

# **ROLE OF ORGANIZATIONAL LEARNING ON PERFORMANCE OF AUTOMOBILE INDUSTRY IN SOUTH INDIA REGION**

**A THESIS**

*Submitted by*

**ANOOP C NAIR**

*in partial fulfillment for the award of the degree  
of*

**DOCTOR OF PHILOSOPHY**



**Department of Management Studies  
FACULTY OF MANAGEMENT STUDIES**

**Dr. M.G.R.**

**Educational and Research Institute**

**University**

**(Declared as Deemed to be University u/s.3 of UGC Act 1956)**

**Maduravoyal, Chennai - 95**

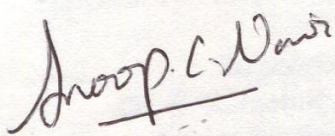
**(An ISO 9001 : 2008 Certified Institution)**

**JANUARY 2016**

## **DECLARATION BY THE CANDIDATE**

I declare that the synopsis of the thesis entitled “**ROLE OF ORGANIZATIONAL LEARNING ON PERFORMANCE OF AUTOMOBILE INDUSTRY IN SOUTH INDIA REGION**” submitted by me for the degree of Doctor of Philosophy is a bonafide record of work carried out by me during the period from **January 2009 to August 2015** under the guidance of **Dr. S. Ramalingam** and has not formed the basis for the award of any degree, diploma, associate-ship, fellowship, titles in this or any other University or other similar institution of higher learning and without any plagiarism.

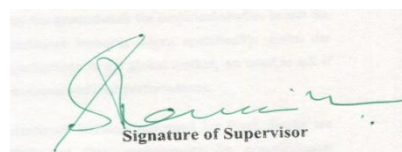
I have also published my papers in International Journals (Scopus rated) as per list of publications in the Annexure.



**Signature of Research Scholar**

## **BONAFIDE CERTIFICATE**

Certified that the synopsis of the thesis entitled “**ROLE OF ORGANIZATIONAL LEARNING ON PERFORMANCE OF AUTOMOBILE INDUSTRY IN SOUTH INDIA REGION**” is the bonafide work of **Mr. ANOOP C NAIR**, who had carried out the research under my supervision and without any plagiarism to the best of my knowledge. Certified further, that to the best of my knowledge, the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or diploma was conferred on an earlier occasion on this or any other scholar.



Signature of Supervisor

**Supervisor**  
Dr. S. Ramalingam  
Senior Professor  
Centre for International Collaboration  
Dr. M.G.R. Educational & Research Institute University  
Maduravoyal, Chennai

## **ABSTRACT**

- Organizational learning is the main factor to maintain innovation. It enhances the organizations capacity to respond to changes in the external environment, and then provide the basis to adjust and change the extant rules and strategies. Organizational learning is the source of achieving and enhancing competitive advantage, corporate performance and organizational innovation. Hence this study proposes that organizational learning is the important source of knowledge updating, both contribute to create new knowledge and get rid of old knowledge
- This study applies conceptual frameworks of organizational learning and adaptation to a specific industry to determine if there is validity to the concept of organizational learning. This effort is intended to lay the groundwork for empirical studies to test the validity of the concept of organizational learning. More specifically, given the successes of a number of Indian organizations in the global market, we need to ask if organizational learning contributes to organizational performances.
- The various dimensions of organizational learning proposed by Peter Senge are considered in this research (1990) and their consequence on organizational performance is investigated.
- To examine the impact of organizational learning on organizational performance of south Indian automobile industries and to arrive at a conceptual model on different innovative organizational learning factors which impact the functioning of an organization and suggest suitable recommendations for Indian automobile companies.
- The study used quantitative and deductive approaches. A cross-section design entails the collection of data on more than one case and at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more

variables, which are then examined to detect patterns of association. The population for the study comprises of automobile manufacturer employees.

## **ACKNOWLEDGEMENT**

First of all, I praise God, the almighty, merciful and passionate, for providing me opportunity and granting me capability to proceed successfully. The thesis appears in its current form due to the co-operation and assistance of several people. I take this opportunity to acknowledge the warmth, guidance of my **professors, colleagues, friends & family members** in this study.

At the very outset, I thank my esteemed Supervisor **Dr. Ramalingam S** – Senior Professor, Centre for International Collaboration, Dr MGR Educational & Research Institute, an unassuming yet a profound scholar. I must acknowledge here, his incomparable sincerity and commitment to work which I experienced in his approach to his students. His students have always been his first priority and hence, I used to receive my scholarly suggestions within a short period of time. I express my deepest sense of gratitude to **Dr. Ashvini Ravi**, my esteemed Expert Member, my cordial thanks for grooming me as a PhD student, your warm encouragement, thoughtful guidance, insightful decision, critical comments and correction of the thesis. She has inspired me to work rigorously, methodically and accurately, not by words, but by her meticulousness, accuracy, dedication to work and insistence on perfection.

Last but not the least, my family including **my parents, wife and daughter**, I thank them all for their utmost moral support, love and care in all aspects of my life. I thank one above all of us, omnipresent God, for answering my prayers for giving me the strength to plod on during each and every phase of my life.

## TABLE OF CONTENTS

Chapter no.	Title	Page no.
	Abstract	iv
	List of Tables	xiv
	List of Figures	xviii
	Abbreviations and Symbols	xx
<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
	1.1 General	1
	1.2 Background of the study	2
	1.3 Organizational Learning	5
	1.4 Statement of the problem	8
	1.5 Purpose of the study	8
	1.6 Aim and Research objectives of the study	9
	1.6.1 Objectives of the study	9
	1.7 Research Questions	10
	1.8 Hypothesis	10
	1.9 Research Methodology	11
	1.10 Outline of the report	12
	1.11 Conclusion	12
<b>2</b>	<b>LITERATURE REVIEW</b>	<b>13</b>
	2.1 Introduction	13
	2.2 Section I: Concept and definition on Organizational Learning	14

2.2.1 Chosen definition of Organizational Learning	19
--	----

<b>Chapter no.</b>	<b>Title</b>	<b>Page no.</b>
2.3	Section II: Types, Stages and Theories of OL and Chosen Model with justification	20
2.3.1	Types of Organizational Learning	20
2.3.1.1	Single Loop Learning	21
2.3.1.2	Double Loop Learning	22
2.3.1.3	Deutero-Learning	23
2.3.2	Stages of Organizational Learning	25
2.3.3	Characteristics of Organizational Learning	29
2.3.4	Chosen Model: Senge OL Model	35
2.3.4.1	Personal Mastery	36
2.3.4.2	Mental Models	38
2.3.4.3	Shared Vision	40
2.3.4.4	Team Learning	41
2.3.4.5	Systems Thinking	42
2.3.4.5.1	Leveraging	43
2.3.5	Facilitators of Organizational Learning	44
2.3.5.1	Leadership	44
2.4	Section III: Previous Empirical Studies that applied OL in Automobile Industries and Research Gap	49
2.4.1	OL in Automobile Industries	49
2.4.2	OL and Business Performance	57
2.4.3	OL and related impact on HR practices	59
2.4.4	Training and Development and OL practices	60
2.4.5	OL practices and Knowledge Management	61
2.4.5.1	OL practices and Knowledge Sharing	61

2.4.5.2 OL practices and Knowledge Creation	61
---	----

<b>Chapter no.</b>	<b>Title</b>	<b>Page no.</b>
	2.4.6 Research Gap	65
2.5	Section IV: Theoretical Framework and Hypothesis Development	66
<b>3</b>	<b>RESEARCH METHODOLOGY</b>	70
3.1	Introduction	70
3.2	Research Design	70
	3.2.1 Research Philosophy	71
	3.2.1.1 Research Philosophy of Thesis	73
	3.2.2 Research Approach	73
	3.2.2.1 Research Approach of Thesis	74
	3.2.3 Research Strategy	74
	3.2.4 Choice	76
	3.2.5 Time Horizon	76
3.3	Data Collection Instrument	76
	3.3.1 Primary Data	76
	3.3.1.1 Survey Method of Data Collection	77
3.4	Sampling	81
	3.4.1 Sampling Group	81
	3.4.2 Sampling Technique	82
	3.4.3 Size of Sample: Participant Mix	83
3.5	Reliability, Quality and Validity of Research	84
	3.5.1 Validity of Research	84
	3.5.1.1 Construct Validity	84
	3.5.1.2 Internal Validity	85



3.5.1.3 External Validity	86
3.5.2 Reliability of Research	86

<b>Chapter no.</b>	<b>Title</b>	<b>Page no.</b>
	3.5.3 Quality of Research	87
3.6	Types of Statistical Tools in the study	88
3.7	Ethical Approaches	92
	3.7.1 Dignity	93
	3.7.2 Ethnicity	93
	3.7.3 Informed Consent	93
	3.7.4 Autonomy, Beneficence and Justice	94
	3.7.5 Ethics of Research on Internet	94
3.8	Analysis of Data	94
3.9	Summary	95
<b>4</b>	<b>INTERPRETATION AND DATA ANALYSIS</b>	96
4.1	Introduction	96
4.2	Factor Analysis Using Reliability Testing and CFA	97
4.3	Reliability Confirmation (Sample Testing)	98
	4.3.1 Reliability: Systems Thinking	98
	4.3.2 Reliability: Mental Models	99
	4.3.3 Reliability: Building Shared Vision	100
	4.3.4 Reliability: Team Learning	100
	4.3.5 Reliability: Personal Mastery	101
	4.3.6 Reliability: Organizational Performance	101
4.4	Response Rate	102
4.5	CFA and Reliability Confirmation (Total Samples)	103
	4.5.1 CFA & Reliability: Systems Thinking	103
	4.5.1.1 CFA: Organizational Communication	103

4.5.1.2 CFA: Feedback Promotion	104
4.5.1.3 CFA: Policy Formulation	105

<b>Chapter no.</b>	<b>Title</b>	<b>Page no.</b>
	4.5.1.4 Reliability: Systems Thinking	107
	4.5.1.5 CFA: Systems Thinking	108
4.5.2	CFA & Reliability: Mental Models	108
	4.5.2.1 CFA: Information Sharing Pattern	108
	4.5.2.2 CFA: Knowledge Creating & Obtaining	109
	4.5.2.3 CFA: Knowledge Sharing	112
	4.5.2.4 Reliability: Mental Models	113
	4.5.2.5 CFA: Mental Models	114
4.5.3	CFA & Reliability: Building Shared Vision	114
	4.5.3.1 CFA: Organizational Vision	114
	4.5.3.2 CFA: Leadership Development	115
	4.5.3.3 Reliability: Building Shared Vision	117
	4.5.3.4 CFA: Building Shared Vision	117
4.5.4	CFA & Reliability: Team Learning	118
	4.5.4.1 CFA: Team Efficiency And Diversity	118
	4.5.4.2 CFA: Role Clarity	119
	4.5.4.3 Reliability: Team Learning	120
	4.5.4.4 CFA: Team Learning	120
4.5.5	CFA & Reliability: Personal Mastery	121
	4.5.5.1 CFA: Competency Development	121
	4.5.5.2 CFA: Morale Development	122
	4.5.5.3 Reliability: Personal Mastery	123
	4.5.5.4 CFA: Personal Mastery	124
4.5.6	CFA & Reliability: Organizational Performance	124
	4.5.6.1 CFA: Financial Performance	124

4.5.6.2 CFA: Non-Financial Performance	125
4.5.6.3 Reliability: Organizational Performance	126

<b>Chapter no.</b>	<b>Title</b>	<b>Page no.</b>
	4.5.6.4 CFA: Organizational Performance	127
	4.5.7 Confirmatory Factor Analysis: Summary	128
4.6	Descriptive Analysis on sample	129
	4.6.1 Frequency Distribution: Age Group	129
	4.6.2 Frequency Distribution: Educational Qualification	130
	4.6.3 Frequency Distribution: Designation	131
	4.6.4 Frequency Distribution: Work Experience	132
	4.6.5 Frequency Distribution: Nature of Work	133
	4.6.6 Mean & Standard Deviation	134
	4.6.6.1 Systems Thinking	134
	4.6.6.2 Mental Models	134
	4.6.6.3 Building Shared Vision	135
	4.6.6.4 Team Learning	135
	4.6.6.5 Personal Mastery	135
	4.6.6.6 Organizational Performance	136
4.7	Inferential Analysis on sample	136
	4.7.1 Hypothesis I	137
	4.7.2 Hypothesis II	139
	4.7.3 Hypothesis III	142
	4.7.4 Hypothesis IV	145
	4.7.5 Hypothesis V	148
	4.7.6 Dimensions Vs Demographics: ANOVA	151
	Summary	
	4.7.7 Hypothesis VI	152
	4.7.8 Hypothesis VII	153

4.7.9 Hypothesis VIII	154
4.7.10 Hypothesis IX	155

<b>Chapter no.</b>	<b>Title</b>	<b>Page no.</b>
	4.7.11 Hypothesis X	156
	4.7.12 Hypothesis XI	157
	4.7.13 Hypothesis XII	157
	4.7.14 Hypothesis XIII	158
	4.7.15 Hypothesis XIV	158
	4.7.16 Hypothesis XV	159
	4.7.17 Hypothesis XVI	159
	4.7.18 Hypothesis XVII	160
	4.7.19 Correlation Coefficient between Dimensions of Organizational Performance	161
	4.7.20 Regression Analysis of Organizational Performance	163
4.8	SEM of Organizational Learning on Organizational Performance	165
	4.8.1 Basic Introduction on SEM	165
	4.8.2 SEM Results	165
<b>5</b>	<b>CONCLUSION</b>	170
	5.1 Introduction	170
	5.2 Empirical Findings	170
	5.3 Answering the Research Questions	174
	5.3.1 Research Question #1	174
	5.3.2 Research Question #2	178
	5.3.3 Research Question #3	182
	5.3.4 Research Question #4	185

5.3.5	Research Question #5	187
-------	----------------------	-----

<b>Chapter no.</b>	<b>Title</b>	<b>Page no.</b>
	5.3.6 Research Question #6	189
5.4	Discussion on study objectives	192
	5.4.1 Objective #1	192
	5.4.2 Objective #2	194
	5.4.3 Objective #3	197
	5.4.4 Objective #4	199
	5.4.5 Objective #5	202
5.5	Conclusion	205
5.6	Future Implication	207
5.7	Limitations	208
	<b>REFERENCES</b>	209
	<b>LIST OF PUBLICATIONS</b>	246

## LIST OF TABLES

<b>Table no.</b>	<b>Title</b>	<b>Page no.</b>
1.1	Production and Sales	2
2.1	Characteristics of Traditional organization versus the Learning organization	32
3.1	Sampling adopted in different stages of research	83
3.2	Participant Consent Model	93
4.1	Internal Consistency of Cronbach’s alpha	97
4.2	Reliability Statistics of the Factor “Systems Thinking”	98
4.3	Reliability Statistics of the Factor “Mental Models”	99
4.4	Reliability Statistics of the Factor “Building Shared Vision”	100
4.5	Reliability Statistics of the Factor “Team Learning”	100
4.6	Reliability Statistics of the Factor “Personal Mastery”	101
4.7	Reliability Statistics of the Factor “Organizational Performance”	102
4.8	Return rate of the questionnaire	102
4.9	Reliability Statistics of the Factor “Systems Thinking”	107
4.10	Confirmatory Factor Analysis of “Systems Thinking”	108
4.11	Reliability Statistics of the Factor “Mental Models”	113
4.12	Confirmatory Factor Analysis of “Mental Models”	114
4.13	Reliability Statistics of the Factor “Building Shared Vision”	117
4.14	Confirmatory Factor Analysis of “Building Shared Vision”	117
4.15	Reliability Statistics of the Factor “Team Learning”	120
4.16	Confirmatory Factor Analysis of “Team Learning”	120
4.17	Reliability Statistics of the Factor “Personal Mastery”	123

4.18	Confirmatory Factor Analysis of “Personal Mastery”	124
------	--	-----

<b>Table no.</b>	<b>Title</b>	<b>Page no.</b>
4.19	Reliability Statistics of the Factor “Organizational Performance”	126
4.20	Confirmatory Factor Analysis of “Organizational Performance”	127
4.21	Confirmatory Factor Analysis: Summary	128
4.22	Frequency Distribution of Age Group in Years of Employees	129
4.23	Frequency Distribution of Educational Qualification of Employees	130
4.24	Frequency Distribution of Designation of Employees	131
4.25	Frequency Distribution of Experience in Years of Employees	132
4.26	Frequency Distribution of Nature of Work of Employees	133
4.27	Mean and SD of Systems Thinking of all sample	134
4.28	Mean and SD of Mental Models of all sample	134
4.29	Mean and SD of Building Shared Vision of all sample	135
4.30	Mean and SD of Team Learning of all sample	135
4.31	Mean and SD of Personal Mastery of all sample	135
4.32	Mean and SD of Organizational Performance of all sample	136
4.33	t test for significant difference between General and Shift Members with respect to Dimensions of Organizational Performance	137
4.34	ANOVA for significant difference between Age Group with respect to Dimensions of Organizational Performance	139
4.35	ANOVA for significant difference between Educational Qualification with respect to Dimensions of Organizational Performance	142
4.36	ANOVA for significant difference between Designation of Employees with respect to Dimensions of Organizational Performance	145

<b>Table no.</b>	<b>Title</b>	<b>Page no.</b>
4.37	ANOVA for significant difference between Experience in Years with respect to Dimensions of Organizational Performance	148
4.38	Dimensions Vs Demographics : ANOVA Summary	151
4.39	Chi-square test for association between Age Group and level of Organizational Performance	152
4.40	Chi-square test for association between Educational Qualification and level of Organizational Performance	153
4.41	Chi-square test for association between Designation and level of Organizational Performance	154
4.42	Chi-square test for association between Experience in Years and level of Organizational Performance	155
4.43	Chi-square test for association between Nature of Work and level of Organizational Performance	156
4.44	Friedman test for significant difference between mean ranks towards Systems Thinking	157
4.45	Friedman test for significant difference between mean ranks towards Mental Models	157
4.46	Friedman test for significant difference between mean ranks towards Building Shared Vision	158
4.47	Friedman test for significant difference between mean ranks towards Team Learning	158
4.48	Friedman test for significant difference between mean ranks towards Personal Mastery	159
4.49	Friedman test for significant difference between mean ranks towards Organizational Performance	159
4.50	Friedman test for significant difference between mean ranks towards Factors of Senge Model	160
4.51	Pearson Correlation Coefficient between Dimensions of Organizational Performance	161
4.52	Variables in the Multiple Regression Analysis	164
4.53	Variables in the Structural Equation Model Analysis	167
4.54	Model fit summary	169



<b>Table no.</b>	<b>Title</b>	<b>Page no.</b>
5.1	Hypothesis Summary	172
5.2	Research Question#1 Summary	177
5.3	Research Question#2 Summary	181
5.4	Research Question#3 Summary	184
5.5	Research Question#4 Summary	186
5.6	Research Question#5 Summary	188
5.7	Research Question#6 Summary	191

## LIST OF FIGURES

<b>Figure no.</b>	<b>Title</b>	<b>Page no.</b>
1.1	Hypothesis	10
2.1	Single-loop Learning	22
2.2	Double-loop Learning	23
2.3	Deutero Learning	24
2.4	Dynamics Of Learning Organization	36
2.5	Process of Shared Mental Model	39
2.6	Systems Thinking Diagram	43
2.7	Theoretical Framework	67
3.1	Research Onion	71
3.2	Comparison of Deductive and Inductive Approaches	74
4.1	CFA of Organizational Communication	104
4.2	CFA of Feedback Promotion	105
4.3	CFA of Policy Formulation	106
4.4	CFA of Information Sharing Pattern	109
4.5	CFA of Knowledge Creating & Obtaining	111
4.6	CFA of Knowledge Sharing	112
4.7	CFA of Organizational Vision	115
4.8	CFA of Leadership Development	116
4.9	CFA of Team Efficiency and Diversity	118
4.10	CFA of Role Clarity	119
4.11	CFA of Competency Development	122
4.12	CFA of Morale Development	123
4.13	CFA of Financial Performance	125
4.14	CFA of Non-Financial Performance	126

<b>Figure no.</b>	<b>Title</b>	<b>Page no.</b>
4.15	Bar Diagram representing Age Group in Years of Employees	129
4.16	Bar Diagram representing Educational Qualification of Employees	130
4.17	Bar Diagram representing Designation of Employees	131
4.18	Bar Diagram representing Experience in Years of Employees	132
4.19	Bar Diagram representing Nature of Work of Employees	133
4.20	SEM on Organizational Learning in Automobile Industries	167

## **ABBREVIATIONS & SYMBOLS**

AGFI	: Adjusted Goodness of Fit Index
ANOVA	: Analysis Of Variance
CAGR	: Compound Annual Growth Rate
CFA	: Confirmatory Factor Analysis
CFI	: Comparative Fit Index
DIPP	: Department of Industrial Policy and Promotion
DMRT	: Duncan Multiple Range Test
EFA	: Exploratory Factor Analysis
FDI	: Foreign Direct Investment
GFI	: Goodness of Fit Index
HR	: Human Resource
HRM	: Human Resource Management
ICT	: Information and Communications Technology
INR	: Indian National Rupee
IJBM	: International Journal of Business Management
IR	: Industrial Relations
IS	: Information Systems
IT	: Information Technology
JV	: Joint Venture
KF	: Knowledge Flow
KIF	: Knowledge Intensive Firm
KM	: Knowledge Management
LO	: Learning Organization
MCP	: Multiple Comparison Procedures
MCQ	: Multiple Choice Questions

MRT	: Multiple Range Test
OEM	: Original Equipment Manufacturers
OL	: Organizational Learning
OLM	: Organizational Learning Mechanism
OLP	: Organizational Learning Profiles
R&D	: Research and Development
RMR	: Root Mean square Residuals
RMSEA	: Root Mean Square Error of Approximation
ROI	: Return On Investment
SD	: Standard Deviation
SEM	: Structural Equation Modelling
SIAM	: Society of Indian Automobile Manufacturers
SPSS	: Statistical Package for the Social Sciences
SRP	: Sample Regression Plane
TQM	: Total Quality Management
TVS	: T V Sundaram Iyenger motor company
UK	: United Kingdom
US	: United States of America
WWII	: World War II