

TABLE OF CONTENTS

| | |
|--|--------|
| Acknowledgements ----- | i |
| Abstract ----- | iii |
| Table of Contents ----- | v |
| List of Figures ----- | x |
| List of Tables ----- | xi |
| Abbreviations ----- | xii |
| Chapter 1: Introduction ----- | 1-12 |
| 1.1 Introduction to Strategic Sourcing & Indian Automobile Industry----- | 1 |
| 1.2 Why Risk Management (RM) in Strategic Sourcing (SS)----- | 3 |
| 1.3 Important Constructs of Strategic Sourcing Risk Management (SSRM)----- | 4 |
| 1.3.1 Definition of Risk ----- | 5 |
| 1.3.2 Strategic Sourcing Risk----- | 5 |
| 1.3.3 Strategic Sourcing Risk Sources and Consequences----- | 5 |
| 1.3.4 Strategic Sourcing Risk Drivers----- | 6 |
| 1.4 Research Problem ----- | 7 |
| 1.5 Objectives of the Research----- | 9 |
| 1.6 Scope of the Research ----- | 9 |
| 1.7 Outline of the Thesis ----- | 10 |
| Chapter 2 : Literature Review ----- | 13- 58 |
| 2.1 Introduction ----- | 13 |
| 2.2 Strategic Sourcing (SS)----- | 14 |
| 2.2.1 Pillars of Strategic Sourcing ----- | 15 |
| 2.2.2 Conceptual perspective ----- | 19 |
| 2.2.3 Strategic Sourcing Process----- | 25 |
| 2.2.4 Tools/ Techniques of Strategic Sourcing ----- | 27 |
| 2.2.5 Antecedents and Practices of Strategic Sourcing: Indian Automobile Industry | 29 |
| 2.3 Risk Management ----- | 30 |
| 2.3.1 Definition of Risk ----- | 32 |
| 2.3.2 Risk Assessment: Identification and Evaluation ----- | 34 |

| | | |
|--|--|---------|
| 2.3.3 | Risk Management Framework ----- | 35 |
| 2.4 | Risk Awareness RM from Strategic Sourcing Perspective ----- | 37 |
| 2.4.1 | Tools/ Techniques for SSRM ----- | 38 |
| 2.4.2 | Risk Sources in SSRM: Indian Automobile Industry ----- | 44 |
| 2.4.3 | Risk Drivers ----- | 49 |
| 2.4.4 | SSRM Enablers ----- | 50 |
| 2.4.5 | SSRM Barriers ----- | 52 |
| 2.4.6 | Risk Mitigation ----- | 53 |
| 2.5 | Research Gaps in SSRM----- | 56 |
| Chapter 3: Research Design and Methodology----- | | 59 - 70 |
| 3.1 | Introduction ----- | 59 |
| 3.2 | Overview of the Research Process----- | 59 |
| 3.3 | Survey, Instrument and Data Collection ----- | 61 |
| 3.3.1 | Survey Instruments ----- | 62 |
| 3.3.2 | Biases ----- | 62 |
| 3.3.3 | Pre Testing of Questionnaire ----- | 63 |
| 3.3.4 | Survey Administration and Response ----- | 64 |
| 3.4 | Analysis of Data ----- | 64 |
| 3.4.1 | Bayesian Network (BN) ----- | 65 |
| 3.4.2 | Exploratory Factor Analysis (EFA) & Force Field Analysis (FFA) ----- | 66 |
| 3.4.3 | Data Envelopment Analysis (DEA) and Analytic Hierarchy Process (AHP) ----- | 67 |
| Chapter 4: Risk Sources & Risk Awareness in Strategic Sourcing: Indian Automobile Industry Risk Index ----- | | 71 - 95 |
| 4.1 | Introduction----- | 71 |
| 4.2 | Research Methodology ----- | 74 |
| 4.2.1 | Bayesian Networks ----- | 75 |
| 4.2.2 | Bayesian Belief Network modelling steps ----- | 76 |
| 4.3 | Risk Factors for Automotive Industry ----- | 77 |
| 4.3.1 | Data Collection Procedure ----- | 77 |
| 4.3.1.1 | Demand Volatility ----- | 78 |
| 4.3.1.2 | R&D Expenditure ----- | 78 |
| 4.3.1.3 | Credit Risk ----- | 78 |

| | | |
|--|--|-----|
| 4.3.1.4 | Exchange Rate Risk ----- | 79 |
| 4.3.1.5 | Raw Material Price ----- | 78 |
| 4.3.1.6 | Supply Chain Disruptions ----- | 79 |
| 4.3.1.7 | Regulatory Risk ----- | 79 |
| 4.3.1.8 | Economic Instability ----- | 80 |
| 4.3.1.9 | Country Risk ----- | 80 |
| 4.3.2 | Discretization of Continuous Data ----- | 80 |
| 4.4 | Model Development ----- | 82 |
| 4.4.1 | Business Risk ----- | 83 |
| 4.4.2 | Economic Risk ----- | 84 |
| 4.4.2.1 | Economic Stability Risk ----- | 84 |
| 4.4.2.2 | Exchange Rate Risk ----- | 85 |
| 4.4.2.3 | Country Risk ----- | 85 |
| 4.4.3 | External Risk ----- | 86 |
| 4.4.3.1 | Raw Material Price Risk ----- | 86 |
| 4.4.3.2 | Regulatory Risk ----- | 87 |
| 4.4.3.3 | Supply Chain Disruption Risk ----- | 87 |
| 4.5 | Model Analysis ----- | 87 |
| 4.6 | Conclusions ----- | 93 |
| Chapter 5: Strategic Sourcing Risk Management practices in Indian Automobile Industry: Force Field Analysis of Risk Drivers (Enablers and Barriers) -----96 - 117 | | |
| 5.1 | Introduction----- | 96 |
| 5.2 | Potential enablers strategic sourcing risk management implementation--- | 98 |
| 5.2.1 | Supplier risk assessment ----- | 98 |
| 5.2.2 | Data sharing in supply network (DSE)----- | 99 |
| 5.2.3 | Partnership with suppliers (PSE)----- | 100 |
| 5.2.4 | Supply flexibility (SFE)----- | 100 |
| 5.3 | Potential barriers in strategic sourcing risk management implementation- | 101 |
| 5.3.1 | Cost focus----- | 101 |
| 5.3.2 | Ad hoc or poor planning (PPB)----- | 102 |
| 5.3.3 | Data security/privy breaches (PPB)----- | 103 |

| | | |
|-------|---|-----|
| 5.3.4 | Hard visualization of strategic sourcing risk management benefits (VB) | 103 |
| 5.4 | Research methodology ----- | 104 |
| 5.4.1 | Data collection ----- | 104 |
| 5.4.2 | Questionnaire and measure development ----- | 106 |
| 5.5 | Data analysis ----- | 107 |
| 5.5.1 | Factor analysis on strategic sourcing risk management enablers and barriers | 110 |
| 5.5.2 | Results of force field analysis ----- | 112 |
| 5.6 | Discussion on findings ----- | 113 |
| 5.7 | Conclusion ----- | 116 |

Chapter 6: Risk Management Framework: Supplier Selection Model Incorporating Risks and Costs into Global Sourcing Decisions -----118-139

| | | |
|-------|--|-----|
| 6.1 | Introduction ----- | 118 |
| 6.1.1 | Strategic Sourcing: Concept & Models ----- | 121 |
| 6.1.2 | Global Supply Network Risks----- | 125 |
| 6.2 | Research Methodology ----- | 127 |
| 6.2.1 | Step 1: Short listing of Vendors Based on Subjective Factors ----- | 127 |
| 6.2.2 | Step 2: DEA Framework and Approach ----- | 129 |
| 6.3 | Case Application ----- | 131 |
| 6.4 | Analysis & Limitations ----- | 137 |
| 6.5 | Conclusions & Recommendations for Future Research ----- | 138 |

Chapter 7: Development and Validation of Strategic Sourcing Risk Management Normative Framework -----140-149

| | | |
|-------|--|-----|
| 7.1 | Overview----- | 140 |
| 7.2 | Environment Scan: Indian Automobile Industry ----- | 142 |
| 7.3 | Identifying and assessing the sourcing/ supply risks: A Bayesian Model ----- | 143 |
| 7.4 | Knowing current state of Indian automobile industry's variables of SSRM: Force Field Analysis of Barriers and Enablers | 144 |
| 7.5 | Supplier selection model incorporating Costs and Risks: DEA and AHP model | 145 |
| 7.6 | Validation of the SSRM Normative Framework ----- | 147 |
| 7.6.1 | Survey of SSM Automotive Professionals and Risk Managers ----- | 147 |
| 7.6.2 | Validation by means of a Case Study ----- | 149 |

| | |
|--|-----------|
| Chapter 8: Conclusion and Future Scope of Research----- | 150 - 158 |
| 8.1 Overview----- | 150 |
| 8.2 Review of Research Objectives and Findings ----- | 150 |
| 8.3 Theoretical and Managerial Implications for Industry ----- | 152 |
| 8.4 Limitations ----- | 155 |
| 8.5 Future Direction of Research ----- | 156 |
| 8.6 Conclusion ----- | 158 |
| References ----- | 159- 184 |
| Appendix 1 to 3 ----- | 185- 197 |
| Publications ----- | 198 |
| Vita ----- | 199-200 |