

GREEN SUPPLY CHAIN MANAGEMENT IN MANUFACTURING ORGANIZATIONS OF PAKISTAN: PRACTICES AND PERFORMANCE



Syed Faisal Anwar

01-246161-009

Supervisor: Prof. Dr. Muhammad Ismail Ramay

A thesis submitted to the Department of Software Engineering, Faculty of Engineering Sciences, Bahria University, Islamabad in the partial fulfillment for the requirements of a Master's degree in Engineering Management.

February, 2018

APPROVAL SHEET

Thesis Completion Certificate

Scholar's Name:	<u>SYED FAISAL ANWAR</u>	Registration No:	<u>44827</u>
Programme of Study:	<u>MS ENGINEERING MANAGEMENT</u>		
Thesis Title:	<u>GREEN SUPPLY CHAIN MANAGEMENT IN MANUFACTURING ORGANIZATION OF PAKISTAN: PRATICES AND PERFORMANCE</u>		

It is to certify that the above student's thesis has been completed to my satisfaction and, to my belief, its standard is appropriate for submission for Evaluation. I have also conducted plagiarism test of this thesis using HEC prescribed software and found similarity index at **12%** that is within the permissible limit set by the HEC for the MS/MPhil degree thesis. I have also found the thesis in a format recognized by the BU for the MS/MPhil thesis.

Principal Supervisor's Signature: _____

Date: _____ Name: _____

Abstract

The sustainable supply chain has been elevated as a first approach for the industry, looking for the environment-friendly products and processes. This research focuses on examining the sustainable supply chain in Pakistan manufacturing industry and impact on industry after its implementation. Little work had been carried out by academicians and researcher in this area in Pakistan. The survey questionnaire contained 33 items and 300 questionnaires were distributed among industry professionals. Out of 300 questionnaires, 148 valid responses were received and correlation and regression analysis was done using SPSS version 21. Pakistan industries are new to sustainable supply chain and are becoming aware of environmental hazards resulting from industrial processes and waste. There are significant findings regarding sustainable supply chain practices and performance relationship. First of all, this research survey population was based on local manufacturing industries and was different from each other. The research awareness may not be adopted immediately by industry because there is improvement required in the area of performance. The present study is one of a handful couple of studies which investigates the implementation of green supply chain management practices in Pakistan's manufacturing industries and their effect on industry performance in terms of environment and economic profits.

Acknowledgement

Above all else, I put down my head before Almighty Allah through whose blessings and mercy I completed my MS thesis. I want to thank my supervisor Prof. Dr Muhammad Ismail Ramay at Bahria University Islamabad, who was involved in the validation survey for the research and other work. He reliably enabled this thesis to be my own work and guided me into the correct course at whatever point he thought I required it. Finally, I should offer my extremely significant thanks to my parents for giving me a sumptuous way of life and continuous monetary help and consolation.

Contents

Abstract	i
Acknowledgements.....	ii
Contents.....	iii
List of Tables	v
List of Figures	vi
List of Abbreviations	vii
Chapter 1 Introduction	1
1.1 Background	1
1.2 Problem Statement	3
1.3 Need of Research	4
1.4 Research Objective	4
1.5 Research Questions	5
1.6 Significance of Research	5
Chapter 2 Literature Review	6
2.1 Introduction	6
2.2 Green Supply Chain.....	6
2.3 Gap in the body of knowledge.....	8
2.4 Variable	9
2.4.1 External GSCM	9
2.4.2 Internal Environment.....	10
2.4.3 Recovery of Investment	10
2.4.4 Eco-Friendly Design.....	11
2.4.5 Economic Performance	11
2.4.6 Environmental Performance.....	12

2.5 Hypothesis	12
2.6 Theoretical Framework	15
Chapter 3 Methodology.....	17
3.1 Research Design	17
3.2 Sampling Technique	17
3.3 Sample Size and Population	17
3.4 Scale	18
3.5 Research Instrument	18
Chapter 4 Results	20
4.1 Demographics	20
4.2 Descriptive Statistics	21
4.3 Correlation Analysis	23
4.4 Regression Analysis	24
Chapter 5 Conclusion	35
5.1 Conclusion	35
5.2 Recommendations	36
5.3 Limitation	37
References.....	38
Appendix.....	46

List of Tables

Table 4.1. Gender.....	20
Table 4.2. Age.....	20
Table 4.3. Organization.....	21
Table 4.4. Industry Location.....	21
Table 4.5. Descriptive Statistics.....	22
Table 4.6. Correlation	23
Table 4.7. Regression Analysis of Practices and Environmental Performance.....	24
Table 4.8. Regression Analysis of Practices and Economic Performance	26
Table 4.9 Regression Analysis of Recovery of Investment and Economic Performance.....	28
Table 4.10. Regression Analysis of Quality Management and Environmental Performance..	29
Table 4.11. Regression Analysis of Quality Management and Economic Performance.....	31
Table 4.12 Regression Analysis of E×QM and Economic Performance	32
Table 4.13 Results	33

List of Figures

Figure 2.1. Theoretical Framework of GSCM Practices and Performance.....	15
Figure 4.1. Histogram of Environmental Performance.....	25
Figure 4.2. Normality Plot of Environmental Performance	26
Figure 4.3. Histogram of Economic Performance.....	27
Figure 4.4. Normality Plot of Better Economic Performance.....	28
Figure 4.5 Histogram of Economic Performance.....	31

List of Abbreviations

GSCM:	Green Supply Chain Management
CPEC:	China Pakistan Economic Corridor
OBOR:	One Belt One Road
SCM:	Supply Chain Management
EMS:	Environmental Management System
TQM:	Total Quality Management
ISO:	International Standard Organization
SPSS:	Statistical Package for Social Sciences
GM:	General Motors
QM:	Quality Management