization makes the process of cash management more transparent and controllable due to the involvement of one individual/group responsible for all cash-related activity.
1(c) What are the contemporary practices and techniques adopted by SMEs for inventory management	A) Finding of this study indicates that material requirement planning (mean value = 3.0743) is the most popular technique in inventory management in SMEs in India followed by sales forecasting.	A higher reliance on MRP in SMEs is due to the advantages provided by it. A proper MRP system helps firms to have the right quantity of raw material for production.
	B) Results for this study indicate that the ***'quality of product'*** is the most important factor in the purchasing decision of SMEs followed by ***'credit term offered by suppliers'***	Quality of material is the most important factor in the purchase decision of micro, small, and medium firms irrespective of their size. SMEs also having a financial constraint that is why they also prefer those suppliers who provide credit facility for longer period of times.

1 (d) What are the contemporary practices and techniques adopted by SMEs for receivable and payable management?	A) Results of this study indicates that 60.2% of the SMEs have a bad debt level of <1% of their credit sales, which shows that credit management is efficient in these SMEs.	These results are in contrast with the argument of Atrill (2006) who advocated that due to limited resources and non-existence of the credit control department, SMEs lack in efficiency of managing receivables. A lower bad debt level in Indian SMEs is mainly due to the conservative approach of Indian owners/managers, which make them more cautious towards granting credit to customers.
	B) The results shows that SMEs mainly employ ***'verbal or written request'*** *and* ***NEFT/RTGS*** to accelerate receivable collections. The results also indicates that Indian firms also primarily rely on the *maximum use of credit limit* and *centralized payments* to delay the payment of accounts payable	The use of NEFT/RTGS for cash transaction helps in reducing float time in payment and subsequently speeds up receivable collection.
2. Do fundamental characteristics of firm affects the WCM practices of SMEs	A) The findings of this study make it conclusive that these fundamental factors have a bearing on overall WCM practices and related to its	

	components. It is noted that firm-specific factors have a greater impact on WCM practices, especially firm size.	
	B) SMEs related to working capital financing as old firms are more likely to depend on ***suppliers' credit*** as compared to their younger counterparts.	These old firms have a relatively longer relationship with suppliers, which help them to get these credits easily
	C) Financial performance of SMEs also affects their cash management and inventory management approach. It is found that good performing firms rely more on leading and lagging approach for cash management and MRP and sales forecasting for inventory management as compare to poor performing firms.	A proper MRP system helps firms to have the right quantity of raw material for production. It also ensures a reduction in the production cost and increase in the profit. Because of this reason good performing firms focus more on MRP and sales forecasting.
3. Do owner characteristics affect the WCM practices of SMEs?	A) The results of this study show that the effects of owner-specific factors on WCM practices are moderate. These factors primarily affect the working capital financing of SMEs.	The age, experience, gender and education of SMEs owners affects their risk perception and subsequently their preference for different sources for working capital financing.
4. Are SME owners prone to behavioural biases?	A) The results of this study show that SME owners are generally prone to f	These finding are in line with previous study of Zhao (2011) who also found that

	overconfidence bias, self attribution bias, loss aversion bias. In addition to that it is also found that they are not in general prone to anchoring bias as only 16.7% of SME owners exhibited this bias in their decision making.	corporate treasurer are not fully rational and they exhibit behavioral biases in their decision making.
5. Is their tendency to exhibit behavioural biases affected by their demographic characteristics?	A) The results of this study suggest that demographic characteristics of SMEs owners significantly affect their tendency to exhibit behavioural biases. It is found that Age and experience of SME owners significantly affect their tendency to exhibit self attribution, loss aversion and overconfidence bias while education only affects the tendency of exhibiting anchoring bias.	
6.Do various behavioural biases affect the WCM practices of SMEs	Behavioural biases affect the WCM practices of SMEs. Overconfident SMEs owner differ from other owners in terms of working capital financing as well as cash management.SME owners with anchoring bias attach more importance to external factors in terms of cash management	

7. What are the factors that determine the working capital requirements of SMEs	The overall results of the study indicate that profitability measured by ROA and sales growth positively affects the WCRs and operating cash flow, asset tangibility, and leverage negatively affect the WCRs in Indian SMEs. In the case of firm size and firm age, we did not find any significant effect on WCR	Our findings on these relationships are partly consistent with those in the previous literature (Chiou *et al*., 2006; Nazir & Afza, 2009; Banos-Caballero *et al*., 2010; Mansoori & Muhammad, 2012; Valipour *et al*., 2012; Akinlo, 2012). Some of the findings of this study are contradictory to the findings of earlier studies. This contradiction is because all studies except that of Banos-Caballero *et al*. (2010) used a sample of large firms to analyse the determinants of WCR. These conflicting results therefore provide scope for future research in the case of small firms.

8.3 SUGGESTIONS AND DIRECTION FOR FUTURE RESEARCH

8.3.1 Suggestions

This section mainly outlines the suggestions to SME sector as to how these firms can improve the efficiency of WCM in organizational context. Apart from the SME sector, some suggestions are directed to the government and its different ministries to assist it in its efforts to improve performance SME sector in India. Based on the results, this study made the following suggestions:

1. It is conclusive in the literature that effective WCM is vital for improving the financial performance of business of all size. However, this research found that focus of SME on WCM is limited and almost one third of films in the sample do not have any type of policy (either formal or informal) for WCM. Thus it is essential for SME owners to improve the focus on WCM and should have a proper WCM policy which outlines the procedure related to credit sales, credit standard, receivable collection approach, inventory levels, criteria for inventory purchase and cash budgeting.
2. In today's competitive and ever-changing environment, it is very important for business firms to keep a regular check on business activities. In this research it is found that SMEs do not regularly review the WCM policy rather they employ a contingent approach for WCM. Thus it is suggested that SME should regularly review the WCM policy on a periodic basis so that it can be adjusted to incorporate changes in the business environment.
3. Regular monitoring of investment in working capital is very important to reduce the fund tied up in working capital. Thus SMEs are suggested to monitor the investment in working capital on a regular basis. In addition to that SMEs are advised to use CCC for managing and monitoring the efficiency of WCM as it is a comprehensive measure of WCM and include all the components of WCM.
4. Many business organizations always attempt to remain competitive in their respective industries. This competitiveness can be achieved by adopting cost effective and highly reliable strategies for different business processes. SMEs can gain competitive advantages by employing technology in WCM. In SMEs WCM is traditionally managed and use of ERP and computerized inventory control system is limited. Thus it is recommended for SMEs to implement

computerized system for inventory management so that a proper record of inflows and outflow of inventory can be monitored and optimum level of inventory can be maintained.

5. The results of this study indicate that in terms of financing, SME owners have a lower preference for government sponsored financing schemes for their funding needs. Lack of knowledge about the policies and procedures of these financing schemes is one of the primary reasons why small businesses are reluctant to avail funding under these schemes. Thus it is very important for Ministry of Micro Small and Medium Enterprises to increase the awareness and knowledge about the procedure and requirements of funding under these schemes among the SME owners.
6. This study also advocates that micro, small and medium organizations are significantly differ from each others in terms of WCM practices and financing. Thus it is advised to The Ministry of Micro Small and Medium Enterprises to have different financing schemes for micro firms.
7. There is need for small business owners to know and understand basic accounting and finance as these are some of the crucial areas in the operation of a business. Without financing and accounting basics, business people are bound to make uncalculated financial decisions which might be detrimental to the firm. It is important for the owners to understand the basics because the majority is not able to employ qualified personnel or hire personnel from professional bodies due to limitations in funds. To improve the financial and accounting knowledge, these small business owners should attend short courses that are offered to small business owners. The government can also come up with plans to offer financial management training to small business owners. These will assist in development of small business owners and improve their business performance.

8.3.2 Direction for Future Research

The present Study focuses on documenting the contemporary practices adopted by SMEs in India related to WCM and its components. This study also highlighted some important findings related to effect of behavioural biases on WCM decision making. However, there are few limitations of the present study which provides the scope for future research. The limitations of this study are listed below.

- The presented study only focuses on manufacturing SMEs because WCM decisions are relatively of higher importance in these manufacturing firms. Thus, the findings of this study cannot be accurately generalised to service SME. Therefore, a future study, involving service SME is needed to identify the similarity and difference between the WCM practices of manufacturing and service SMEs.
- The presented study is undertaken in the state of Rajasthan due to which generalization of empirical finding to whole of India need caution. Thus, a study is required in future which can cover other major states like Maharashtra, Gujarat, and Tamilnadu so that findings can be generalised to the large.
- This study tested the propensity of SMEs owners to exhibit self attribution bias, overconfidence bias, loss aversion bias and anchoring bias. However, behavioural finance literature advocated a long list of biases including confirmation bias, optimism bias, herding bias etc. Thus a future study is needed which can incorporate these additional bias and assess the effect of these biases on WCM decisions.
- This study provides the empirical finding on aggregate basis about the manufacturing SMEs. Thus to understand the WCM practices more precisely, an industry specific future study is needed.

8.4 CONTRIBUTIONS OF THESIS

This study contributes significantly to both theory and practice. This study not only makes several new contributions but it is also an extension to the extant literature on WCM practices. This study makes the following contributions:

8.4.1 Contributions to the Body of Knowledge

- This study is probably the first to capture the WCM practices of SMEs in the Indian context. Thus, it contributes to the WCM literature by filling the gap.
- This study also assesses the determinants of working capital requirements of SMEs in the Indian context that have not been documented in the literature.
- It also provides new empirical evidence of the effect of a firm's characteristics and owner/manager characteristics on WCM practices in Indian context.

- This study contributes to the behavioural finance literature. Behavioural finance suggests that professionals are prone to various heuristic-driven biases (Kumar, 2009; Tversky & Kahneman, 1974); thus, this study updates the literature by (1) testing the propensity of SME owners to fall a prey to self-attribution bias, overconfidence bias, anchoring bias and loss aversion bias and (2) determining how these biases affect the WCM decision making of SME owners.

8.4.2 Contributions to Policy Making

- With respect to practical contribution, the findings of this study would also be helpful to government agencies, namely, the Ministry of MSMEs for policy making purpose. The present study highlights the differences in the practices of MSMEs with respect to WCM which is very useful for policy makers to best suit the need of MSMEs in terms of financing and other organizational support. Similarly, for practitioners, the findings of this study will serve as a benchmark for policy formulation related to WCM.
- This study may also be helpful for policy maker and practitioner as it identify the practices of profitable firm in managing Working capital thus by adopting these practices low performing firms can improve their performance.

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ANNEXURE-1: RESEARCH QUESTIONNAIRE

Malaviya National Institute of Technology Jaipur
J.L.N. Marg Jaipur-302017
Department of Management Studies

Questionnaire Cover Letter

Dear Sir/Madam,

We at Department of Management Studies, Malaviya National Institute of Technology (MNIT) Jaipur are conducting a research study on "Working Capital Management Practices: A Study of Small and Medium Enterprises (SMEs)". The main objective of this research is to understand the working capital management practices of SMEs in India.

We have approached you because you have held positions such as owner of firm, finance manager, accountant or similar experiences. If you are not the right person to fill this questionnaire, we will be grateful if you could forward this questionnaire to the relevant person.

We therefore request your response to the survey. Your response will enhance the reliability of the findings of this research. The validity of the questions will increase if all questions are answered completely and accurately. In return for your participation, I undertake to respect strictly your anonymity by using your responses only as statistical data for the research. You will not be identified at any stage of the analysis, nor in the publication of the results. The questionnaire should only take a short time to fill in, but your answers will be extremely valuable to the research project.

Sincerely

Harsh Pratap Singh
Research Scholar

SURVEY ON WORKING CAPITAL MANAGEMENT PRACTICES OF SMEs

Section -1

1. Please fill one square from each category that best describes you.

a. Gender
- ☐ Male
- ☐ Female

b. Your Age
- ☐ Less than 30 years
- ☐ Between 30 to 40 Years
- ☐ Between 41 to 50 Years
- ☐ Between 51 to 60 Years
- ☐ More than 60 Years

c. Education
- ☐ Up to intermediate or diploma
- ☐ Undergraduate
- ☐ Post Graduate
- ☐ CFA/CA/ICWA/CS
- ☐ Doctorate
- ☐ Any other(please specify_____

d. Experience
- ☐ Less than 5 years
- ☐ 5 to 10 years
- ☐ 10 to 20 years
- ☐ 20 years and above

e. Position in the firm
- ☐ Owner
- ☐ Finance Manager
- ☐ Any Other___

2. Please fill one square from each category that best describes your organization.

a. Ownership structure of enterprise
- ☐ Sole proprietorship
- ☐ Partnership
- ☐ Co-Operative
- ☐ Private Limited company
- ☐ Limited Liability Partnership
- ☐ Trust
- ☐ Any other(please specify_____

b. Year of incorporation

_____

c. Industry type
- ☐ Chemical, Rubber and Plastic
- ☐ Agro, Food and Beverages
- ☐ Jewellery & Gems
- ☐ Leather, Garments and Textile
- ☐ Metal Products
- ☐ Printing and Paper Products
- ☐ Pottery and Ceramics
- ☐ Wood and Furniture
- ☐ Marbles and Stone
- ☐ Cement
- ☐ Healthcare and Pharmaceutical
- ☐ Engineering Equipment
- ☐ Any other (please specify_____)

d. Debt as a percentage of total assets
- ☐ less than 10 %
- ☐ 10% to 25%
- ☐ 25% to 50%
- ☐ more than 50%

e. Size by annual revenue(Sales)
- ☐ Less than 1 crore Rs.
- ☐ 1crore to 5 Crore Rs.
- ☐ 5 Crore to 10 Crore Rs.
- ☐ 10 Crore to 15 crore Rs
- ☐ 15 Crore to 20 Croer Rs
- ☐ 20 Crore to 25 Croer Rs
- ☐ 25 Crore to 30 Croer Rs
- ☐ 30 Crore Rs.and above

f. Foreign sales (as a percentage of total sales)
- ☐ 0%
- ☐ 1-25%
- ☐ 25-50%
- ☐ ≥ 50%

g. Average profit of your firm for last 3 years has been
- ☐ Increased
- ☐ Decreased

h. Size of your firm as per the classification scheme of ministry of micro small and medium enterprises
- ☐ Micro
- ☐ Small
- ☐ Medium

Section: 2

3. Which of the following policies best describe your company financing?

- ☐ Moderate: Match the maturity of finance with maturity of assets
- ☐ Aggressive: Use short term financing to finance permanent assets
- ☐ Conservative: Use long term financing for both permanent assets and temporary assets

4. Does your firm have an overall policy for the management of its working capital?

☐ Formal policy ☐ Informal policy ☐ No policy

5. Who set the working capital policy (if any) for your firm?

☐ Owner ☐ Finance Manager ☐ Working Capital Manager ☐ Any Other

6. How often is the working capital policy (if any) reviewed in for your firm?

☐ Weakly ☐ Monthly ☐ Quarterly ☐ Annually ☐ Whenever necessary ☐ Never

7. Rate the following sources of finance as per preference for working capital financing in your firm.

	Not at all preferred	**Somewhat preferred**	**Moderately preferred**	**Highly Preferred**	**Extremely preferred**
	1	**2**	**3**	**4**	**5**
a. Retained Profits	☐	☐	☐	☐	☐
b. Bank overdrafts/Cash Credit	☐	☐	☐	☐	☐
c. Short term Bank Loans	☐	☐	☐	☐	☐
d. Suppliers Credit	☐	☐	☐	☐	☐
e. Factoring	☐	☐	☐	☐	☐
f. Loan From Family members	☐	☐	☐	☐	☐
g. Loan From Money lenders	☐	☐	☐	☐	☐
h. Government Sponsored Schemes	☐	☐	☐	☐	☐
i. Advance from buyers	☐	☐	☐	☐	☐
j. Letter of Credit	☐	☐	☐	☐	☐
k. Any other(Please specify)	☐	☐	☐	☐	☐

8. Does your firm monitor efficiency of working capital management in your firm?

☐ Yes ☐ No

9. In monitoring and managing the working capital of your firm, which of the following measures do you find useful?
*** Please make more than one selection if applicable**

a. Return on investments ☐
b. Net working capital ☐
c. Cash conversion cycle ☐
d. Current ratio ☐
e. Working capital turnover ☐
f. Any other (Please specify) ☐

---

10. Please rate the following components of working capital as per heir importance in WCM of your firm

	Not at all important 1	Somewhat important 2	Moderately important 3	Highly important 4	Extremely important 5
a. Cash management	☐	☐	☐	☐	☐
b. Inventory management	☐	☐	☐	☐	☐
c. Receivable management	☐	☐	☐	☐	☐
d. Payable management	☐	☐	☐	☐	☐

11. Does you prepare cash budget in your firm?

☐ Yes ☐ No

12. What is the shortest interval of time for which your firm utilizes cash budget (if any)?

☐ Daily ☐ Weekly
☐ Monthly ☐ Quarterly
☐ Semi Annually ☐ Annually

13. Please indicate the cash management approach used by your company.
*** Please make more than one selection if applicable**

a. Managing cash through netting ☐
b. Centralization of cash management decisions ☐
c. Meet payment in a timely manner ☐
d. Diversification of banks ☐
e. Minimize float ☐
f. Emergency liquidity reserves ☐
g. Management cash through leading and lagging ☐
h. Any other (Please specify) ☐

14. How often does your firm face the following situations?

	Very Rarely	Rarely	Sometime	Often	Very Often
a. Cash Shortage	□	□	□	□	□
b. Cash Surplus	□	□	□	□	□
c. Payment of suppliers on time	□	□	□	□	□
d. Customers pay on time	□	□	□	□	□

15. Rate the following factors in terms of their effect on cash management of your firm.

	Not at all 1	Somewhat 2	Moderate 3	High 4	Extreme 5
a. Currency exchange rate	□	□	□	□	□
b. Level of inflation	□	□	□	□	□
c. Interest rate	□	□	□	□	□
d. Financial and banking environment	□	□	□	□	□
e. Market condition	□	□	□	□	□
f. Overall economic environment(GDP)	□	□	□	□	□
g. Any other (Please specify)	□	□	□	□	□

16. Does you firm deals with inventory management?

□ Yes □ No

17. Which of the following describe your purpose of inventory management?
(Please make more than one Selection if applicable)

□ Take advantage of economies of scale
□ Meet seasonal high demand
□ Reduce holding cost
□ Safeguard against wastages
□ Safeguard against shortages
□ Any other (Please specify)

18. Rate the importance of following approaches of inventory management in your firm.

	Not at all important 1	Somewhat important 2	Moderately important 3	Highly important 4	Extremely important 5
a. Material requirement planning	□	□	□	□	□
b. Inventory models (EOQ)	□	□	□	□	□
c. ERP system	□	□	□	□	□
d. Just-in-time	□	□	□	□	□
e. Supply chain management	□	□	□	□	□
f. Sales forecasting	□	□	□	□	□
g. Any other (Please specify)	□	□	□	□	□

19. Rate the importance of following factors as per you're considered in purchasing inventory for your firm.

		Not at all important 1	Somewhat important 2	Moderately important 3	Highly important 4	Extremely important 5
a.	Price discount	□	□	□	□	□
b.	Seasonal Availability	□	□	□	□	□
c.	Credit term offered by suppliers	□	□	□	□	□
d.	Shortage cost	□	□	□	□	□
e.	Storage cost	□	□	□	□	□
f.	Any other (Please specify)	□	□	□	□	□

20. With respect to managing INVENTORY, how do you decide on the appropriate amounts to replenish your warehouses?

- □ Ad hoc decisions
- □ Cost balancing models
- □ Industry guidelines
- □ Computerized inventory control systems
- □ Maintenance of stock register

21. Please indicate credit sales as a percentage of total sales.

□ 0% □ Up to 20% □ 20% to 40% □ 40% to 60% □ 60% to 80% □ More than 80%

22. Rate the following factors in terms of their consideration for using credit sales rather than cash?

		Not at all considered 1	Somewhat considered 2	Moderately considered 3	Highly considered 4	Extremely considered 5
a.	Improved customer loyalty	□	□	□	□	□
b.	Increased Sales	□	□	□	□	□
c.	Increased financial reputation	□	□	□	□	□
d.	Competitive Pressure	□	□	□	□	□
e.	Any other (Please specify)	□	□	□	□	□

23. Does you carry out any formal credit appraisal of customers before selling goods on credit?

□ Yes □ No

24. Rate the importance of following mode of credit investigation in term of their applicability in investigating prospective credit customer in your firm.

	Not at all important 1	Somewhat important 2	Moderately important 3	Highly important 4	Extremely important 5
a. Customers past records from other business firm	□	□	□	□	□
b. Customers past financial dealing with the company	□	□	□	□	□
c. Customers bank reference	□	□	□	□	□
d. Credit rating of firm	□	□	□	□	□
e. Market reputation f. Part Payment In advance	□	□	□	□	□
g. Any other (Please specify)_____	□	□	□	□	□

25 What is the average bad-debt level in your firm as a percentage of total account receivables?

□ Less than 1% □ 1%-2% □ 3%-4% □ 5% and above

26. Please rate the methods used in your firm to speed up the collection of accounts receivable.

	Not at all used 1	Somewhat used 2	Moderately used 3	Highly used 4	Extremely used 5
a. Special handling of large remittance	□	□	□	□	□
b. Verbal & written request	□	□	□	□	□
c. Bank Diversification	□	□	□	□	□
d. Cash discount	□	□	□	□	□
e. RTGS/NEFT	□	□	□	□	□
f. Personal Visits	□	□	□	□	□
g. Any other (please specify)	□	□	□	□	□

27. Please rate the importance of following technique methods used in your firm to delay the payment of accounts receivable.

	Not at all used 1	Somewhat used 2	Moderately used 3	Highly used 4	Extremely used 5
a. Centralized payables	□	□	□	□	□
b. Payable through draft/Cheque	□	□	□	□	□
c. Disbursing from remote geographical location	□	□	□	□	□
d. Maximum utilization of credit limit	□	□	□	□	□
e. Any other (Please specify)	□	□	□	□	□

Section-3

28. When your firm is in financial distress to what extent do you blame any of the following?

		Not at all	Somewhat	Moderately	Highly	Extremely
a)	Your own financial policy	□ 1	□ 2	□ 3	□ 4	□ 5
b)	The economic environment	□ 1	□ 2	□ 3	□ 4	□ 5

29. Assuming you have made credit sales to low credit rated company A, and it has paid on time, what is the likely you would:

		Not at all likely	Somewhat likely	Moderately likely	Highly likely	Extremely likely
a.	Make credit sales to Company A in the future?	□ 1	□ 2	□ 3	□ 4	□ 5
b.	Make credit sales to another low rated company B in the future?	□ 1	□ 2	□ 3	□ 4	□ 5

30. How disappointed would you feel if you have total bad debts of?

		Not at all disappointed	Somewhat disappointed	Moderately disappointed	Highly disappointed	Extremely disappointed
a.	5% of your sales revenue	□ 1	□ 2	□ 3	□ 4	□ 5
b.	10% of your sales revenue	□ 1	□ 2	□ 3	□ 4	□ 5

31. How confident are you in your cash management decisions when your firm's performance is strong?

Not at all confident	Somewhat confident	Moderately confident	Highly Confident	Extremely Confident
□ 1	□ 2	□ 3	□ 4	□ 5

32. In times of good financial performance to what extent do you think the following factors have contributed?

		Not at all	Somewhat	Moderately	Highly	Extremely
c)	Your own financial policy	□ 1	□ 2	□ 3	□ 4	□ 5
d)	The economic environment	□ 1	□ 2	□ 3	□ 4	□ 5

33. How satisfied would you be with an annual profit of?

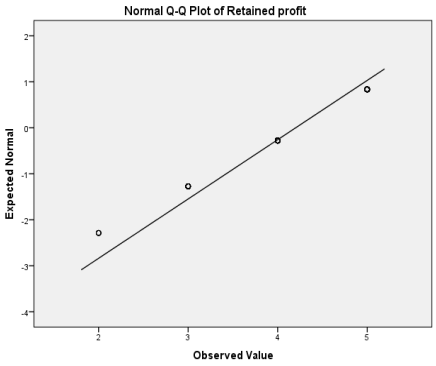
		Not at all satisfied	Somewhat satisfied	Moderately satisfied	Highly satisfied	Extremely Satisfied
c.	5% of your sales revenue	□ 1	□ 2	□ 3	□ 4	□ 5
d.	10% of your sales revenue	□ 1	□ 2	□ 3	□ 4	□ 5

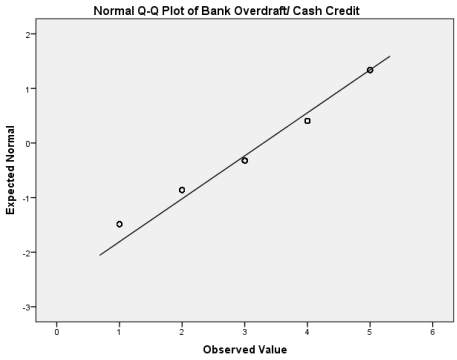
34. How confident are you in cash management decisions when your firm's performance is poor?

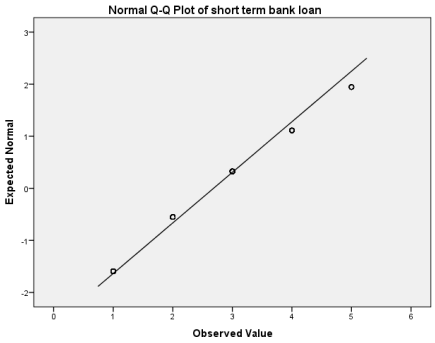
Not at all confident	Somewhat confident	Moderately confident	Highly Confident	Extremely Confident
□ 1	□ 2	□ 3	□ 4	□ 5

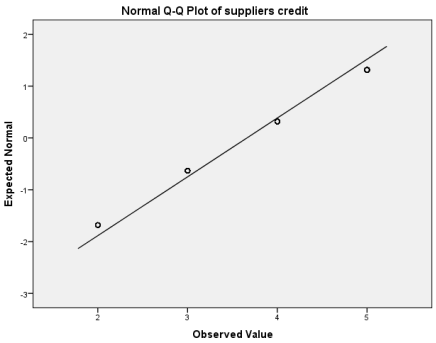
ANNEXURE-2: NORMAL Q-Q PLOT FOR RESEARCH VARIABLES

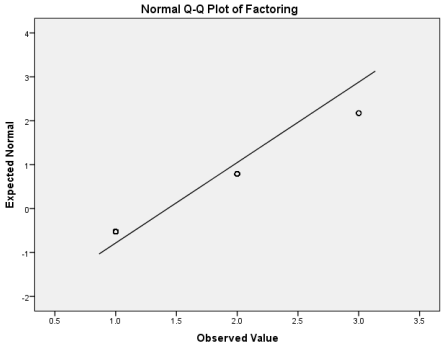
Following figures show the normal Q-Q plot for the all the research variables measured on a 5 point Likert type scale

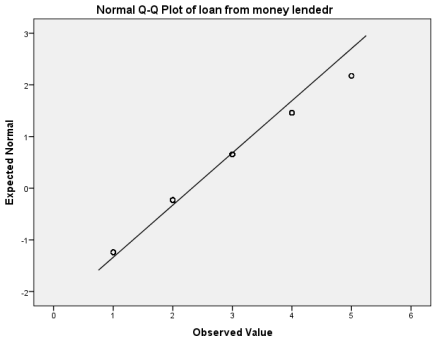


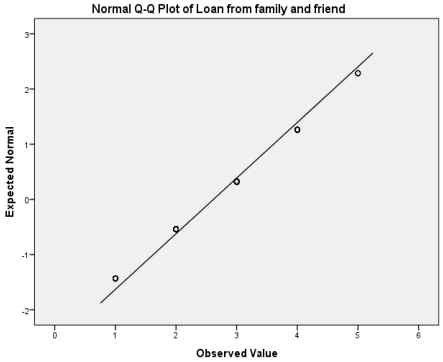


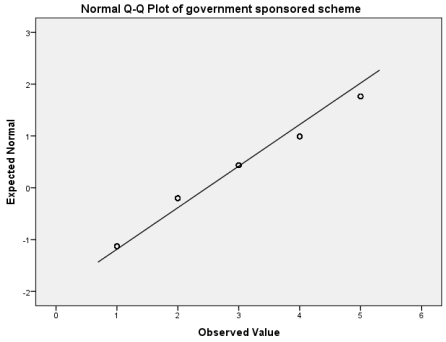


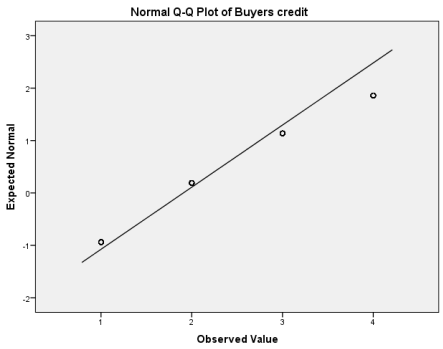


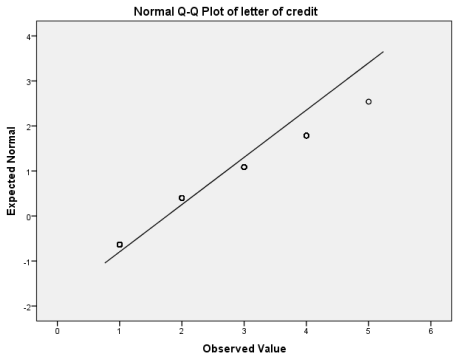


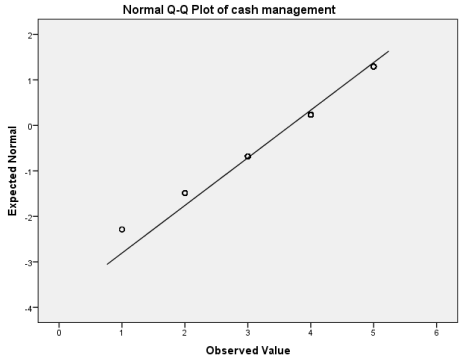


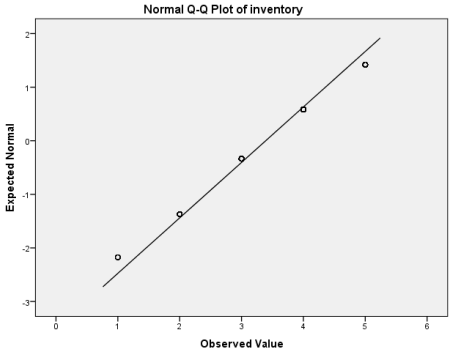


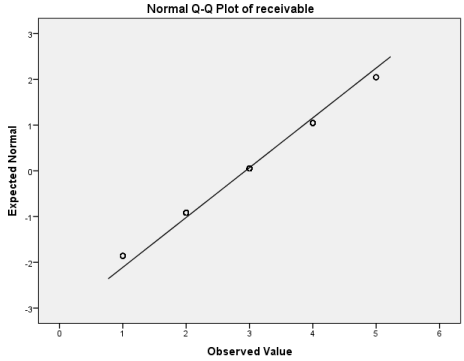


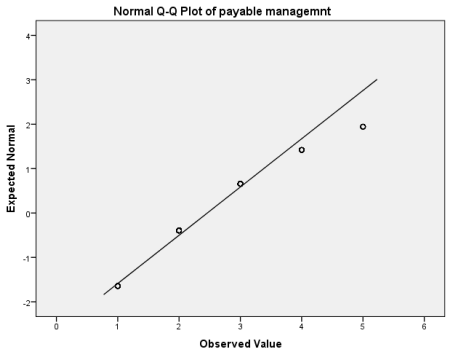

Normal Q-Q Plot of Buyers credit
Expected Normal
Observed Value

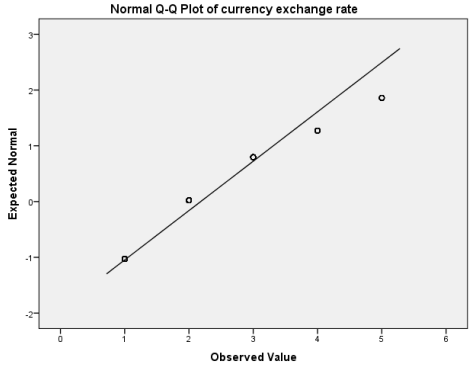

Normal Q-Q Plot of letter of credit
Expected Normal
Observed Value

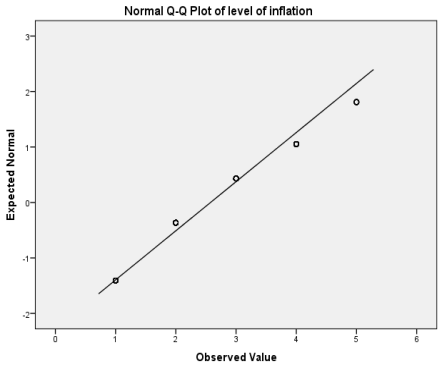

Normal Q-Q Plot of cash management
Expected Normal
Observed Value

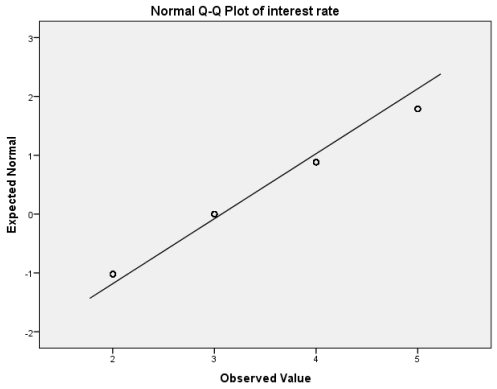

Normal Q-Q Plot of inventory
Expected Normal
Observed Value

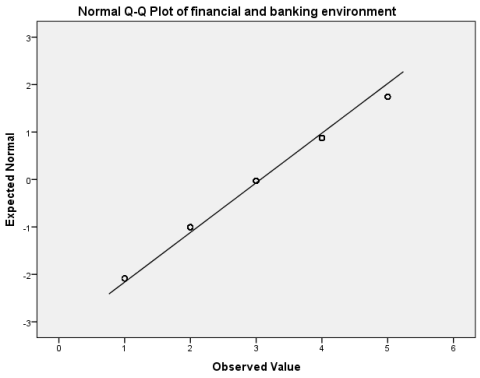

Normal Q-Q Plot of receivable
Expected Normal
Observed Value

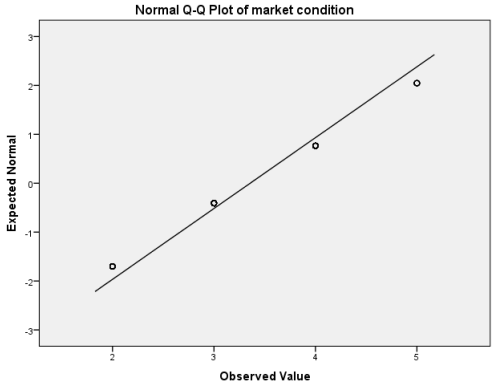

Normal Q-Q Plot of payable managemnt
Expected Normal
Observed Value

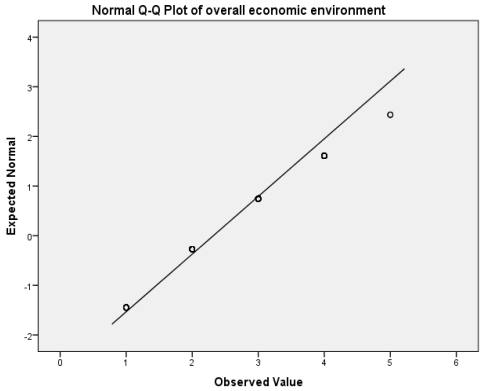

Normal Q-Q Plot of currency exchange rate
Expected Normal
Observed Value


Normal Q-Q Plot of level of inflation
Expected Normal
Observed Value


Normal Q-Q Plot of interest rate
Expected Normal
Observed Value


Normal Q-Q Plot of financial and banking environment
Expected Normal
Observed Value


Normal Q-Q Plot of market condition
Expected Normal
Observed Value


Normal Q-Q Plot of overall economic environment
Expected Normal
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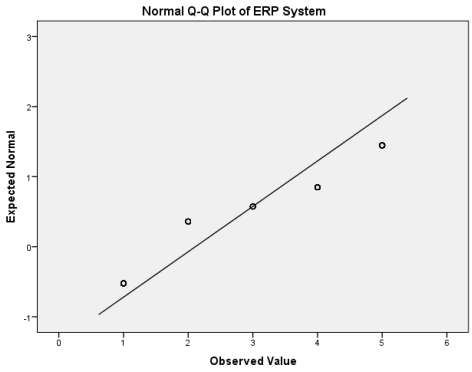
Normal Q-Q Plot of ERP System
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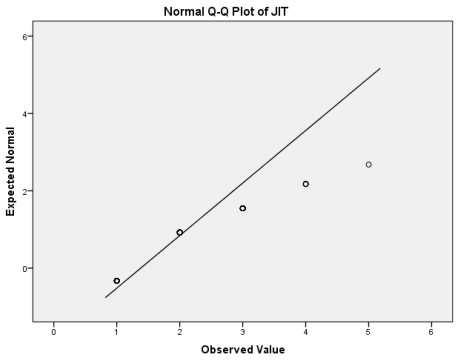
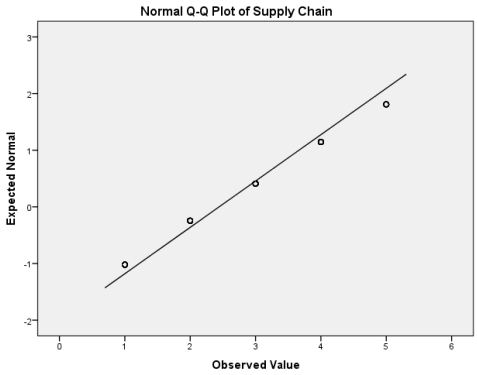
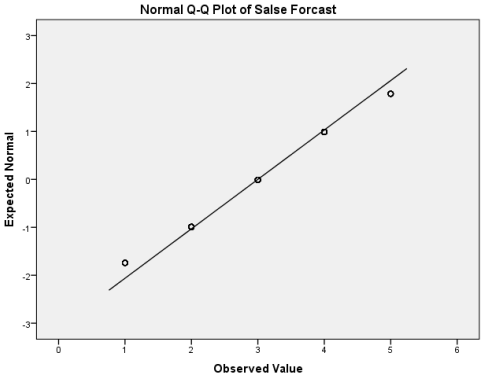
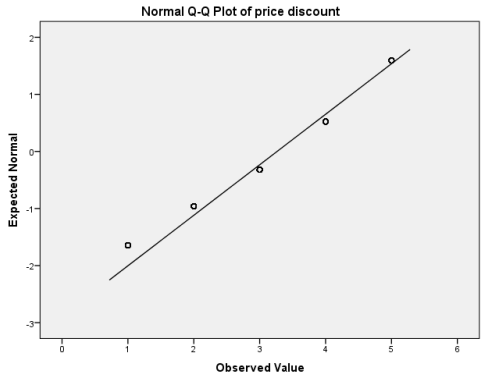
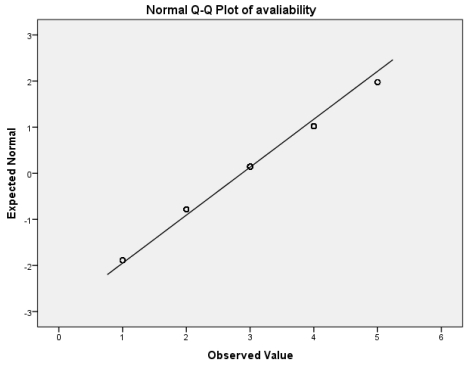

Normal Q-Q Plot of JIT
Expected Normal
Observed Value


Normal Q-Q Plot of Supply Chain
Expected Normal
Observed Value


Normal Q-Q Plot of Salse Forcast
Expected Normal
Observed Value


Normal Q-Q Plot of price discount
Expected Normal
Observed Value


Normal Q-Q Plot of avaliability
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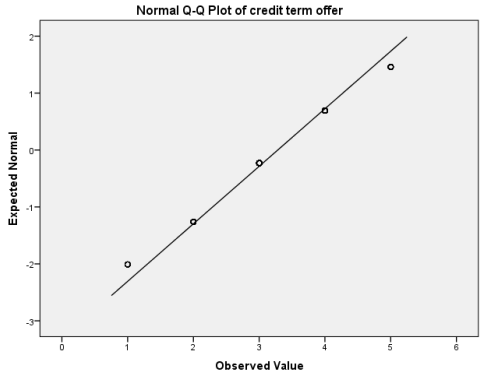
Normal Q-Q Plot of credit term offer
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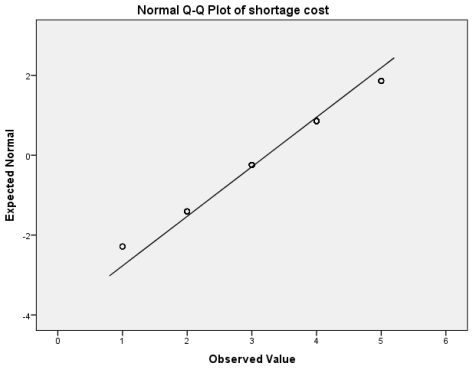
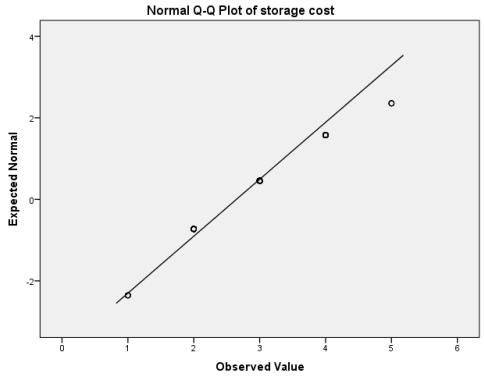
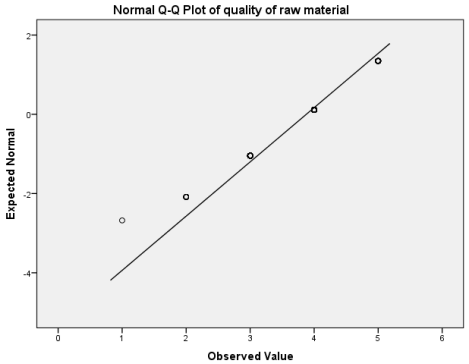

Normal Q-Q Plot of shortage cost
Expected Normal
Observed Value


Normal Q-Q Plot of storage cost
Expected Normal
Observed Value


Normal Q-Q Plot of quality of raw material
Expected Normal
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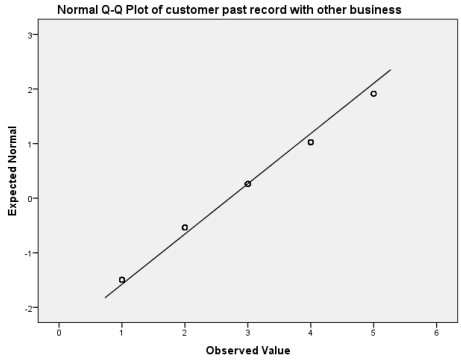
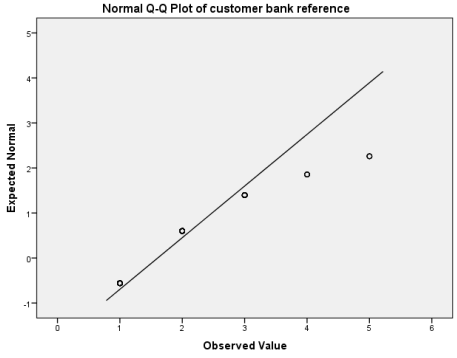
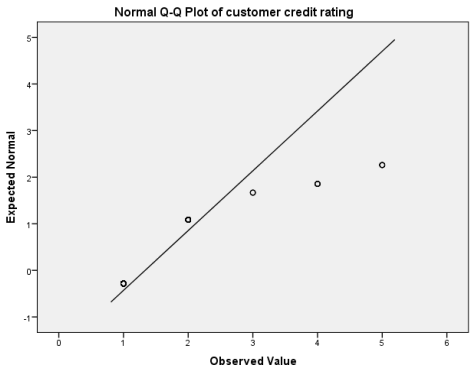
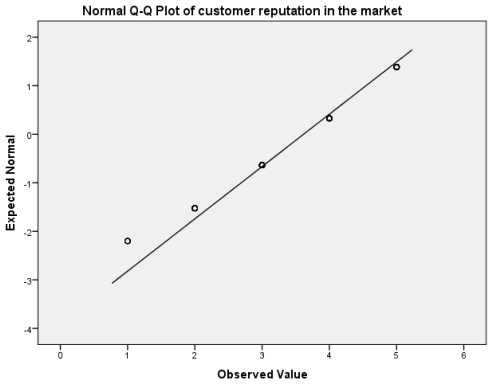
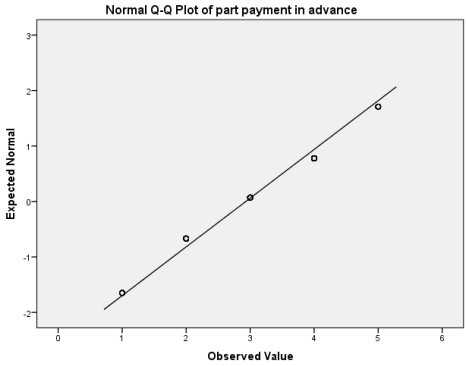
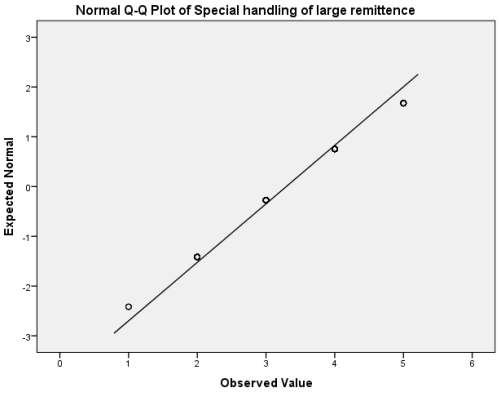

Normal Q-Q Plot of customer past record with other business
Expected Normal
Observed Value

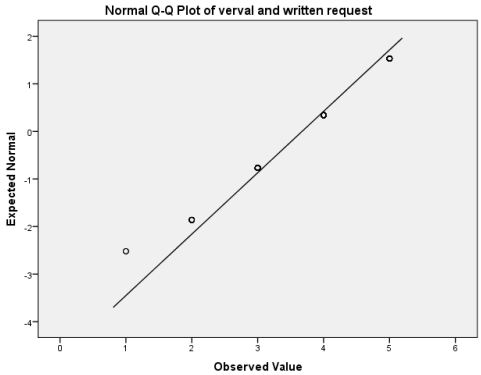

Normal Q-Q Plot of customer bank reference
Expected Normal
Observed Value

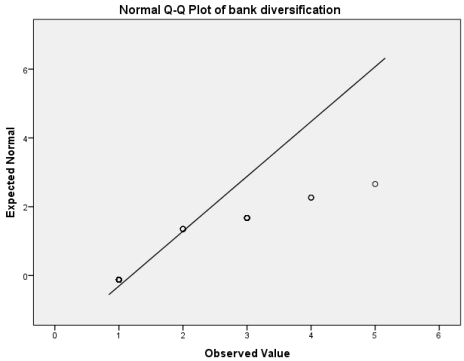

Normal Q-Q Plot of customer credit rating
Expected Normal
Observed Value

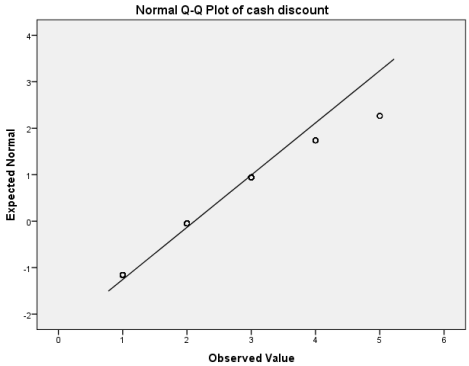

Normal Q-Q Plot of customer reputation in the market
Expected Normal
Observed Value

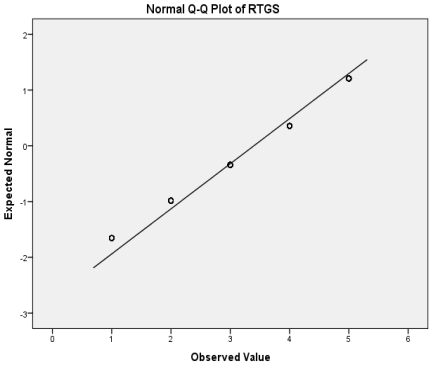

Normal Q-Q Plot of part payment in advance
Expected Normal
Observed Value

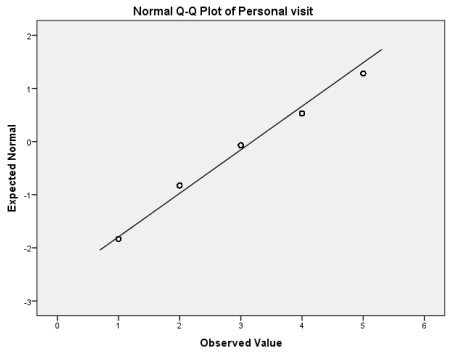

Normal Q-Q Plot of Special handling of large remittence
Expected Normal
Observed Value

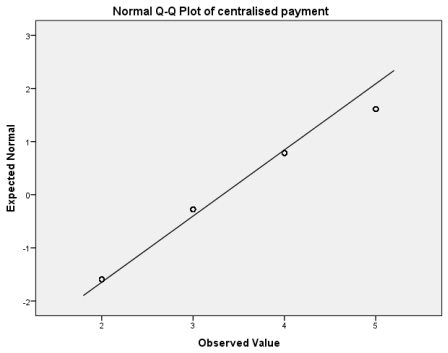

Normal Q-Q Plot of verval and written request
Expected Normal
Observed Value

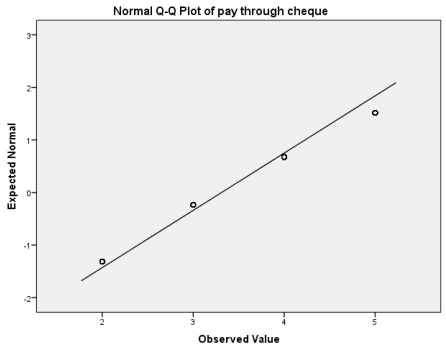

Normal Q-Q Plot of bank diversification
Expected Normal
Observed Value

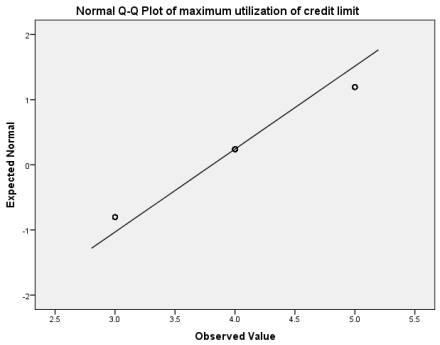

Normal Q-Q Plot of cash discount
Expected Normal
Observed Value

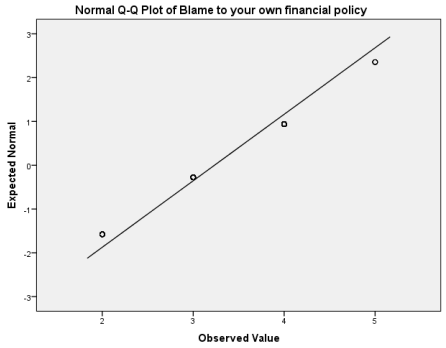

Normal Q-Q Plot of RTGS
Expected Normal
Observed Value

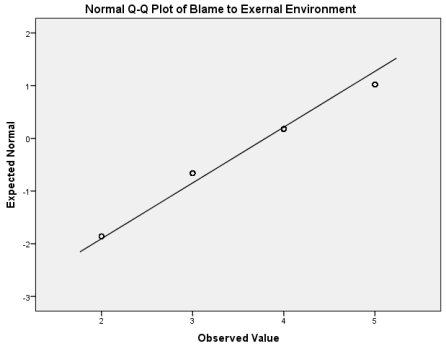

Normal Q-Q Plot of Personal visit
Expected Normal
Observed Value

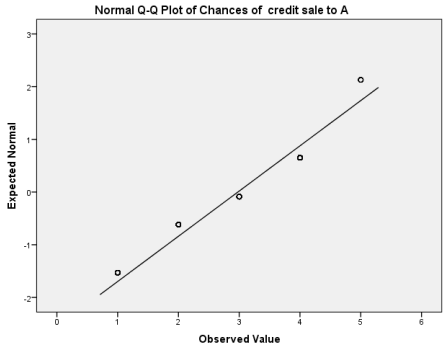

Normal Q-Q Plot of centralised payment
Expected Normal
Observed Value

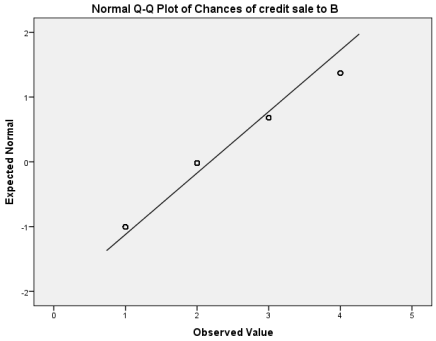

Normal Q-Q Plot of pay through cheque
Expected Normal
Observed Value

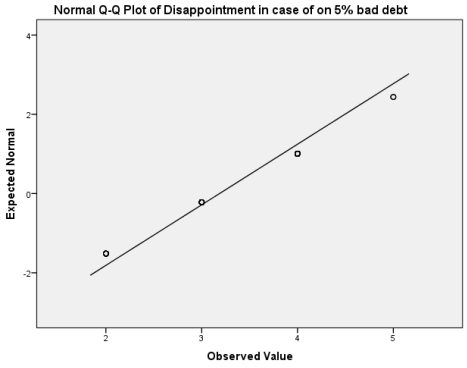

Normal Q-Q Plot of maximum utilization of credit limit
Expected Normal
Observed Value

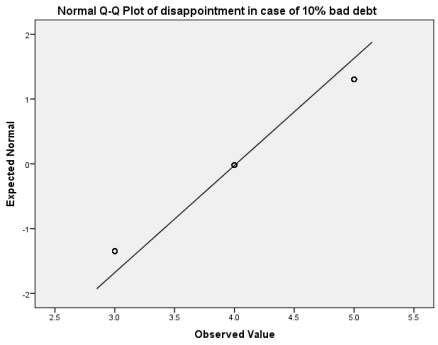

Normal Q-Q Plot of Blame to your own financial policy
Expected Normal
Observed Value

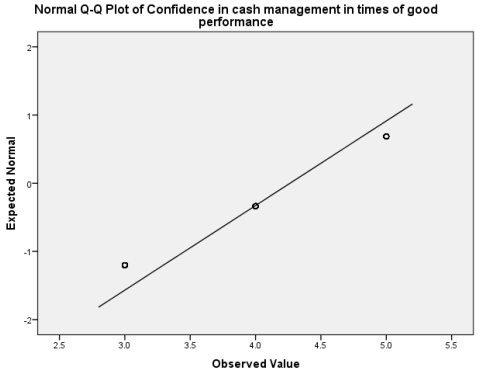

Normal Q-Q Plot of Blame to Exernal Environment
Expected Normal
Observed Value

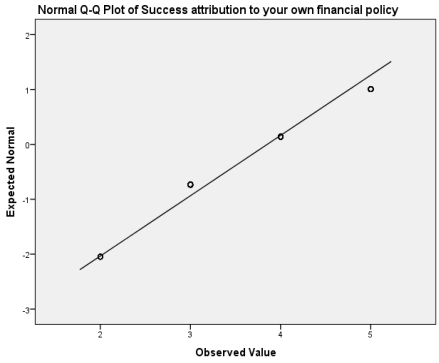

Normal Q-Q Plot of Chances of credit sale to A
Expected Normal
Observed Value

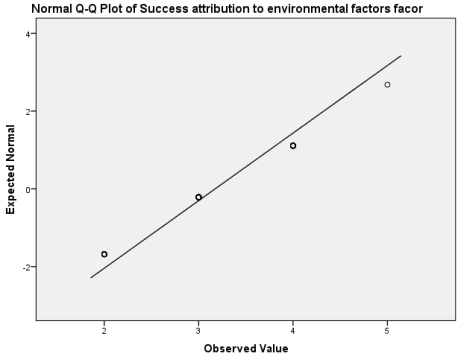

Normal Q-Q Plot of Chances of credit sale to B
Expected Normal
Observed Value

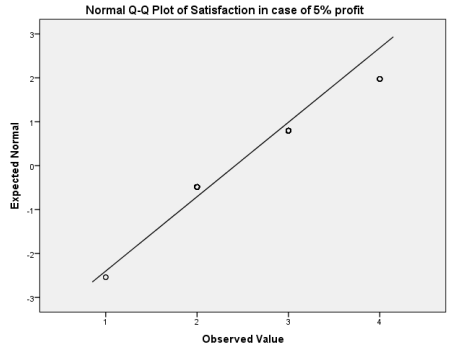

Normal Q-Q Plot of Disappointment in case of on 5% bad debt
Expected Normal
Observed Value

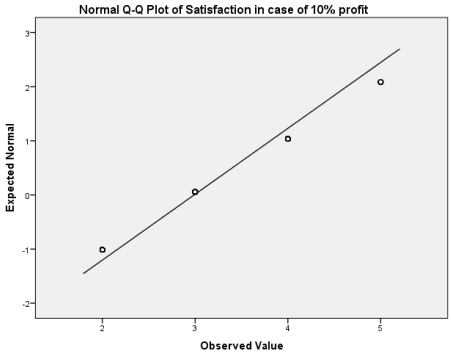

Normal Q-Q Plot of disappointment in case of 10% bad debt
Expected Normal
Observed Value

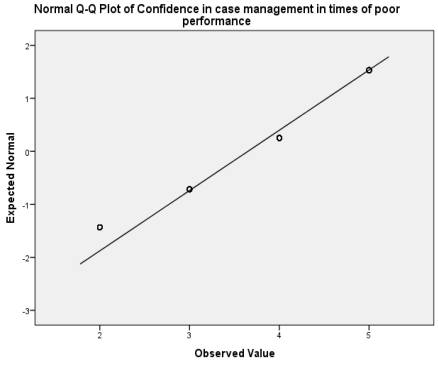

Normal Q-Q Plot of Confidence in cash management in times of good performance
Expected Normal
Observed Value


Normal Q-Q Plot of Success attribution to your own financial policy
Expected Normal
Observed Value


Normal Q-Q Plot of Success attribution to environmental factors facor
Expected Normal
Observed Value


Normal Q-Q Plot of Satisfaction in case of 5% profit
Expected Normal
Observed Value


Normal Q-Q Plot of Satisfaction in case of 10% profit
Expected Normal
Observed Value


Normal Q-Q Plot of Confidence in case management in times of poor performance
Expected Normal
Observed Value