

# **Relationship of Entrepreneurial Orientation and Business Performance of North Indian Firms**

A Thesis Submitted to the Lovely Professional University

For the award of  
**DOCTOR OF PHILOSOPHY**  
**IN**  
**MANAGEMENT**

**BY**  
**Harpreet Singh Bedi**

**Guide**  
**Dr Sandeep Vij**

Faculty of Business and Arts  
**LOVELY PROFESSIONAL UNIVERSITY**  
**PUNJAB**

**FEBRUARY, 2016**

## CERTIFICATE

### TO WHOM IT MAY CONCERN

I certify that Harpreet Singh Bedi has prepared his thesis entitled 'Relationship of Entrepreneurial Orientation and Business Performance of North Indian Firms' for the award of PhD degree of the Lovely Professional University, under my guidance. He has carried out the work at the Department of Management, Lovely Professional University.

A handwritten signature in blue ink that reads "Sandeep Vij". The signature is written over a horizontal line that has been drawn across the page.

Sandeep Vij,

Associate Professor,

Department of Management,

D.A.V. University, Jalandhar

Date: 29 Feb, 2016

## **CERTIFICATE**

### **TO WHOM IT MAY CONCERN**

I certify that Harpreet Singh Bedi has prepared his thesis entitled 'Relationship of Entrepreneurial Orientation and Business Performance of North Indian Firms' for the award of PhD degree of the Lovely Professional University, under my guidance. He has carried out the work at the Department of Management, Lovely Professional University.

---

Sandeep Vij,  
Associate Professor,  
Department of Management,  
D.A.V. University, Jalandhar

Date:

## ACKNOWLEDGEMENT

*I would like to express my gratitude to my advisor Dr. Sandeep Vij. He has taught me, how research is to be done. I appreciate all his contributions of time and ideas to make my PhD experience productive and stimulating. The joy and enthusiasm he has for his research was contagious and motivational for me, even during tough times in the PhD pursuit. I would like to thank him for encouraging me to grow as a research scholar. His advice on research as well as on my career has been invaluable.*

*I am grateful to the other faculty members and colleagues, particularly Mr. Rayees Farooq for their constructive criticism and suggestions. The accomplishment of this project otherwise would have been painstaking endeavor, for lack of staunch and sincere support of the School of Business, Lovely Professional University.*

*Words cannot express how grateful I am to my family for all sacrifices they made for me to help me, during the completion of this project. Their prayer for me sustained me thus far. I would like to express my thanks to my son 'Nanakveer' for cheering me up.*

*Finally I thank God, for sailing me through all the rough and tough times during this project. Your guidance day by day. You are the one who let me finish my degree. I will keep on trusting You always.*

*Thank you, 'Waheguru ji'.*

**Harpreet Singh Bedi**

## TABLE OF CONTENTS

<b>Sr. No.</b>	<b>Particulars</b>	<b>Page No.</b>
	Table of Contents	x-xiii
	List of Tables	xiv-xvii
	List of Figures	xviii-xx
	List of Abbreviations	xxi
<b>Chapter I</b>	<b>INTRODUCTION</b>	<b>1-8</b>
<b>Chapter II</b>	<b>REVIEW OF LITERATURE</b>	<b>9-68</b>
2.1.	Entrepreneurship	9-10
2.2.	Entrepreneurial Orientation	10-12
2.3.	Entrepreneurship Vs. Entrepreneurial Orientation	12-13
2.4.	Entrepreneurial Orientation: A Firm Level Construct	13-14
2.5.	Dimensions of Entrepreneurial Orientation	14-15
2.5.1.	Innovativeness	15-19
2.5.2.	Risk Taking	19-23
2.5.3.	Proactiveness	23-27
2.5.4.	Competitive Aggressiveness	27-32
2.5.4(a)	Relationship between Proactiveness and Competitive Aggressiveness	33-34
2.5.5.	Autonomy	34-38
2.6.	Entrepreneurial Orientation: Uni-dimensionality Vs. Multi-dimensionality	38-40
2.7.	Business Performance	40-46
2.8.	Entrepreneurial Orientation – Business Performance Relationship	46-52
2.9.	Contingency framework of Entrepreneurial Orientation – Business Performance Relationship	52-57
2.9.1.	Environmental Uncertainty	57-61
2.9.2.	Organizational Structure	61-66
2.10.	Need for the Study	66-68
<b>Chapter III</b>	<b>RESEARCH METHODOLOGY</b>	<b>69-91</b>
3.1.	Research Design	69
3.1.1.	Research Questions	69

3.1.2.	Research Topic	69
3.1.3.	Objectives of the Study	70
3.1.4.	Hypotheses	70
3.1.5.	Scope of the Study	71
3.2.	Variables and Measures	71
3.2.1.	Construct Specification	71
3.2.1(a)	Entrepreneurial Orientation	71-72
3.2.1(b)	Environmental Uncertainty	72
3.2.1(c)	Organizational Structure	72-73
3.2.1(d)	Business Performance	73
3.2.2.	Generation of Item Pool and Selection of Sample of Items	73-74
3.2.2(a)	Operationalization of Entrepreneurial Orientation Construct	74-76
3.2.2(b)	Operationalization of Environmental Uncertainty Construct	76
3.2.2(c)	Operationalization of Organizational Structure Construct	76-77
3.2.2(d)	Operationalization of Business Performance Construct	77-78
3.2.3.	Content Validity and Final Operationalization	78-87
3.2.4.	Scaling and Pilot Testing	88
3.3.	Execution of Survey	88-89
3.4.	Sample Profile	89
3.5.	Data Analysis	90
3.6.	Limitations of the Study	90-91
<b>Chapter IV</b>	<b>MEASUREMENT AND VALIDITY</b>	<b>92-142</b>
4.1.	Descriptive Statistics	92-94
4.2.	Measurement and Validation	94-96
4.2.1.	Reliability	96-99
4.2.2.	Validity	99-101
4.2.3.	Measurement and Validation of Innovativeness	101-103
4.2.4.	Measurement and Validation of Risk Taking	104
4.2.5.	Measurement and Validation of Proactiveness	105-106
4.2.6.	Measurement and Validation of Competitive Aggressiveness	107-108
4.2.7.	Measurement and Validation of Autonomy	108-110
4.2.8.	Dimensionality of Entrepreneurial Orientation	110-111
4.2.8(a)	Measurement and Validation of the Uni-dimensional view of	111-118

	Entrepreneurial Orientation	
4.2.8(b)	Measurement and Validation of the Multi-dimensional view of Entrepreneurial Orientation	118-123
4.2.9.	Measurement and Validation of Environmental Uncertainty	123-125
4.2.10.	Measurement and Validation of Organizational Structure	125-127
4.2.11.	Measurement and Validation of Business Performance	128
4.2.11(a)	Measurement and Validation of Subjective Business Performance Relative to Competitors	128-132
4.2.11(b)	Measurement and Validation of Subjective Business Performance Relative to Industry	133-137
4.2.11(c)	Measurement and Validation of Archival Business Performance	137-142
<b>Chapter V</b>	<b>ASSOCIATION OF ENTREPRENEURIAL ORIENTATION WITH ORGANIZATIONAL DEMOGRAPHICS</b>	<b>143-155</b>
5.1.	Entrepreneurial Orientation (Uni-dimensional) and Organizational Demographics	143-147
5.2.	Entrepreneurial Orientation (Multi-dimensional) and Organizational Demographics	147-148
5.2.1.	Association of Age of Firm with Dimensions of Entrepreneurial Orientation	148-149
5.2.2.	Association of Size of Firm (based on Annual Turnover) with Dimensions of Entrepreneurial Orientation	149-150
5.2.3.	Association of Size of Firm (based on Number of Employees) with Dimensions of Entrepreneurial Orientation	151-152
5.2.4.	Association of Nature of Industry with Dimensions of Entrepreneurial Orientation	152-153
5.2.5.	Association of Type of Organization with Dimensions of Entrepreneurial Orientation	153-155
<b>Chapter VI</b>	<b>ENTREPRENEURIAL ORIENTATION - BUSINESS PERFORMANCE RELATIONSHIP</b>	<b>156-203</b>
6.1.	Entrepreneurial Orientation and Business Performance Relationship	156-157
6.2.	Models of Entrepreneurial Orientation - Business Performance Relationship	157-158
6.2.1.	Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Competitors	159-164
6.2.2.	Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry	165-170

6.2.3.	Entrepreneurial Orientation (Uni-dimensional) and Archival Business Performance	170-176
6.2.4.	Entrepreneurial Orientation (Multi-dimensional) and Subjective business Performance Relative to Competitors	176-182
6.2.5.	Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry	183-189
6.2.6.	Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance	190-197
6.3.	Model Comparison	197-203
<b>Chapter VII</b>	<b>MODERATION ANALYSIS</b>	<b>204-219</b>
7.1.	Moderation Analysis	204-205
7.2.	Moderating effect of Environment Uncertainty in Entrepreneurial Orientation - Business Performance Relationship	205-209
7.2.1.	Moderating effect of Environmental Uncertainty on Innovativeness – Business Performance Relationship	209-210
7.2.2.	Moderating effect of Environmental Uncertainty on Proactiveness – Business Performance Relationship	210-211
7.2.3.	Moderating effect of Environmental Uncertainty on Risk Taking – Business Performance Relationship	211-212
7.2.4.	Moderating effect of Environmental Uncertainty on Competitive Aggressiveness – Business Performance Relationship	212-213
7.2.5.	Moderating effect of Environmental Uncertainty on Autonomy – Business Performance Relationship	213-215
7.3.	Moderating effect of Organizational Structure in Entrepreneurial Orientation - Business Performance Relationship	215-219
<b>Chapter VIII</b>	<b>FINDINGS, IMPLICATIONS, CONCLUSION AND SUGGESTIONS</b>	<b>220-228</b>
8.1.	Findings	220-222
8.2.	Implication	222-226
8.3.	Conclusion and Suggestions	227-228
	<b>BIBLIOGRAPHY</b>	<b>229-261</b>
	<b>ANNEXURE</b>	
I	<i>Questionnaire</i>	i-viii



## **PREFACE**

The primary purpose of this study is to clarify the nature of entrepreneurial orientation construct and to propose a framework for investigating the relationship between entrepreneurial orientation and business performance. Chapter I defines entrepreneurship and presents different aspects of entrepreneurship. Chapter II presents the review of literature, provides the background of the topic and identifies the need for the study. In particular, the literature on the constructs of entrepreneurial orientation, business performance, entrepreneurial orientation - business performance relationship and the moderating roles of environmental uncertainty and organizational structure in entrepreneurial orientation - business performance relationship has been explored to identify the need for the study. Chapter III has been dedicated to the methodology of the study. It outlines the research design and provides description of the process followed for the development of the research instrument. Sample profile, data analysis techniques and limitations of the present study have been presented in this chapter. The chapter IV presents the process followed for measurement and validation of various constructs. First section of the chapter presents descriptive statistics, whereas in the second section psychometric properties of various constructs have been examined. The association between entrepreneurial orientation and organizational demographics has been explored in chapter V. Chapter VI measures the impact of entrepreneurial orientation on business performance by examining six proposed models of entrepreneurial orientation – business performance relationship. The comparison of all six models of entrepreneurial orientation – business performance relationship has been presented in chapter VI. The role that environmental uncertainty and organization structure play in the entrepreneurial orientation – business performance relationship has been analyzed in Chapter VII. Chapter VIII presents findings, implications and conclusions. It also discusses the scope for future research.

## LIST OF TABLES

<b>Table No.</b>	<b>Title of Table</b>	<b>Page No.</b>
3.1.	Items Selected for Measuring Innovativeness	79
3.2.	Items Selected for Measuring Risk Taking	80
3.3.	Items Selected for Measuring Proactiveness	81
3.4.	Items Selected for Measuring Competitive Aggressiveness	82
3.5.	Items Selected for Measuring Autonomy	83
3.6.	Items Selected for Measuring Environmental Uncertainty	84
3.7.	Items Selected for Measuring Organizational Structure	85
3.8.	Items Selected for Measuring Subjective Business Performance Relative to Competitors	86
3.9.	Items Selected for Measuring Subjective Business Performance Relative to Industry	87
3.10.	Sample Profile	89
4.1.	Descriptive Statistics	93-94
4.2.	Reliability Statistics	97-98
4.3.	Construct-wise Reliability of Scales	99
4.4.	Criteria for the Measurement and Validation	101
4.5.	Standardized Factor Loadings and Residuals for Innovativeness Scale	102
4.6.	Psychometric Properties of Innovativeness Scale	103
4.7.	Model Fit Indices and Psychometric Properties of Risk Taking Scale	104
4.8.	Standardized Factor Loadings and Residuals for Proactiveness Scale	105
4.9.	Psychometric Properties of Proactiveness Scale	106
4.10.	Model Fit Indices and Standardized Residuals for Competitive Aggressiveness Scale	107
4.11.	Psychometric Properties of Competitive Aggressiveness Scale	108
4.12.	Standardized Factor Loadings and Residuals for Autonomy Scale	109
4.13.	Psychometric Properties of Autonomy Scale	110
4.14.	Correlation Coefficients between different Dimensions of Entrepreneurial Orientation	112
4.15.	Standardized Residuals Covariances for the Uni-dimensional view of Entrepreneurial Orientation	114
4.16.	Standardized Factor Loadings and Residuals for the Uni-dimensional view of Entrepreneurial Orientation	117
4.17.	Psychometric Properties of Uni-dimensional view of Entrepreneurial Orientation	118

4.18.	Standardized Residuals Covariances for the Multi-dimensional view of Entrepreneurial Orientation	120
4.19.	Psychometric Properties of Multi-dimensional view of Entrepreneurial Orientation	122
4.20.	Assessment of Divergent Validity	123
4.21.	Standardized Factor Loadings and Residuals for Environmental Uncertainty Scale	124
4.22.	Psychometric Properties of Environmental Uncertainty Scale	125
4.23.	Standardized Factor Loadings and Residuals for Organizational Structure Scale	126
4.24.	Psychometric Properties of Organizational Structure Scale	127
4.25.	Results of Exploratory Factor Analysis for Subjective Business Performance Relative to Competitors	130
4.26.	Psychometric Properties of Subjective Business Performance Relative to Competitors Scale	132
4.27.	Results of Exploratory Factor Analysis for Subjective Business Performance Relative to Industry	135
4.28.	Standardized Factor Loadings and Residuals for Subjective Business Performance Relative to Industry Scale	136
4.29.	Psychometric Properties of Subjective Business Performance Relative to Industry Scale	137
4.30.	Results of Exploratory Factor Analysis for Archival Business Performance	140
4.31.	Model Fit Indices and Psychometric Properties of Archival Business Performance Scale	141
5.1.	Classification of Entrepreneurial Orientation into different Categories	144
5.2.	Association between Organizational Demographics and Degree of Entrepreneurial Orientation	145
5.3.	Classification of sub-dimensions of Entrepreneurial Orientation into different Categories	148
5.4.	Association of Age of Firm with Dimensions of Entrepreneurial Orientation	149
5.5.	Association of Size of Firm (based on Annual Turnover) with Dimensions of Entrepreneurial Orientation	150
5.6.	Association of Size of Firm (based on Number of Employees) with Dimensions of Entrepreneurial Orientation	151
5.7.	Association of Nature of Industry with Dimensions of Entrepreneurial Orientation	152
5.8.	Association of Type of Organization with Dimension of Entrepreneurial Orientation	154
6.1.	Standardized Factor Loadings and Residuals of Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective	161

	Business Performance Relative to Competitors	
6.2.	Psychometric Properties of Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Competitors	162
6.3.	Model Fit Indices and Path Coefficients of Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Competitors	163
6.4.	Standardized Factor Loadings and Residuals of Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry	167
6.5.	Psychometric Properties of the Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry	168
6.6.	Model Fit Indices and Path Coefficients of Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry	170
6.7.	Standardized Factor Loadings and Residuals of Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Archival Business Performance	173
6.8.	Psychometric Properties of the Measurement Model for Entrepreneurial orientation (Uni-dimensional) and Archival Business Performance	174
6.9.	Model Fit Indices and Path Coefficients of Entrepreneurial Orientation (Uni-dimensional) and Archival Business Performance	176
6.10.	Standardized Factor Loadings and Residuals of Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors	178
6.11.	Psychometric Properties of the Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors	179
6.12.	Assessment of Divergent Validity	180
6.13.	Critical ratios for the Coefficients of Correlation	180
6.14.	Model Fit Indices and Path Coefficients of Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors	181
6.15.	Standardized Factor Loadings and Residuals of Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry	185
6.16.	Psychometric Properties of the Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry	186
6.17.	Assessment of Divergent Validity	187

6.18.	Critical ratios for the Coefficients of Correlation	187
6.19.	Model Fit Indices and Path Coefficients of Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry	188
6.20.	Standardized Factor Loadings and Residuals of Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance	192
6.21.	Psychometric Properties of the Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance	193
6.22.	Assessment of Divergent Validity	194
6.23.	Critical ratios for the Coefficients of Correlation	194
6.24.	Model Fit Indices and Path coefficients of Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance	195
6.25.	Model Fit Indices and Structural Parameters Estimates of various Models of Entrepreneurial Orientation - Business Performance Relationship	201
6.26.	Chi- Square Difference Test among different Models of Entrepreneurial Orientation- Business Performance Relationship	202
7.1.	Classification of sample based upon the score of Environment Uncertainty	206
7.2.	Moderation effects of Environmental Uncertainty on Entrepreneurial Orientation - Business Performance Relationship	208
7.3.	Classification of sample based upon the score of Organizational Structure	216
7.4.	Moderation effect of Organizational Structure on Entrepreneurial Orientation - Business Performance relationship	218

## LIST OF FIGURES

<b>Figure No.</b>	<b>Title of Figure</b>	<b>Page No.</b>
4.1.	CFA Model for Innovativeness	102
4.2.	Revised CFA Model for Innovativeness	103
4.3.	CFA Model for Risk Taking	104
4.4.	CFA Model for Proactiveness	105
4.5.	Revised CFA Model for Proactiveness	106
4.6.	CFA Model for Competitive Aggressiveness	107
4.7.	Revised CFA Model for Competitive Aggressiveness	108
4.8.	CFA Model for Autonomy	109
4.9.	Revised CFA Model for Autonomy	110
4.10.	CFA Model for Uni-dimensional view of Entrepreneurial Orientation	113
4.11.	Revised CFA Model for the Uni-dimensional view of Entrepreneurial Orientation	116
4.12.	CFA Model for the Multi-dimensional view of Entrepreneurial Orientation	119
4.13.	Revised CFA Model for the Multi-dimensional view of Entrepreneurial Orientation	121
4.14.	CFA Model for Environmental Uncertainty	124
4.15.	Revised CFA Model for Environmental Uncertainty	125
4.16.	CFA Model for Organizational Structure	126
4.17.	Revised CFA Model for Organizational Structure	127
4.18.	CFA Model for the Subjective Business Performance Relative to Competitors	128
4.19.	Scree Plot diagram for Subjective Business Performance Relative to Competitors	130
4.20.	Second order CFA Model for Subjective Business Performance Relative to Competitors	131
4.21.	Revised CFA Model for the Subjective Business Performance Relative to Competitors	132
4.22.	CFA Model for Subjective Business Performance Relative to Industry	133
4.23.	Scree Plot diagram for Subjective Business Performance Relative to Industry	134
4.24.	Second order CFA Model for Subjective Business Performance Relative to Industry	136
4.25.	Revised CFA Model for Subjective Business Performance Relative to Industry	137
4.26.	CFA Model for Archival Business Performance	139
4.27.	Scree Plot diagram for Archival Business Performance	140

4.28.	Second order CFA Model for Archival Business Performance	141
6.1.	Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Competitors	160
6.2.	Structural Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Competitors	164
6.3.	Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry	166
6.4.	Structural Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry	169
6.5.	Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Archival Business Performance	172
6.6.	Structural Model for Entrepreneurial Orientation (Uni-dimensional) and Archival Business Performance	175
6.7.	Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors	177
6.8.	Structural Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors	182
6.9.	Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry	184
6.10.	Structural Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry	189
6.11.	Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance	191
6.12.	Structural Model for Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance	196
7.1.	Conceptualized Model of Moderating effect of Environmental Uncertainty on Entrepreneurial Orientation – Business Performance Relationship	205
7.2.	Unconstrained Model of Entrepreneurial Orientation - Business Performance Relationship for different Configurations of Environmental Uncertainty	207
7.3.	Constrained Model of Entrepreneurial Orientation - Business Performance Relationship for different Configurations of Environmental Uncertainty	207
7.4.	Moderating effects of Environmental Uncertainty on Innovativeness-Business Performance Relationship	210
7.5.	Moderating effect of Environmental Uncertainty on Proactiveness-Business Performance Relationship	211
7.6.	Moderating effect of Environmental Uncertainty on Risk Taking - Business Performance Relationship	212

7.7.	Moderating effect of Environmental Uncertainty on Competitive Aggressiveness - Business Performance Relationship	213
7.8.	Moderating effect of Environmental Uncertainty on Autonomy - Business Performance Relationship	214
7.9.	Conceptualized Model of Moderating effect of Organizational Structure on Entrepreneurial Orientation – Business Performance Relationship	215
7.10.	Unconstrained Model of Entrepreneurial Orientation - Business Performance Relationship for different Organizational Configurations	217
7.11.	Constrained Model of Entrepreneurial Orientation- Business Performance Relationship for different Organizational Configurations	217
8.1	Redefined Model of Entrepreneurial Orientation - Business Performance Relationship	222



## LIST OF ABBREVIATIONS

<b>Sr. No.</b>	<b>Description</b>	<b>Abbreviation</b>
1	Adjusted Goodness of Fit Index	AGFI
2	Akaike Information Criterion	AIC
3	Average Variance Extracted	AVE
4	Bayesian Information Criterion	BIC
5	Bombay Stock Exchange	BSE
6	Comparative Fit Index	CFI
7	Composite Reliability	CR
8	Confirmatory Factor Analysis	CFA
9	Degree of Freedom	Df
10	Expected Cross-Validation Index	ECVI
11	Goodness of Fit	GOF
12	Goodness of Fit Index	GFI
13	National Stock Exchange	NSE
14	Non-normed Fit Index	NNFI
15	Normed Fit Index	NFI
16	Parsimony Goodness of Fit Index	PGFI
17	Parsimony Normed Fit Index	PNFI
18	Root Mean Square Error of Approximation	RMESA
19	Root Mean Square Residual	RMR
20	Standardized Factor Loadings	SFL
21	Structure Equation Modeling	SEM
22	Tucker Lewis Index	TLI

# CHAPTER - I

## INTRODUCTION

There is growing realization about potential contribution of entrepreneurship towards the economic development in both the developed and the developing countries (Stevenson and Jarillo, 1990; Yusuf, 2002; Murimbika and Urban, 2013). Entrepreneurship, because of its unique characteristics, plays an important socio economic role in employment generation, resource utilization and overall economic growth (Brown and Eisenhardt, 1998; Carree *et al.*, 2002; McMullen and Shepherd, 2006; Hisrich *et al.*, 2007; Kaya and Agca, 2009; Hafeez *et al.*, 2012; Ullah *et al.*, 2013). It expands the economic capacity of an economy and provides solution for various economic problems. Schumpeter (1942) has described entrepreneurship as an engine of economic growth. Greater is the entrepreneurial activity of a nation, the faster is the growth of its economy. Introduction of new and improvised products, services, technologies and administrative processes replace imports by home production and save the wealth of the nation (Jacobs, 1984). Entry of new entrepreneurs creates a healthy competition among existing business entities and makes the marketplace more dynamic and competitive (Lumpkin and Dess; 1996; Antoncic and Hisrich, 2004; Adegbite *et al.*, 2008). Entrepreneurial endeavours of a nation not only encourage new entrants to enter into market but such initiatives also encourage existing business enterprises to become more entrepreneurial.

The role of entrepreneurship in economic growth involves more than just increasing output or income per capita. It involves initiating and constituting changes in the structure of business as well as accelerating the generation, dissemination and application of innovative ideas, products and services. The conception and effective implementation of any individual project, irrespective of its size, largely depends on the availability and capability of innovative entrepreneurs. Instead of being dependent on the government subsidies and protections, these entrepreneurs have to play the role of change agent (Stevenson and Jarillo, 1990; Yusuf, 2002; Murimbika and Urban, 2013). Their ability to innovate and take risk decides the fate and direction of an economy. Today, it

has been seen that public policies of many developing countries are designed to increase the pool of entrepreneurs and to promote the formation of business activities.

Entrepreneurship is an engine of economic growth and the advancement of any economy is dependent upon the intensity of the entrepreneurial initiatives taken by policy makers (Schumpeter 1934; Stevenson and Salilman, 1986; Timmons and Spinelli, 1994; Brown and Eisenhardt, 1998; Tang and Koveos, 2004; Kraus *et al.* 2011; Ullah *et al.*, 2013). An institutional environment that encourages entrepreneurship has the potential of creating numerous employment opportunities. Entry of new firms may result in shifting resources away from existing firms and may impact the stage of market equilibrium. It has been seen that innovative entrepreneurs produces even very ordinary and standard products in highly innovative ways - which may result in low cost, better quality, rapid production, and faster distribution - and advances society by raising the standard of living. As such, the 'dynamic equilibrium' achieved by a constantly innovating entrepreneur could generate the conditions for (i) increased opportunities for employment, (ii) additional wealth creation, (iii) introduction and dissemination of new methods and technology, and (iv) overall economic growth.

Entrepreneurship in the language of an economist is the capacity of an individual to innovate. It refers to an individual's ability to transform an idea into action with accurate economic and social purpose. It evolves a whole range of aptitude like the capacity to bear risk, to forecast prospects of an enterprise, confidence and competence to meet unforeseen and adverse situations (Fayyaz *et al.*, 2009). It is a process that causes changes in economic system through opportunity seeking and forward looking behaviour (Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996).

The concept of entrepreneurship has evolved in last three centuries from risk taker (Cantillon, 1734); to organizer (Jean-Baptiste Say, 1836); to innovator (Schumpeter, 1934); to creator or founder of new enterprises (Lumpkin and Dess, 1996). Literature reveals that a wide diversity of approaches has been used to portray entrepreneurship (Lachman, 1980; Low and MacMillan, 1988; Stevenson and Jarillo, 1990; Cunningham and Lischeron, 1991). Some approaches emphasize on what entrepreneur does i.e. behaviour theory of entrepreneurship (Morris and Lewis, 1995; Lumpkin and Dess, 1996;

Zahra and Garvis 2000; Lee *et al.*, 2001; Yusaf, 2002; Krauss *et al.*, 2005; Kreiser and Davis, 2010; Grande *et al.*, 2011), others focus on who he is i.e. trait theory of entrepreneurship (Carland *et al.*, 1984; Stevenson and Gumpert, 1985; Stevenson and Salilman, 1986; Gartner, 1988, 1990). Indeed, the concept has been utilized to reflect diverse activities, like, managing an entrepreneurial venture, adapting to innovative practices, introducing new products or business ideas, and creating a new enterprise etc. One view conceives entrepreneurship as a function of making decisions about goals of an organization, where the role of entrepreneur is to manage a business organization for the prime purpose of profit, growth and wealth creation (Carland *et al.*, 1984). Another view considers opportunity seeking and risk taking attitude as the essence of entrepreneurial behaviour (Miller, 1983, 1988; Covin and Slevin, 1989; Lumpkin and Dess, 1996, 2001; Wiklund and Shepherd, 2003, 2005; Kraus *et al.*, 2012).

There is no common definition of entrepreneur and entrepreneurship (Davidsson, 1991; Rauch *et al.*, 2009; Williams *et al.*, 2010; Yu, 2012; Huang and Wang, 2013). The term *entrepreneur* is often used to reflect a person, who creates a new enterprise and accepts the full responsibility of its functioning. Webster's dictionary captures some of the original nuances of this term by defining entrepreneur as 'one who organizes a business undertaking and assumes risk for the sake of profit' (Guralnik, 1982). According to Jean-Baptiste Say (1836) a French economist, an entrepreneur is one who undertakes a business entity, especially as an organizer and acting as an intermediary between other factors of production i.e. land, labour and capital. According to Say, entrepreneur organizes various factors of production in a way that creates value for product and generates rent for land, wages for labour, interest for capitalist and profit for entrepreneur. Alfred Marshall (1930) has incorporated his interpretation to the term entrepreneurship, by adding that an entrepreneur must have the capabilities to manage with and through other people and must be constantly alert to seek opportunities or innovate in order to minimize cost and make progress. According to Kilby (1971), the entrepreneur is one, who performs functions like exchange relationships, practical administration, management control and technology management. Where exchange relationship focuses on: (a) perceiving opportunities in market, (b) gaining command

over scarce resources, (c) purchasing inputs, and (d) marketing of products and responding to competitors; Practical administration includes: (a) dealing with public bureaucracy, (b) management of human relationship within the venture, and (c) management of customer and supplier relationship; Management control has (a) financial management and (b) production management, as its integral part. Technology management includes: (a) acquiring and overseeing the assembling of the product, (b) industrial engineering, and (c) upgrading process and product qualities. According to Okpara (2007), entrepreneur is a person, who has a vision, courage and ability to establish an enterprise not only for his own economic benefit, rather for the benefit of society as a whole.

The term *entrepreneurship* has been derived from the French verb '*entreprendre*', which means to undertake. Richard Cantillon (1734), a French economist, formally introduced the term 'entrepreneurship' in economics and management literature. Cantillon emphasizes on two main functions of entrepreneur: (a) risk taking and (b) uncertainty bearing. He considers entrepreneurship as the dynamic factor of production among land, labour, and capital. This factor assumes the responsibility and risk for bringing the other production factors together in order to make profit out of situational opportunity.

Schumpeter (1934) has described entrepreneurship as an event which includes introduction of (i) new products, (ii) new production methods, (iii) new markets, (iv) new source of supply, and (v) new forms of organization. He reveals that an entrepreneur is one who combines the various input factors in such a manner that will generate a greater output and helps in generating wealth by creating demand in the market from a newly introduced innovation (Schumpeter, 1934).

Drucker (1985) considers entrepreneurship as the pursuit of a discontinuous opportunity involving the creation of an organization with the expectation of creating value for participants. He supports his argument by stating that the new organization may or may not become profitable, but by creating an organization, one may enter into the entrepreneurship paradigm. Lumpkin and Dess (1996) echoed Drucker by clarify that 'new entry (that is entering into new or established market with new or existing products)

is an essential act of entrepreneurship'. According to Nelson (1997), entrepreneurship is a process in which entrepreneur constantly scan environment, identify possibilities, acquire necessary resources, and finally translate the environmental opportunity into a concrete action. Entrepreneurship is a cognitive process of transforming an innovative idea into a value adding product or creating a new enterprise (Schumpeter, 1934; Lumpkin and Dess, 1996; Nelson 1997; Morris *et al.*, 2011). Recognition and exploitation of opportunities that exist in marketplace is a fundamental activity of entrepreneurship (Lumpkin and Dess, 1996; Nelson, 1997; Morris *et al.*, 2011).

Venkatraman (1989) clarifies that entrepreneurship is all about how opportunities are discovered, evaluated and exploited. Nielsen *et al.* (1985) have viewed entrepreneurship as a creative process that demands willingness, courage and capabilities from an entrepreneur to create value - by doing something different and innovative; by assuming financial, psychological and social risk. According to Hisrich and Peters (1989), the process of entrepreneurship involves four distinct principles including the creation of new values, dedication of time and efforts, risk bearing assumptions and personal rewards that include independence, personal satisfaction and at times, financial gain.

Stevenson and Gumpert (1985) describe entrepreneurship from the perspective of value creation. They consider entrepreneurship as 'the creation of value by people and organizations, working together to implement an idea through the application of creativity, drive, and a willingness to take what might commonly be seen as risk'. Entrepreneurship is a combination of vision, leadership and desire to build a sustainable entity. Shane and Venkatraman (2000) describe entrepreneurship as a process of value addition through exploration and exploitation of opportunities. In this context, Hitt *et al.* (2001) have suggested that an appropriate set of resources in dynamic environment is one of the pre requirements to exploit various environmental opportunities. Stevenson and Jarillo (1990) have stated that entrepreneurship is a process of creating value by bringing together a unique package of resources to exploit an opportunity.

Kraus *et al.* (2012) suggest that skilful strategic management of resources by an entrepreneurial firm enhances its competitiveness and often results in higher value for

both producers and consumers. Entrepreneurship is not only restricted to the exploration of opportunities rather the behaviour which brings the innovation to fruition - willingness and courage to assume risk on the face of opportunity- reflects the true spirit of entrepreneurship. Covin and Slevin (1991) have considered entrepreneurial behaviour as the essence of entrepreneurial actions and claim that entrepreneurial intensity of a firm is often reflected through the operating management philosophy of its top management. According to Miller (1983), an entrepreneurial firm is a firm that “engages in product market innovations, undertakes somewhat risky ventures, first to come up with proactive innovations and beating competitors to the punch” (Miller, 1983).

Kreiser and Davis (2010) have considered ‘opportunity seeking and forward looking perspective involving introducing new products or services ahead of the competition and acting in anticipation of future demand to create, change and shape the firm’s environment’ as essential elements of entrepreneurship. Entrepreneurship is not limited to the establishment of new organization; it may involve reinvigoration of mature organizations by creating a new or improving upon a current innovation (Audretsch *et al.*, 2009; Majid *et al.*, 2011).

Entrepreneurship has been long defined by various authors. Particularly, two primary schools of thought have evolved in defining entrepreneurship. There are studies (e.g. Carland *et al.*, 1984; Stevenson and Gumpert, 1985; Stevenson and Salilman, 1986; Gartner, 1988, 1990; Gartner *et al.*, 1992), who focuses on individuals and their personality traits i.e. *Trait oriented approach*. The trait approach build on the presumption that the entrepreneurs have a particular personality profile that is different from that of non-entrepreneurs. This approach primarily emphasises on identifying personality characteristics that are unique for entrepreneurs, as a key to explain the entrepreneurship phenomenon. But this approach has been heavily criticised due to its incompleteness and its one dimensional nature i.e. focusing solely on the personality of the entrepreneur. On the other side, there are studies (e.g. Miller, 1983; Stevenson and Gumpert, 1985; Low and MacMillan 1988; Lumpkin and Dess, 1996; Wiklund and Shepherd, 2003; Kreiser and Davis, 2010; Kraus *et al.*, 2012), which focuses upon the behavioural aspects of entrepreneurs i.e. *Behaviour theory of entrepreneurship*.

Behavioural scientists consider entrepreneurship as a cohesive pattern of managerial behaviour, where entrepreneur/s, as an individual or a team, scan environment, identify and recognise various situational opportunities, determine enterprise model, handle uncertainties, take necessary business related chance, collect necessary resources, creates an entity and finally gets the desired outcome (Venkatraman 1989; Nelson, 1997; Shane and Venkatraman, 2000; Morris *et al.*, 2011). The behaviour theory of entrepreneurship (also known as process-oriented approach) looks entrepreneurship from the perspective of entrepreneurial behaviour and has considered entrepreneurial behaviour as the central point of all entrepreneurial activities (Miller, 1983, 1988; Covin and Slevin, 1989, 1991; Lumpkin and Dess, 1996; Wiklund, 1999; Zahra and Garvis 2000; Kreiser and Davis, 2010). The concept has been used to reflect diverse activities, like, managing an entrepreneurial venture, adapting to innovative practices, introducing new product or business idea, and creating a new enterprise.

Stevenson and Jarillo (1990) explain this phenomena with the help of ‘*why*’ and ‘*how*’ of entrepreneurship. According to them *why* dimension of entrepreneurship is associated with psychology and other sciences that seek to explain why entrepreneurship occurs and the *how* of entrepreneurship, represents entrepreneurial behaviour i.e. how entrepreneurship is undertaken? or how entrepreneur instrument entrepreneurship in the course of actualizing their career objectives?

The focus of entrepreneurship is on new entry. However, it has generally been seen that only a few of the new entrants are able to convert themselves into a successful business venture. The key question is - what makes an organization successful? Scholars in the field of strategic management and entrepreneurship have considered *entrepreneurial orientation* as one of the key determinant of organizational success. Entrepreneurial orientation is the reflection of the strategic orientation of a firm and discloses the extent, to which a firm promotes innovativeness, demonstrates proactiveness, favours risk taking, showcases competitive aggressiveness and provides autonomy to its employees. It reveals a unique combination of organizational strategy, culture, and structure, in response to the environmental challenges, for achieving higher organizational performance. It discloses *how* a firm operates, i.e. how key decision



makers behave while enacting firm's vision, mission and purpose. According to Stevenson and Jarillo (1990), it is *how* of entrepreneurship which is associated with the field of management and entrepreneurial orientation actually deals with *how* of entrepreneurship.

There is a little consensus among researchers on the definition of entrepreneurship. Yet for the purpose of this thesis, we define entrepreneurship as *a process of creating a new enterprise or reinvigoration of mature organizations by creating a new or improving upon a current innovation. It is the act of being an entrepreneur, where entrepreneurial agent, either a single person or group of person, takes up personal responsibility to bring the entrepreneurial event to successful business enterprise.*

## **CHAPTER- II**

### **REVIEW OF LITERATURE**

The theory and methodology of this study has been built upon the foundation of past research and theory development in the field of entrepreneurship. The purpose of this chapter is to present the theme-wise summary of the review made for deciding the need and objectives of the present study. The following sections present the review of the past studies.

#### **2.1: Entrepreneurship**

The literature reveals the systematic development of the construct of entrepreneurship, where first half of 20<sup>th</sup> century was devoted towards defining the term entrepreneurship and identifying the role of entrepreneurship in the economic development (Say, 1836; Marshall, 1930; Schumpeter, 1934, 1942; Burns and Stalker, 1961; McClelland, 1961). During 1960's and 1970's, the focus shifted towards identification of factors affecting entrepreneurship i.e. why entrepreneurs start enterprises? During this phase entrepreneurship was associated with various individual and demographic traits, which encourage individuals towards entrepreneurship. Factors such as need for achievement, locus of control, self-efficacy, risk taking propensity, family influence, educational influence, work experience etc. along with various demographic characteristics were identified as antecedents of entrepreneurial behaviour (Hagen, 1963; Kilby, 1971; Mintzberg, 1973; Weick, 1976; Lachman, 1980; Conley, 1984).

In 1980's and 1990's, entrepreneurial research moved towards behavioural aspects and focused towards the identification of the dimensions of entrepreneurial orientation and fit between the entrepreneurial orientation and strategy models, which align the level of entrepreneurial orientation with different business strategies (Miller and Friese, 1982; Burgelman, 1983; Galbraith and Kazanjina, 1986; Miller and Toulouse, 1986; Covin and Slevin, 1989; Zahra and Covin, 1993; Lumpkin and Dess, 1996; Barringer and Bluedorn, 1999). Entrepreneurial opportunity recognition process again caught the attention of researchers during 1990's (Gartner, 1988; Venkatraman, 1989;

Bygrave and Hofer, 1991; Shaver and Scott, 1991; Venkatraman, 1997). Last two decades witnessed major developments in the area of entrepreneurial orientation - business performance relationship and adoption of contingency framework to entrepreneurial orientation - business performance relationship (Covin and Slevin 1989; Wiklund, 1999; Wiklund and Shepherd, 2005; Stam and Elfring, 2008; Kreiser and Davis, 2010; Grande *et al.*, 2011; Tang and Tang, 2012; Grimmer *et al.*, 2013; Ullah *et al.*, 2013; Schepers *et al.*, 2014).

## **2.2: Entrepreneurial Orientation**

*Entrepreneurial Orientation* has gained considerable attention of researchers and has become a major area of investigation for management practitioners. It discloses the strategic orientation of a firm and has often been conceptualized as the extent to which a firm showcases innovativeness, demonstrates proactiveness, prefers risk taking, shows competitive aggressiveness and provides autonomy to its employees (Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996; Krauss *et al.*, 2005; Kreiser and Davis, 2010; Grande *et al.*, 2011; Kreiser *et al.*, 2013; Grunhagen *et al.*, 2014).

Covin and Slevin (1989) argue that an organization's entrepreneurial orientation is the summation of the extent to which top managers are inclined to take business related risk, to favour change and innovation in order to obtain a competitive advantage for their firm, and to compete aggressively with other firms. They suggest that the strategic posture of a firm can vary anywhere on a continuum from a fully conservative orientation to a completely entrepreneurial one, based upon the operating management philosophy of the firm's top management. They posit that firm's with a propensity to engage in relatively high levels of risk taking, innovativeness, and proactiveness have *entrepreneurial orientation* while those engaging in relatively low levels of these behaviour have *conservative orientation*.

Wang (2008) considers entrepreneurial orientation as the proclivity of a firm's top management to assume risk, to demonstrate creative behaviour, and to showcase proactive and aggressive behaviour towards rivals. However, Stevenson and Jarillo (1990) have suggested that an entrepreneurial orientation is not only created or imposed

by firm's top management rather it is to be exhibited by multiple layers of management. According to Mintzberg (1973), entrepreneurial orientation is the reflection of strategic posture and is deeply related with strategy making process. Entrepreneurial orientation is an organization wide concept and includes different aspects of firm's culture and value system (Hart, 1991).

Entrepreneurial orientation has also been conceptualized as a process construct (Lumpkin and Dess, 1996), which is concerned with the behaviour of managers while realizing their organizational objectives i.e. 'in what way do entrepreneurs go through the entrepreneurial process?', 'how do entrepreneurs behave while trying to be entrepreneurially different from others?', and 'how entrepreneurial activities are to be implemented?' Entrepreneurial orientation not only reflects the methods, policies and processes adopted by the managers, but also manifests entrepreneurial behaviour.

Entrepreneurial orientation is a multi faceted construct, which reflects how a business is to be organized. Researchers have used this concept to reflect different facets of entrepreneurial behaviour e.g. Covin and Slevin (1989) have considered entrepreneurial orientation as an aggregated measure of innovativeness, risk taking and proactiveness - which reflects the strategic orientation of a firm. According to Lumpkin and Dess (1996), entrepreneurial orientation is a process construct and reflects the methods, practices, and decision making styles used by the managers. Lumpkin and Dess have added the dimension of autonomy and competitive aggressiveness under the conceptualization of entrepreneurial orientation. They consider entrepreneurial orientation as a multi dimensional construct, under the assumption that the contribution of each of the dimension of entrepreneurial orientation towards firm's performance is unique and contextual. Ireland *et al.* (2003) have defined entrepreneurial orientation as an opportunity-seeking behaviour and describe entrepreneurial leadership as a critical element of entrepreneurial orientation. However, the construct of entrepreneurial orientation has also been used to represent the set of personal psychological traits, values, attributes, and attitudes that strongly relate with motivation to engage in entrepreneurial initiatives (Kilby, 1971; Mintzberg, 1973; Miller and Toulouse, 1986; Kraus *et al.*, 2005; Poon *et al.*, 2006).

There are diverse opinions about the common meaning of the term entrepreneurial orientation, yet based upon the above arguments *entrepreneurial orientation has been conceptualized as a firm level construct, which reflects the operating management philosophy of firm's top management. It is the reflection of the strategic posture of a firm and discloses how a firm operates, i.e. how key decision makers behave while enacting firm's vision, mission and purpose(s). The key dimensions that portray entrepreneurial orientation include firm's proclivity to take calculated risk, to showcase innovativeness, to act autonomously, to demonstrate proactiveness and to compete aggressiveness.*

### **2.3: Entrepreneurship Vs. Entrepreneurial Orientation**

Entrepreneurship and entrepreneurial orientation are two different research areas and the distinction between these two can be made based upon the literature available on *content* and *process* construct (Bourgeois, 1980, 1984). Entrepreneurship is a research question related to *content* i.e. 'what entrepreneurship consists of' and generally addresses the basic question of strategy content, i.e., 'what business do we enter' (Lumpkin and Dess, 1996). The answer to this question helps a firm in defining its product line and product range (Matsuno *et al.*, 2002; Gupta and Pandit, 2012). Entrepreneurial orientation, on the other hand, is a research question related with *process* of entrepreneurship i.e. 'how entrepreneurs instrument entrepreneurship in the course of actualizing their career objectives?' The focus of the entrepreneurial orientation is on the policies, practices, procedures, methods and decision-making styles used by entrepreneurs to enact entrepreneurship (Lumpkin and Dess, 1996).

Stevenson and Jarillo, 1990 have introduced the concept of '*what*' and '*how*' to differentiate entrepreneurship and entrepreneurial orientation. *What* of entrepreneurship is related with the selection of primary line of business and helps in the conceptualization of the term entrepreneurship. Whereas *how* of entrepreneurship is related with the entrepreneurial behaviour and deals with issues such as: 'In what way do entrepreneurs go through the entrepreneurial process?', and 'how do entrepreneurs behave while trying to be entrepreneurially different from others?' It is the *how* of entrepreneurship, which provides a base for the conceptualization of the term entrepreneurial orientation.

As far as the relationship between entrepreneurship and entrepreneurial orientation is concerned, with the maturity of the entrepreneurship construct, the emphasis has been shifted from *content* to *processes*, from *what* to *how* i.e. from *entrepreneurship* to *entrepreneurial orientation*. Focus of entrepreneurship is on new entry. New entry can be accomplished by entering new or established market with new or existing goods or services (Burgelman, 1983). Entrepreneurial orientation is related with the process of converting ‘new entry’ into a successful business venture. Entrepreneurial orientation actually describes ‘how entrepreneurship is to be undertaken?’, or ‘in which way the ‘content’ is to be undertaken for making it a successful venture?’ This often requires a firm: to invest in unknown new technologies, products and processes; to try the ways which are different from the existing; to undertake risky ventures; to adopt forward looking perspectives involving introducing new products or services ahead of the competition and acting in anticipation of future demand; to directly and intensely challenge its competitors for protecting firms current market share and to equip organizational members with necessary freedom to bring forth an idea or a vision and carrying it through to completion. The essence of entrepreneurial orientation is on how a firm operates in realizing its vision and mission (Lumpkin and Dess, 1996).

#### **2.4: Entrepreneurial Orientation: A Firm Level Construct**

Entrepreneurial orientation is an important measure of the way a firm is organized. It has been often conceptualized as the processes and decision making activities used by firms to act entrepreneurially (Lumpkin and Dess, 1996, 2001; Rauch *et al.*, 2009; Kreiser and Davis, 2010; Ullah *et al.*, 2011). Although the construct of entrepreneurship was firstly developed as an individual level construct and refers to the behaviour of individuals, who go against the odds in transforming their vision into a successful business venture. But as the field of entrepreneurship became mature, the focus shifted from individual level analysis to firm level analysis, from ‘content’ to ‘process’, and from ‘what’ to ‘how’ i.e. from entrepreneurship to entrepreneurial orientation. Individual behaviour is difficult to predict and hard to change, whereas firm behaviour can easily be adjusted by changing the policies and strategies of a firm (Kilmann and Covin, 1988). It becomes more

practical and practicable for management practitioners to see the impact of different strategic postures on the firm's performance by modifying and adjusting various policies and strategies of a firm in accordance with its environment (Stevenson *et al.*, 1989; Bygrave and Hofer, 1991).

Entrepreneurs need a vehicle for realizing their career ambition, firm provides such a vehicle. At times, for formation and implementation of large projects, entrepreneur requires access to various kinds of material and non material resources, functions of the multiple layers of management and continuous interaction of organizational strategy with environmental forces (Burgelman, 1983; Birkinshaw, 1995). It is a firm level conceptualization of entrepreneurial orientation which ensures the availability of necessary mechanism for entrepreneurs to enact their vision. It is within a firm, where entrepreneurs' entrepreneurial orientation related activities are executed - as a response to the environmental challenges. As a consequence of above arguments, the conceptualization and operationalization of entrepreneurial orientation is normally conducted at a firm level and entrepreneurial orientation has generally been considered as a firm level construct (Covin and Slevin, 1989; Morris and Lewis, 1995; Lumpkin and Dess, 1996; Kreiser *et al.*, 2002; Richard *et al.*, 2004; Kreiser and Davis 2010; Gupta and Pandit, 2012; Grimmer *et al.*, 2013).

## **2.5: Dimensions of Entrepreneurial Orientation**

Entrepreneurial orientation is the reflection of the strategic orientation of a firm and has often been conceptualized and operationalized on the basis of three dimensions identified by Covin and Slevin (1989), i.e. innovativeness, risk taking, and proactiveness. Lumpkin and Dess (1996) have considered entrepreneurial orientation as a process construct and added two more dimensions i.e. 'autonomy' and 'competitive aggressiveness', under the conceptualization of entrepreneurial orientation. Thus, entrepreneurial orientation has often been conceptualized as having anywhere from three to five dimensions. However, the use of Covin and Slevin's conceptualization and operationalization of entrepreneurial orientation has been witnessed more prominently in entrepreneurship and strategic management research (e.g. Naman and Slevin, 1993; Becherer and Maurer, 1997; Barrett

*et al.*, 2000; Kreiser *et al.*, 2002; Wiklund and Shepherd, 2005; Richard *et al.*, 2004; McMullen and Shepherd, 2006; Naldi *et al.*, 2007; Yener and Aykol, 2008; Tang *et al.*, 2009; Clercq *et al.*, 2010; Hafeez *et al.*, 2012; Taylor, 2013; Grunhagen *et al.*, 2014). The exponents of Covin and Slevin's conceptualization believe that autonomy is an internal organizational driver of entrepreneurship, which influences the organizational climate for entrepreneurship; therefore it is an antecedent of entrepreneurial behaviour (Hadji *et al.*, 2007; Hough and Scheepers, 2008). Competitive aggressiveness forms a part of the proactiveness dimension and does not represent a separate dimension (Hough and Scheepers, 2008; Chang *et al.*, 2011). But at the same time, studies (e.g. Lumpkin and Dess, 1996; Dess and Lumpkin, 2005; Mason, 2006; Hughes and Morgan, 2007; Yang *et al.*, 2007; Lumpkin *et al.*, 2009; Chang *et al.*, 2011; Madhoushi *et al.*, 2011; Gupta and Pandit, 2012; Zellweger and Sieger, 2012) suggest that the five dimensional model better explains organizational performance and each of these dimensions (i.e. innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy) have a unique contribution towards firms success. In the context of present study, five dimensional model of entrepreneurial orientation has been adopted to examine the relationship between entrepreneurial orientation and business performance.

These dimensions have been briefly discussed below:

### **2.5.1: Innovativeness**

Innovativeness is the propensity of an enterprise to engage in and support the culture of experimentation, creativity and novelty (Covin and Slevin, 1988; Damanpour, 1991; Lumpkin and Dess, 1996). It reflects the willingness of a firm to depart from existing practices and to adopt new ways of doing the things (Cornelia, 1996; Covin and Miles 1999; Zahra *et al.*, 1999). Innovativeness entails the continuous efforts of an organization to explore new ideas with regard to technological processes, administrative systems and organizational procedures (Kanter, 1982; Quinn, 1985; Morris and Paul, 1987; Hult *et al.*, 2004). It represents the willingness and ability of a firm to question and abandon - existing or given circumstances, and to create room for creativity, new ideas, and experiments. The objective is to think innovatively, which can manifest itself in the



launch of new products, in the exploration of new markets, and in making improvements in existing processes. Innovativeness reflects the eagerness of an organization to find new opportunities and novel solutions by seeking extraordinary or strange solution to problems and needs (Vij and Bedi, 2012).

According to Schumpeter (1934), innovativeness is the heart of entrepreneurship. He defines entrepreneur as an economic man who tries to maximize his profits by making innovations in all/ any one of the following fields: (i) new products, (ii) new production methods, (iii) new markets, (iv) new source of supply and (v) new forms of organization. Though all these initiatives are important but according to Schumpeter it is the 'introduction of new products', which is more influential, because it directly increases the human welfare, whereas remaining four factors could contribute only if first factor is present i.e. 'introduction of new products'. Drucker (1985) echoed Schumpeter by suggesting that innovation is the explicit instrument of entrepreneurship and a key driver of competitive advantage, growth, and profitability. Without innovation, new products, new services, and unique ways of doing business would not exist (Heunks, 1998; Hultink and Atuahene-Gima, 2000; Wiklund and Shepherd, 2003; Edmondson and Nembhard, 2009). Knight (1997) has defined innovativeness "as the pursuit of creative or novel solution to challenges confronting the firm, including the development or enhancement of products and services, as well as administrative techniques and technologies for performing various organizational functions in effective and efficient manner". The hallmark of an entrepreneurial organization is its capability to create new products and services (Zahra, 1993). According to Wolfe (1994), "willingness to innovate is the most prominent attribute of entrepreneurship". It is the willingness of an entrepreneur that decides how far and how deep the innovation will go in business (Hult *et al.*, 2004).

Covin and Slevin (1989) have defined innovation as "the extensiveness and frequency of product innovation and the related tendency towards technological leadership". They suggest that adoption and deployment of innovative practices can generate competitive advantages and provides a major source of firm growth. According to Bradmore (1996), "innovativeness is the ability of a firm to take quick advantage of scientific or technological discoveries by commercializing them into added-value

products and services”. It is not just the invention of a new product or service, that is important, but actually bringing these new inventions into market in a way that add value or improve quality (Burgelman and Sayles, 1986; Brockman and Morgan, 2003).

Innovativeness entails three distinct points: (i) regularly and continuously nurturing the culture of experimentation to generate new ideas, technologies, processes, products, services, or new markets to create new value or enhance current value for customers; (ii) acquiring, developing, and deploying the new practices and new technologies for advancement of manufacturing processes; (iii) being willing to depart from an existing processes, technologies, systems and techniques.

As far as the degree of innovativeness is concerned, Miller and Friesen (1982) have stated that conservative and entrepreneurial posture defines two ends of innovation continuum. In conservative posture, innovation takes place in response to serious challenges, threats, or environmental instabilities and that too once these are brought to the attention of the organization. Innovation occurs only and only if adequate resources are available. An entrepreneurial posture views innovation as a ‘natural state of affairs’. An entrepreneur will innovate boldly unless it is apparent that resources are being squandered. Gaglio and Katz (2001) have posited that innovation can be divided into five categories on an innovation continuum: (i) Imitative: this kind of innovation simply imitates existing and successful products, services, and/or processes, (ii) Incremental: it represents obvious and expected improvement in the efficiency and/or quality of an existing products, services or processes, (iii) Evolutionary: it represents something new to the person, firm and industry but not to the world, (iv) Radical: it describes a product or process which is based on familiar but reengineered features or technologies resulting in a great leap in performance, and (v) Discontinuous: it represents something new to person, firm, industry as well as the world. However, whatever the form of innovativeness, it represents a basic willingness to depart from existing technologies or practices and venture beyond the current state of the art (Covin *et al.*, 2006).

Innovativeness is a forward looking and novelty oriented approach, which increases the possibility that a firm will realize first mover advantage, stays ahead of their competitors, and gains a competitive advantage. It helps a firm in capitalizing various

emerging market opportunities and might result in the achievement of the strategic goals of an organization. It emphasizes on those processes that transform ideas or concepts into product and services that have commercial importance and add value to enterprise and customers (Kanter, 1982; Kim and Mauborgne, 1997; Rosenbusch *et al.*, 2011).

Though innovativeness increases the frequency of the entry of new products and services in market, but it actually results in the advancement of society through the process of ‘creative destruction’ i.e. by shifting resources away from existing firms to new firms (Schumpeter, 1942). Rosenbusch *et al.* (2011) have considered entrepreneurs as ‘important agents of innovation’, who not only introduce new products and services, but also upgrade the existing technological processes (Winterton, 1997; Van de Ven, 1986; Rosenbusch *et al.*, 2011). Today, it is seen that many firms can gain competitive superiority by producing even very ordinary and standard products by highly innovative processes. These innovative processes provide the advantage of low cost, rapid production, faster distribution (Davila, 2000; Hult *et al.*, 2004). Jennings and Young (1990) have stated that innovation orientation has long term implications and entrepreneurial firms have a tendency to develop higher number of new products or services in longer run as compared to industry average. Zahra *et al.* (2002) have pointed out the importance of innovative strategic posture for firm survival, by arguing that “success in today's competitive environment requires a company to pursue a coherent technology strategy to articulate its plan to develop, acquire, and deploy technological resources to achieve superior financial performance”. Covin and Miles (1999) have also theorized the significance of innovativeness in defining corporate success.

Innovativeness is a comprehensive phenomenon, which not only accelerates the pace of product and service introduction to the marketplace, but also strengthens an organization's competitiveness by hindering or deterring other competitors' willingness to introduce a new product or technology, penetrate the market, or attract customers by blocking the move or making it costly (Downs and Mohr, 1976; Cornelia, 1996; Gimenez; 2000; Wangxiang, 2001; Edmondson and Nembhard, 2009). It brings newness in firm. It revises the firm's knowledge base, allowing it to generate new products, processes, and organizational system that set the company apart from its rivals, as it

expands its operations (Miller and Friesen, 1982; Winterton, 1997; Georgelli *et al.*, 2000; Hitt *et al.*, 2001; Bhuian *et al.*, 2005). The process of innovation makes a firm more flexible and adaptable to the environmental challenges; enhances its internal capabilities and makes it a better fit between the firm and its environment (Burgelman and Sayles, 1986; Hisrich and Peters, 1998; Hult *et al.*, 2004; Rosenbusch *et al.*, 2011).

Based upon above arguments, innovativeness has been conceptualized as *firm's propensity to support and encourage new ideas, experimentation and creativity- likely to result in new products, services, technologies or processes. It dispositions firm' ability to introduce newness and novelty in existing products, services, processes, technologies, systems, techniques, resources, plans, or structures. It reflects the willingness of a firm to depart from existing practices and to adopt new ways of doing the things. It represents willingness and readiness of all organizational members to accept, support, and adopt organizational changes.*

### **2.5.2: Risk Taking**

Risk has often been defined as variability of actual outcomes around an expected average outcome (Armour and Teece, 1978; Fisher, 1993). It reflects the degree of uncertainty or possibility of realising unwanted or negative return associated with entrepreneurial venture (Barrett *et al.*, 2000). According to Sitkin and Pablo (1992), “risk is the extent to which there is uncertainty about whether potentially significant and/or disappointing outcomes of a decision will be realized or not”. From uncertainty Sitkin and Pablo mean - lack of knowledge regarding expected future outcome (March, 1978), chance of variation in possible return (Libby and Fishburn, 1977), and extent of uncontrollability of potential outcome (Vlek and Stallen, 1980).

Risk is a contextual phenomenon (Bowman, 1980; Eisenhardt, 1989; Wiseman and Catanach, 1997; Wiseman and Gomez-Meija, 1998) and the definition of the risk depends upon the context in which it is applied. From the perspective of a business organization, risk can be classified into two categories i.e. business risk and financial risk. Business risk reflects ‘corporate strategic moves that cause returns to vary, that involves venturing into the unknown, and that may result in corporate ruin - moves for

which the outcomes and probabilities may be only partially known and where hard-to-define goals may not be met' (Baird and Thomas, 1985). Business risk is basically related with the pattern of investment i.e. venturing into the unknown new markets, products and processes. Financial risk indicates the willingness of a firm to seize unknown new opportunities by taking bold action such as borrowing heavily (Dess and Lumpkin, 2005). Financial risk is related to the pattern of financing and reflects the propensity of a firm to borrow heavily.

Risk is a paramount attribute of entrepreneurship. Richard Cantillon (1730) describes entrepreneur as a rational decision-maker who bears risk, manage uncertainties and provide the management of the firm. According to Longenecker and Schoen (1978), entrepreneurs cannot be considered as merely risk takers, rather they are actually risk managers who rationally measure risk and deal with risk. According to Cunningham and Lischeron (1991), "risk management is a process in which potential risk to a business is identified, analyzed, mitigated, and prevented, along with the process of balancing the cost of protecting the company against a risk versus the cost of exposure to that risk".

In entrepreneurship and strategic management literature, risk taking has emerged as one of the significant factor affecting the strategic posture of a firm. It reflects the firm's propensity to devote sizeable resources to projects that contain a considerable probability of failure, along with chance of high return (Swierczek and Ha, 2003; Feifei, 2012). It discloses firm's disposition to act quickly and aggressively on the emerging market opportunities, making fast resource combinations and displaying bold actions (Lalley, 1982; Fiegenbaum and Thomas, 1988; Miller and Bromiley, 1990; Lumpkin and Dess, 1996; Saini and Martin, 2009). It primarily focuses upon the behaviour needed to exploit an opportunity. Miller and Friesen (1982) define risk taking as "the degree to which managers are willing to make large and risky resource commitments i.e., those which have a reasonable chance of costly failures". Lumpkin and Dess, (1996) have considered risk taking propensity as the ability of a firm to support projects, whose payoffs are uncertain. According to Kreiser *et al.* (2002), "risk taking propensity reflects the readiness of a firm's top management to take bold actions such as: venturing into unknown new markets and committing a large portion of resources to ventures with

uncertain outcomes”. It discloses the managerial preferences for adoption of bold and aggressive behaviour. Baird and Thomas (1985) have measured risk taking propensity of a firm through its actions such as: (i) committing a relatively large portion of assets on the name of uncertainty, (ii) venturing into the unknown, and (iii) borrowing heavily.

Risk taking propensity not only reveals the willingness of firm’s top management to commit resources to opportunities -whose outcomes are not clear, but it also reflects the culture of a firm (McGrath, 1999). Risk-taking needs a supportive culture, where success will be rewarded while failure will not be penalized. Top management's willingness to take risk and to accept occasional failure motivates others to propose and implement unique and novel solutions. An organizational culture, which support integration, sharing and dissemination of knowledge - across formal and informal channels of communication, encourages organizational members to go beyond tried and tested and to take business related chance (Hornsby *et al.*, 1999; Zahra *et al.*, 1999).

Risk taking propensity of a firm is also affected by characteristics of decision maker, risk tolerance ability of the firm and requirement of the situation i.e. how daring they are (top management team); i.e. how supportive it is (organizational culture); and i.e. how demanding the situation is. Moreover factors such as: how the risk problem is framed (Stewart and Roth, 2001), entrepreneurs’ assessments of risk and result of past risk taking (Covin and Slevin, 1989; Koh, 1996; Goll and Rasheed 1997; Swierczek and Ha, 2003), and the ability to perform under risky conditions (Brockhaus, 1980; Lichtenstein and Brush, 2001; Dimitratos *et al.*, 2004; Soininen *et al.*, 2012) also affects the risk taking ability of the firm.

Risk taking is an inherent characteristic of a business, but it is generally seen that entrepreneurial firms take more amount of risk *viz-a-viz* non- entrepreneurial firms (Masters and Meier, 1988; Lumpkin and Dess, 1996; Sarasvathy *et al.*, 1998; Carland *et al.*, 1999; Falbe *et al.*, 1999; Feifei, 2012). According to Bearse (1982), “entrepreneurial firms are generally believed to take more risk than other firms do, because they often face a less structured and a more uncertain set of business conditions”. Sarasvathy *et al.* (1998) stated that entrepreneurs are more prone to accept risk as a part of day to day business. In fact, the propensity of a firm to seek new opportunities, by introducing new

product or service, is the reflection of risk taking propensity of a firm (Barringer and Bluedorn, 1999; Antoncic and Hisrich, 2004; Islam and Tedford, 2012). In contrast, non-entrepreneurial firms tend to adopt a reactive and risk-averse posture: by employing the policy of ‘wait and see’; by following and imitating competitors; and by maintaining the status quo – which might result in the loss of market share.

Risk is an integral part of business. Though, every business activity (e.g. launch of new product, entry into new market, adoption of new production method, introduction of new technology, processes and services, adoption of an aggressive attitude towards competitors, hiring of managerial personnel, deciding about capital structure etc) involves some degree of risk but the ideal way to cope with risk is to perceive risk at its inception (Cornelia, 1996). Entrepreneurs, in actuality, tend to proactively deal with the risk. They scan firm’s environment, identify potential opportunities, systematically review the level of risk involved in those potential opportunities, match the level of risk with organizational strengths and weaknesses, and create scenarios of likely outcomes to ease or mitigate business risk (Brockhaus, 1980; Lumpkin *et al.*, 2009; Dinu, 2012). This implies that an entrepreneurial firm has to stay tuned to changes not only in its internal environment but also has to monitor, anticipate, and analyze; how exogenous factors (e.g., governmental regulations, policies, technology, and socio-economical conditions) could impact their business (Islam and Tedford, 2012). Begley and Boyd (1987) have posited that entrepreneurs seldom decide to bluntly take risk until a thorough calculation of the potential risk has been made. By taking the calculated risk not only the probability of failure gets reduced (Brockhaus, 1980), but a positive orientation toward risk emerges, which boosts entrepreneur to explore new opportunities (Fiegenbaum and Thomas, 1988, 2004). A well calculated and thoroughly analysed risk often results in robust business performance (Dess and Lumpkin, 2005). In contrast activities undertaken without in-depth analysis of organizational strengths/weaknesses and environmental opportunities/threats may result in corporate ruin (Cunningham and Lischeron, 1991).

Risk taking is a multi facet phenomena and reflect different aspects of organizational culture, but for the purpose of the present study the risk taking propensity has been conceptualized as *the willingness and ability of a firm to take business-related*

*chance, to act boldly, to venture into unknown new markets, and to commit a relatively large portion of assets into ventures where outcome is unclear. It discloses the managerial preferences to go beyond tried-and-tested, while entailing firm's vision. It also reflects the willingness of a firm to promote the culture of risk taking.*

### **2.5.3: Proactiveness**

Proactiveness is an opportunity seeking, forward looking perspective involving introducing new products or services ahead of the competition and acting in anticipation of future demand to create, change and shape firm's environment (Lumpkin and Dess, 1996; Kreiser *et al.*, 2002; Kreiser and Davis, 2010). It is an organizational pursuit for favourable business opportunities. According to Tang and Tang (2012), proactiveness reflects those aspects of firm's strategic posture which aimed at anticipating and acting on future needs by seeking new opportunities which may or may not be related to the present line of operations, introduction of new products and brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of life cycle. Lumpkin and Dess (1996) have used the term proactiveness to depict a firm that is quickest to innovate and first to introduce new products or services. According to Senge (1990), proactiveness is the capacity of a firm to take initiative by exhibiting goal directed behaviour. It reflects firm's propensity to lead rather than to follow (Venkatraman, 1989). Miller and Friesen (1982) have considered proactiveness as a capacity of a firm to present new product or services to the market before their competitors and to shape the environment of a firm in its favour. Proactiveness is a process of considering prospective outcome of an action, in advance of a course undertaken. According to Nordqvist and Zellweger (2010), "proactive firms, in search for new possibilities, always keep their eye on the future and rigorously monitor trends, identify the future needs of existing customers, and anticipate changes in demand or emerging problems". They posit that these firms seek out ways not only to future challenges but by introducing new products and services ahead of their competitors; these firms change the very nature of competition in their industry.



Proactiveness is the ability of a firm to envision its future towards its chosen field (Mwangi and Ngugi, 2014). According to Knight (1997), the emphasis of proactiveness is on aggressive execution and follow through, driving towards achievement of the organizational objectives by whatever means are necessary. Lumpkin and Dess (2001) have conceptualized proactiveness as the ability of a firm to predict future trends and to take actions on these insights ahead of their competitors. Zahra *et al.* (2002) have defined proactiveness from the perspective of alertness of a firm - regarding its environment and stated that activities such as: anticipating change, predicting evolution, and taking initiative not only help these firms in early preparation - prior to the occurrence of an impending uncertainty or risk but such a forward-looking perspective of decision making also helps these firms in acquiring and deploying right kind of resources, ahead of competitors, for fuelling its future growth. Naman and Slevin (1993) reveals that proactiveness is the ability of a firm to take actions in advance of the future problems, demands and changes. According to Oni (2012), “proactiveness is a state of mind and the will, largely driven by ones consciousness, to sustain a vision, to fulfil a mission, to attain a self defined challenging goal”. It is a capacity of a firm to influence and impact its environment and to excel into firm’s selected field. Yener and Aykol (2008) have regarded proactiveness as an opportunistic behaviour and stated that the leaders of entrepreneurial firms often see environmental changes as opportunities rather than looking at them as a trouble.

Proactiveness reflects the ability of a firm to scan its environment, to predict the future changes, to identify probable opportunities, and to take actions on these opportunities earlier than their competitors (Okudan and Rzasa, 2006; Kuratko *et al.*, 2007; Surie and Ashley, 2008). The pursuit of proactiveness is universal phenomenon; almost every business organization shows some degree of proactiveness in its behaviour. Oni (2012) has highlighted the universal nature of the proactiveness by quoting that “most companies do not sometime understand how they experience superior foresight but they do know that proactiveness is simulated by answering questions such as: where to invest, which type of employees to hire, and the like”. However, the magnitude of proactiveness varies across firms and entrepreneurial firms have a higher propensity to

engage themselves in forward looking perspective (Covin and Slevin, 1989). In entrepreneurial firms there is always an ongoing, active search for big opportunities. Wiklund (1999) reveals that entrepreneurial firms scan their environment on continuous basis; collect and evaluate information on technological advancements, cultural trend shift, current and future needs of customers; identify potential opportunities; and respond rapidly on these emerging opportunities by introducing new products/services, administrative techniques and operating technologies *viz-a-viz* their competitors. According to Alvarez and Barney (2007), it is the serious-mindedness of a firm - with which it answers questions such as: which of the products/services of the firm will become enormously valuable to customers in near future?, which of the resources will become most crucial in defining firm success?, how new and proficient procedures of manufacturing, which are unthinkable today, will become feasible by tomorrow? - which actually decides the depth of the proactive behaviour adopted by a firm.

As far as relationship between entrepreneurship and proactiveness is concerned, with regard to entrepreneurship, degree of proactiveness often represented through firm's disposition in adopting pioneering behaviour (Krauss *et al.*, 2005; Tang *et al.*, 2007; Gupta and Pandit, 2012). Proactiveness depicts firm's ability to seize new opportunities - by the way of experimentation and new discoveries (Antoncic and Hisrich, 2004). Although innovativeness is regarded as heart of entrepreneurship (Schumpeter, 1934), but it is the proactiveness, which provides foundation for generation of new ideas, products or services (Pitts and Hopkins, 1982; Kaplan, 1998; McDermott and O'Connor, 2002). In fact, the study by Kaplan (1998) concentrated on the role of market visioning in introducing unique product, service or process. Other studies such as: O'Connor and Veryzer (2001); Tang *et al.* (2009) etc have also affirmed the imminent role of anticipated prospective use in the process of exhilarating radical innovation. Pitt *et al.* (1997) claim that new ideas, products, services and administrative processes will not take place until a firm thinks proactively. According to Oni (2012), "proactive companies focus on the past, present and future with equal zeal, using history to explain, fully understand the present and concentrate on future challenges". With such a comprehensive

approach of collecting knowledge from different sources, in different forms, an entrepreneurial firm can easily shape its environment in its favour.

Proactiveness equips a firm with ability to generate a vision for experimentation and innovation (Tang *et al.*, 2007; Atuahene-Gima and Ko, 2001). According to Sandberg and Hofer (1987), “proactive behaviour towards environment, especially customers in terms of anticipating and influencing their needs, may play an important role in building bridge between the innovation and the firm success”. Proactive approach of organization, not only helps an entrepreneurial firm in finding out an attractive niche for its future growth and development, but such a forward looking approach also assists an entrepreneurial firm in realigning the efforts of its members towards future need and challenges.

Proactiveness is a contextual phenomenon (Lumpkin and Dess, 1996; Schepers *et al.*, 2014) and the degree of proactiveness, demonstrated by a firm, is often affected by the environmental context in which a firm operates. Porter (1985) has affirmed the contextual nature of the construct of proactiveness by quoting that “in certain situations, firm could utilize proactive behaviour in order to increase their competitive position in relation to other firms”. Proactive strategic posture is more appropriate for firms who operate in dynamic environment. In dynamic environment, customer’s taste and preferences change regularly and opportunities emerges on continuous basis; firms which adopt a forward looking perspective, introduce new product and services ahead of their competitors and are first to adjust their marketing and management activities to the changing market needs, are more likely to gain over their competitors (Kreiser and Davis, 2010). Likewise, Helfat (1997) suggests that in dynamic environment, where changes are continuous and opportunities are numerous, firm’s who have the ability and courage to anticipate future demand and to commit significant amount of resources on the name of pioneering behaviour i.e. introduction of new product and services ahead of competitors, are likely to grow faster than non entrepreneurial form. Lumpkin and Dess (2001) have highlighted the role of environmental dynamism and the stage of industry life cycle in describing the contextual nature of proactiveness. They argue that the firm’s which are at

early stage of their industry life cycle or operate under uncertain environment often demonstrates higher degree of proactive behaviour.

Clercq *et al.* (2010) argue that the strategies - which are framed by considering future trends and environmental context, often generate better financial result. According to Zahra and Covin (1995), proactive firms can “target premium market segments, charge high prices and skim the market ahead of their competitors”. Kreiser and Davis (2010) highlight the importance of proactiveness in entrepreneurial success by considering proactiveness as a tool for aligning the actions of an organization with the future needs of the customers. Covin and Slevin (1989) reveal that proactiveness equips the firm with capability to present new products or services to the market before their competitors and to shape the environment in its favour, rather than merely reacting to the competitive environment. According to Zahar (1993), entrepreneurial firms rigorously scan their environment, collect and evaluate information on macroeconomic parameters, analyze current and future needs of customer, took initiatives, and become first mover/pioneer of the industry. By becoming pioneer, these firms hold an upper hand over the market, earn super normal profits, and create unique brand recognition (Lieberman and Montgomery, 1988; Kerin *et al.*, 1992; Awang *et al.*, 2009).

The construct of proactiveness has been long defined by various authors and all of them have contributed a lot in this field and presented different facets of proactiveness. In the context of present study, proactiveness has been conceptualized *as the willingness and capability of a firm to anticipate new developments as early as possible and to act as a ‘first mover’ viz-a-viz competitor, rather than to wait for new developments and trends and then react to them. It indicates (i) a strong tendency to be successfully ahead of competitors in product novelty and innovation, rather than always play as followers; and (ii) a precise growth, innovation and development orientation instead of only being satisfied with, or surviving in status quo.*

#### **2.5.4: Competitive Aggressiveness**

Competitive aggressiveness refers to a firm’s propensity to directly and intensely challenge its competitors to achieve entry or improve position, i.e. to outperform industry

rivals in the marketplace (Lumpkin and Dess, 1996; Krauss *et al.*, 2005; Certo *et al.*, 2009). It reveals the firm's disposition to 'do battle' with their competitors (Lumpkin and Dess, 2001). According to Frese *et al.* (2002), competitive aggressiveness discloses firm's responsiveness directed towards competitive challenge and reveals how an entrepreneurial firm deals with threats (Lumpkin and Dess, 2001; Frese *et al.*, 2002). Covin and Covin (1990) view competitive aggressiveness as a propensity of a firm to dominate competitors by proactive and innovative measures; by initiating actions that competitors then respond to; by being the first to introduce new techniques or products; and by demonstrating an extremely competitive posture. It reveals the extent of firm's assertiveness towards competitive challenges and reflects those aspects of firm's strategic posture which are directed towards 'beating competitors to the punch' (Miller, 1983).

Stone and Brush (1996) have considered protection of existing market share and targeting the customer base of rivals as the fundamental attributes of competitive posture. According to them in the process of attaining the above attributes, an entrepreneurial firm rather relying upon traditional methods of competing, prefer to go for unconventional methods of contesting such as: entering into competitors market with extremely low prices; far and wide tracking of competitors strengths and weaknesses and comparing those with the current capabilities of firm; aggressive spending upon branding and marketing. According to Stambaugh *et al.* (2011), "entrepreneurial firms carefully and continuously monitor and analyze their rivals, are motivated to improve their performance by attacking rival's position, and are ingenious in their deployment of resources to launch attacks". Competitively aggressive firm always looks for measures which at one end protect their current market position, at other end undercut their rivals' position (Lumpkin and Dess, 2005). Chen and Hambrick (1995) have proposed a typology of: deny, defect, and debase attack to reflect competitiveness of firm's actions. *Deny* attack reflect firm's propensity in locking up potential resource from rivals or making it costlier for rival to have access on firm's resources. *Defect* attack emphasise on all those actions which help an entrepreneurial firm in gaining the rival's resources and customers. *Debase* focuses upon degrading the value of resources of rival. By debasing, attackers purposely degrade the value of rival's products and services in the eyes of

potential customers. The focus of defect and debase attack is to gain market share of rival, where as deny attack emphasises on the protection of existing market share of the firm. Competitive aggressiveness not always reflects an offensive posture (Lumpkin and Dess, 1996) but in some of the situations; it may be quite reactive - when a firm defends its market position or aggressively enters a market that a rival has identified.

As far as intensity of the competitive aggressiveness is concerned, there are firms which are satisfied with meeting their internal goals, as compared to firms which consider challenging the rival's position as an appropriate and essential step in fostering their own performance (Shoham and Fiegenbaum, 2002; Fiegenbaum and Thomas, 2004). According to Venkatraman (1989), competitively aggressive firms "set ambitious market share goals and take bold steps to achieve them, such as: cutting prices and sacrificing profitability, spending aggressively on marketing or enhancing manufacturing capacity". The use of tactics such as slashing prices and sacrificing profitability, as a tool to gain additional market share, has been widely seen in literature (e.g. Venkatraman, 1989; Shane and Kolvereid 1995; Atuahene-Gima and Ko, 2001; Morgan and Strong, 2003; Lumpkin *et al.*, 2009) but these actions often trigger vigorous counterattacks and affect the profitability of entire industry, at least in short run. A few studies (e.g. Kopalle *et al.*, 1999; Srinivasan *et al.*, 2000; Edmans *et al.*, 2012) suggest that though price discounting could be a tool to gain additional market share but higher profitability through this action is possible only if increased market share generates economies of scale. The economies of scale seem theoretically attractive but practically these gains are very difficult to attain. As against price cutting, activities like environmental scanning, continuous tracking of rivals capabilities, comparing of own strengths and weaknesses with those of rivals, anticipating various attacks of rivals, preparing strategies for counter attack by indulging in activities like competitive resource modeling, war gaming exercises, and making pre announcements regarding introduction of new products and services etc can better serve the purpose of the protection of current market share and/ or taking rival's market share.

Porter (1985) has considered 'competitive advantage' as a heart of competitive aggressiveness and suggested that a competitive advantage can be achieved: by becoming low-cost producer; by differentiating firm's products from rival; or by targeting a

particular niche. Striving to be the low-cost producer helps a firm in generating cost leadership and is more appropriate for price-sensitive markets. Cost leadership restricts competitors to enter into firm's domain because of cost disadvantage. Cost leadership also helps a firm in protecting and enhancing its market share. Differentiation is a strategy, in which differentiator tries to differentiate its products from rival's products by adding extra features or by adding additional values to its products over rival's products. Focusing strategy could be a best choice when buyer's needs are distinctive and standardised product/ services do not meet the distinctive preferences of a particular set of consumers; or in situations, where a firm may not be in a position to fight with resource-rich competitors (Zahra *et al.*, 2002). Focusing is a strategy where focuser rather than focusing whole market focuses only at a particular niche of the market, where focuser either has cost advantage as compare to resource-rich competitor or where standardised products of rival become inappropriate to satisfy the distinctive preference of a particular set of customers. The basis of selection for a niche could be geographic advantage or capability of firm to offer special product attributes that appeal only to niche members or ability of firm to produce cost effective, high quality products to meet the distinctive preference of niche members.

Though these generic strategies are widely used by different organizations in generating a distinct market position, but these generic strategies are especially important for competitively aggressive firms. Competitively aggressive firm's actively collect and evaluate information regarding the strengths and weaknesses of their rivals and continuously compare the same with the current capabilities of the firm (Stone and Brush, 1996). Based upon their competitive position, these firms carefully monitor their discretionary expenses; identify the scope for cost leadership and focus on high value-added products, either through differentiation or through focusing. Thus, an effective form of competitive aggressiveness helps an entrepreneurial firm in differentiating its products and services from rival's, focusing on a particular niche and exploring the ways to make it difficult for rival to imitate firm's products and services.

As far as relationship of competitive aggressiveness with other attributes of entrepreneurship is concerned, empirical and conceptual arguments quoted in literature

reveal that competitive aggressiveness is a strongly associated with other dimensions of entrepreneurship such as innovativeness and proactiveness. Competitive aggressiveness often helps a firm in leveraging the effect of innovation and proactiveness (Lumpkin and Dess, 2001; Lee and Lim, 2009). Innovativeness and proactiveness equip entrepreneurial firms with the capabilities of introducing new products, processes, technologies and services ahead of their competition and acting in anticipation of future demand to create, change and shape the environment (Lumpkin and Dess, 1996; Kreiser *et al.*, 2002; Stam and Elfring, 2008). But the long term benefit of these initiatives cannot be assured without being competitively aggressive. Undoubtedly, innovative and proactive business practices help entrepreneurial firms in establishing their competitive supremacy in their industry. However this base for competitive advantage is short lived - as powerful rivals often imitate firm's outstanding products and services (Karagozolu and Brown, 1988; Covin and Covin, 1990). So the question arises, how will a firm ensure its long term supremacy? It is the competitive aggressiveness i.e. relying upon competitive intelligence, employing regular benchmarking and indulging in activities such as: competitor response modeling and war gaming exercises etc, which helps a firm in protecting and expanding its market share. The aggressive execution and follow through, generously spending upon branding and marketing, sacrificing profitability and cutting prices to penetrate the market, and making pre announcements regarding introduction of new products and services generally discourage rival's to enter into firms domain or to launch similar initiatives.

The pursuit of competitive aggressiveness theoretically seems attractive but being a competitively aggressive firm means inviting various counter attacks and commitment of sizeable amount of resources. There is substantial variation among firms in their demonstrated levels of competitive aggressiveness (Zajac and Bazerman, 1991; Zahra and Chaples, 1993). The primary reason behind the variation is the commitment of significant amount of organizational resources in the name of assertiveness. The monitoring and analysis functions, inherent attributes of competitive aggressiveness, require a lot of physical and cognitive resources of the firm (Dutton and Jackson, 1987; Ghoshal and Westney, 1991; Ocasio, 1997; Baker and Nelson, 2005; Read and



Sarasvathy, 2005). The most competitively-aggressive firms choose to invest in these processes (Dutton and Duncan, 1987).

Competitive aggressiveness reveals the extent of firm's vigilance regarding its competitive environment and reflects how effectively and aggressively a firm challenges its competitors - to achieve new entry, improve position, or overcome barriers. Competitive aggressiveness increases the level of causal ambiguity and protects the firm's competitive advantage (Reed and Defillippi, 1990). Although the focus of competitive aggressiveness is on protection of firm's current market share but it is a forward looking perspective. Zahra *et al.* (2002) have highlighted the importance of forward looking perspective of competitive aggressiveness by quoting that "effective form of competitive aggressiveness is especially useful in guiding managers' thinking about the types of assets and resources to be acquired, the capabilities to be developed, and the strategic actions to be emphasized". According to Bell and McNamara (1991), "competitive aggressiveness, which is a subset of the environmental scanning process, helps a firm in defining their opportunities and threats, developing strategies that differentiate them from rivals, and avoid competition with resource-rich competitors". An effective form of competitive aggressiveness not only helps managerial personnel in developing better understanding regarding the intensity of the firm's competitive landscape, but it also guides them in strategizing the subsequent use of organizational resources for sustaining the competitive advantage of a firm (Hamel and Prahalad, 1990; Prahalad and Hamel, 1994).

Based upon the forgoing arguments, *competitive aggressiveness has been conceptualized as the propensity of a firm to directly and intensely challenge its competitors and a willingness to be unconventional rather than rely on traditional methods of competing. It discloses the firm's disposition to 'do battle' with their competitors. It reveals the extent of firm's assertiveness towards competitive challenges and reflects those aspects of firm's strategic posture which are directed towards the protection of the current market share of a firm and targeting the customer base of rival.*

#### **2.5.4(a): Relationship between Proactiveness and Competitive Aggressiveness**

Empirical and conceptual arguments quoted in literature (e.g. Miller and Friesen, 1982; Covin and Slevin, 1989) often equate the dimensions of proactiveness with the dimensions of competitive aggressiveness, under the belief that both reflect same attribute of entrepreneurial behaviour. But these two dimensions of entrepreneurial orientation differ from each other in some or other context. Proactiveness reflects the propensity of a firm in introducing new products or services ahead of the competition (Kreiser *et al.*, 2002). Whereas the focus of competitive aggressiveness is on the protection of the benefits gained through proactive actions and taking rival's market share. Proactiveness involves taking initiative - in an effort to shape the environment to one's own advantage; competitive aggressiveness involves being adaptive to competitors' challenges (Lumpkin and Dess, 2001). Proactiveness seeks the attention of the firm towards various future and hidden needs of customers; whereas competitive aggressiveness helps a firm in addressing various express needs of customers. According to Lumpkin and Dess (1996), "proactiveness refers to how a firm relates to market opportunities by seizing initiative in the marketplace; competitive aggressiveness refers to how a firm reacts to competitive trends and demands that already exist in the marketplace". March (1991) has used the terms *exploration* and *exploitation* to differentiate competitive aggressiveness from proactiveness. According to March, "in mature industries, a firm that emphasizes *exploitation* is more likely to succeed via competitive aggressiveness i.e. rivalry based on managing resources and enhancing marginal return by protecting gains made through earlier *exploration*". Lumpkin and Dess (2001) have observed that firm's success at early stage of industry life cycle, where demand is growing and there is a space for multiple entrants, is strongly associated with proactive strategic posture i.e. introduction of new products and services ahead of competitor. In mature industry, where demand is not likely to grow, a firm can succeed by taking the market share of rivals i.e. by adoption of competitively aggressive strategies. Likewise, Helfat (1997) reveals that a dynamic environment, characterized by rapid change and uncertainty, is more favourable to proactive firms relative to competitively aggressive firms. In dynamic environment, where changes are continuous

and opportunities are numerous, firms who have the capacity to anticipate future demand and courage to commit significant amount of resources to introduce new product/services to meet future demand are likely to grow. Whereas in stable and hostile environment, where pace of change is slow, conditions are more or less stable and competition is intense, firms with a greater propensity to challenge competitive position are better placed. The tradeoff between proactiveness and competitive aggressiveness is dependent upon the environmental context in which a firm operates (Kreiser and Davis 2010). Chen and Hambrick (1995) have stated that an entrepreneurial firm often exhibits both proactiveness and competitively aggressive behaviour simultaneously; though their presence varies in strength. Lumpkin and Dess (1996) suggest that proactiveness and aggressiveness can occur simultaneously and sequentially, as both reflect futuristic perspective of a firm. Firstly, organizations look for an attractive niche and once they identify it, they try to protect it. Competitive aggressiveness differs from proactiveness in two ways: (i) it typically refers to a responsive action rather than an anticipatory one, (ii) it is directly aimed at existing competitors rather than at new market or product opportunities (Lumpkin *et al.*, 2009). Hence, competitive aggressiveness indicates a rigid 'undo-the-competitors' posture with less intention to collaborate or coexist.

### **2.5.5: Autonomy**

Autonomy refers to the independent action of an individual or a team in bringing forth an idea or a vision and carrying it through to completion (Lumpkin and Dess, 1996; Chang *et al.*, 2011; Gupta and Pandit, 2012). It point outs the will and ability of an individual or a team, to be self-directed in the pursuit of an opportunity (Krauss *et al.*, 2005; Hughes and Morgan, 2007). It discloses the extent to which employees feel empowered to make their decisions by their own- without unnecessary approvals and permissions from other and discretion to select the ways for implementing their ideas (Frese *et al.*, 2002; Zellweger and Sieger, 2012; Grunhagen *et al.*, 2014). Hackman (1980) defines autonomy as the degree to which an individual and/ or a team have freedom, independence, and discretion in developing an idea and its implementation.

Autonomy, in an organizational context, refers to freely taken action, irrespective of organizational constraints, for establishment and smooth running of a venture (Shrivastava and Grant, 1985; Krauss *et al.*, 2005). It reflects the will and capacity of an entrepreneurial firm to encourage its employees to pursue entrepreneurial opportunity; to overcome resource shortage; and to go for new start ups and launches even in situations when these opportunities seem beyond the current capabilities of a firm (Merlo and Auh, 2009). Autonomy represents the organizational ability and proclivity towards independence and self direction in thought and action and the presence of a culture that encourages such behaviour among individuals or teams within the organization (Burgelman, 1983; Brock, 2003; Awang *et al.*, 2009; Madhoushi *et al.*, 2011).

Organizational culture, which compels employees to use standard operating procedures as a basis for decision making, requires approvals at every stage of decision making and demands justification from employees for their unconventional actions, squeezes the level of organizational autonomy. Whereas autonomy flourishes in a culture which supports the efforts of individuals or teams who work autonomously; adopt out of box thinking; and need not refer to their supervisors constantly for every decision (Dess and Lumpkin, 2005; Lumpkin *et al.*, 2009). In entrepreneurial work environment, employees are often encouraged to make decisions about their goals and means (in accordance with organizational vision and mission) and are seldom criticized for making mistakes when innovating (Gundry and Welsch, 2001; Ferrier, 2001; Nielsen and Pedersen, 2003; Brush and Brush, 2006). Autonomy represents the culture, which often involves freeing organizational members-both individuals and teams- from existing norms of organization, to develop and implement ideas that are challenging but promising. Freedom of selection of means and goals enhances the belongingness and commitment of employees towards organization; it brings positive energy in work environment and strengthens the current capabilities of an organization. Autonomy equips an entrepreneurial firm with competence to handle issues like: organizational change, employee engagement, resource shortage, and environmental hostilities.

Autonomy is not only a way to design the structure of an organization, rather it has strategic implications. Lumpkin *et al.* (2009) posit that higher level of autonomy

motivates employees to work in a positive manner; encourages them to accept current and future challenges and often leads to higher organizational performance. Turner and Lawrence (1965) have used autonomy as an attribute of firm's task environment to promote job satisfaction and to reduce absenteeism among employees. In line with Maslow's (1954) hierarchy of needs, Porter *et al.* (1975) suggest that autonomy is a human need and it could be used to raise the level of performance of employees in an organization. Autonomy equips organizational members with the flexibility and necessary freedom to decide their goals, in line with organizational goals, and achieve them in the way that they believe is most effective (Zellweger and Sieger, 2012). Lumpkin and Dess (1996) found a strong relation of managerial autonomy with entrepreneurial outcomes.

As far as degree of autonomy is concerned, in organizational context, it is generally measured by looking at the extent of control that an individual or a group have over various types of actions or decisions (Kanter, 1982; Burgelman and Sayles, 1986; Lumpkin and Dess 2001). However, Vij and Bedi (2012) suggest that the degree of autonomy in an organization varies with the size of organization, management style and ownership. In entrepreneurship and strategic management literature, the extent of autonomy has often been reflected on a continuum of structural autonomy to strategic autonomy. Structural autonomy discloses the extent of discretion that an employee has in selection of means (within given resource constraints) for resolving various organizational problems (Gulowsen, 1972). 'Autonomy of means' i.e. structural autonomy is related with the work environment of employees and often includes the dimensions like: work method autonomy, work scheduling autonomy, and work criteria autonomy. Work method autonomy specifies the level of control that an individual or a team has about the selection of procedures and methods for the completion of the assigned work, whereas work scheduling autonomy discloses the extent of power of an individual or a team in deciding about the issues like: sequencing, timing and scheduling of task environment. The extent of control that an individual or a team feels about the selection of criteria of their performance evaluation discloses the work criteria autonomy (Burgelman and Sayles, 1986; Breaugh, 1999; Antoncic and Hisrich, 2004).

The ability of an individual or a team in deciding about their goals represents strategic autonomy i.e. 'autonomy of goals'. Strategic autonomy is superior in nature and allows organizational members to work outside the purview of organizational constraints in developing and implementing ideas that are innovative, unique and different from existing course of actions. Faith of the organization on its members in implementing these innovative, unique and novel ideas not only raises the level of efficacy and belongingness of its employees but it may also result in higher organizational performance and better public image for an organization. From the perspective of an entrepreneurial organization, it is the strategic autonomy, reflected through the freedom to develop and implement unconventional solution to problems and needs, which requires greater attention of top management for leveraging the firm's existing capabilities and strengths (Grunhagen *et al.*, 2014). Strategic autonomy not only equips organizational members with freedom and flexibility to solve various organizational problems in a manner they feel appropriate; rather it allows them to define problems. Control over goals encourages organizational members to go for those opportunities which seem beyond the current capabilities of the firm (Kanter *et al.*, 1990; Nielsen and Pedersen, 2003).

The degree of autonomy gradually moves from structural to strategic, whereas initial level employees are given freedom and independence to determine their own work environment i.e. flexibility in selection of production method, work hours, work scheduling etc and then gradually moves toward strategic issues like: issues of leadership, involvement of employees in decision making process and selection of organizational goals etc.

Autonomy enables both opportunity-seeking and advantage-seeking behaviour (Ireland *et al.*, 2003). It boosts innovation, promotes the launch of entrepreneurial ventures, and increases the competitiveness and effectiveness of an entrepreneurial firm (Brock, 2003; Burgelman and Andrew, 2001). The effective use of autonomy creates a feeling of belongingness among organizational members and prepares them for organizational changes. Autonomy brings positivity in the organizational culture, increases the satisfaction level of employees and often leads to higher organizational performance. Autonomy may be even more important in settings where strategic renewal

occurs only because of the initiatives of key individual champions who transform an organization's strategic posture (Burgelman, 1983; Guth and Ginsberg, 1990; Zahra, 1993; Kreiser *et al.*, 2002).

Based upon the above arguments, autonomy has been conceptualized *as the extent to which a firm promotes independence and self direction in thought and action and the presence of a culture that encourages such behaviour among entrepreneurial leaders or teams. It discloses the extent to which an organization allows its members to go for a novel idea and carrying it through to completion. It reflects the will and capacity of an entrepreneurial firm to encourage its employees to pursue entrepreneurial opportunity and to go for new start up and launches, even in the situation when these opportunities seem beyond the current capabilities of the firm.*

## **2.6: Entrepreneurial Orientation: Uni-dimensionality Vs. Multi-dimensionality**

Entrepreneurial orientation has emerged as a major construct within the strategic management and entrepreneurship literature. It discloses the strategic orientation of a firm and has often been conceptualized as the extent to which a firm showcases innovativeness, demonstrates proactiveness, prefers risk taking, shows competitive aggressiveness and provides autonomy to its employees (Mintzberg, 1973; Covin and Slevin, 1989; Lumpkin and Dess, 1996; Krauss *et al.*, 2005; Kreiser and Davis, 2010; Grande *et al.*, 2011; Soinenen *et al.*, 2012; Grunhagen *et al.*, 2014).

So far as the dimensionality of the construct of entrepreneurial orientation is concerned, beginning with the contribution of Miller and Friesen (1982), the dimension of entrepreneurial orientation have been assumed to co-vary and entrepreneurial orientation has emerged as a uni-dimensional construct, comprising innovativeness, risk taking propensity and proactiveness as its integral components. Covin and Slevin (1989) argue that an organization's entrepreneurial orientation is the summation of the extent to which top managers are inclined to take business related risk (the risk-taking dimension), to favour change and innovation in order to obtain a competitive advantage for their firm (the innovation dimension), and to compete aggressively with other firms (the

proactiveness dimension). Wiklund and Shepherd (2005) supported Covin and Slevin by proposing entrepreneurial orientation as a single joint construct. Rauch *et al.* (2009) have stated that the focal dimensions of entrepreneurial orientation are usually highly correlated with each other; therefore it is better to combine them into a single construct. Moreover, plethora of entrepreneurial research has considered entrepreneurial orientation as a uni-dimensional construct and suggests that the firm's which show higher inclination towards each of these dimensions should be regarded as entrepreneurial (e.g. Miller, 1983, 1988; Covin and Slevin, 1989; Naman and Slevin, 1993; Zahra and Garvis, 2000; Antoncic and Hisrich, 2004; Wiklund and Shepherd, 2005; Morris *et al.*, 2007; Moreno and Casillas, 2008; Rauch *et al.*, 2009; Zhao *et al.*, 2011; Tang and Tang, 2012; Grimmer *et al.*, 2013). But at the same time, studies (e.g. Lumpkin and Dess, 1996; Stetz *et al.*, 2000; Lumpkin and Dess, 2001; Kreiser *et al.*, 2002; Richard *et al.*, 2004; Dess and Lumpkin, 2005; Naldi *et al.*, 2007; Awang *et al.*, 2009; Lee and Lim, 2009; Kreiser and Davis 2010; Kreiser *et al.*, 2013) argue that various components of entrepreneurship may vary independently, and aggregated measures may conceal the true nature of the relationship that exists between various sub-dimensions of entrepreneurial orientation and firm performance. Therefore, entrepreneurial orientation should be considered as a multi dimensional construct. Lumpkin and Dess (1996) have expanded the conceptualization of the entrepreneurial orientation by arguing that entrepreneurial orientation – business performance relationship is contextual in nature and it could be possible that in different organizational contexts, various dimensions of entrepreneurial orientation may affect the business performance differently e.g. the study of Lumpkin and Dess (2001) reveal that at early stages of industry development the performance of firms is strongly associated with proactive strategic posture. While in mature industries, competitively aggressive firms are more likely to be benefited because of higher emphasis on exploitation of resources. Similarly Kreiser *et al.* (2013) have found that risk taking has negative impact on firm's performance, while innovativeness and proactiveness have positive association with firm's performance. Nelson and Winter (1982) have suggested that in some of the situations, a firm may benefit more from imitation than from innovation. The basic premise underlying this argument is that each of these sub-dimensions of entrepreneurial



orientation may have a differential relationship with entrepreneurial outcomes. Theoretically it is possible that all five dimensions are valuable for a firm but it is quite possible that only a sub-set of them are valuable and the composition of this sub-set keeps on changing depending upon the context in which a firm operates. There is a strong possibility that some dimensions might have carried the other dimensions along which may have limited or insignificant or even negative influence on firm's growth while viewing entrepreneurial orientation as a uni-dimensional construct. Aggregated measures of entrepreneurial orientation may veil the unique contribution of each component of entrepreneurship in the entrepreneurial process. In addressing the independence of dimensions, proponents of multi-dimensional view of entrepreneurial orientation construct have highlighted that since the potential contribution of each dimension of entrepreneurial orientation towards key outcome variables such as firm performance is different, therefore firm's rather than focusing on all dimensions of entrepreneurial orientation should focus only on those dimensions that have a significant influence (Lumpkin and Dess, 1996; Kreiser *et al.*, 2002; Tang *et al.*, 2008; Kreiser and Davis 2010; Gupta and Pandit, 2012; Kreiser *et al.*, 2013). A uni-dimensional interpretation and measurement of entrepreneurial orientation is appropriate only when simplicity is of greater concern than accuracy and precision (Gonzalez-Benito *et al.*, 2009).

## **2.7: Business Performance**

Performance is a barometer to measure the organizational success. It indicates how efficiently and effectively, management has used the scarce organizational resources to achieve the organizational objectives (Connolly *et al.*, 1980; Ford and Schellenberg, 1982; Neely, 1998). Performance can also be defined as an operational ability of an enterprise to satisfy the desires of its major stakeholder's viz. customers, employees, owners, creditors and community. It determines the progress of an organization toward its objectives through some statistical evidence (Antic and Sekulic, 2006). Dess and Beard (1984) suggest that performance is a tool to evaluate whether an organization utilizes its resources effectively or not. Good performance proves managerial effectiveness; whereas

poor performance reveals the ineffectiveness of managerial actions (Ghalayini *et al.*, 1997; Lee *et al.*, 2001; Wiklund and Shepherd 2003).

Performance measurement is a process of assessing actual output of an enterprise against intended one. Neely *et al.* (1995) have defined the performance measurement system in context of efficiency and effectiveness of the actions of a firm, where effectiveness is related with the ability of an organization to meet the requirements of different stakeholders and often deals with issues affecting present and future growth prospects of an organization. Efficiency spotlights the input/output relationship and comments upon how economically the resources have been utilized, while providing a given level of customer satisfaction (Gupta and Govindarajan, 1984; Lynch and Cross, 1991; Bititci *et al.*, 2000). A good performance measurement system not only synchronizes the planning and controlling function of an organization but also determines the progress of an organization towards its objectives, helps in identifying areas of strength and weaknesses, and decides on future initiatives, with the goal of improving organizational performance (Neely *et al.*, 1997; Smith and Reece, 1999; Franco *et al.*, 2007; Purbey *et al.*, 2007). By setting business goals in alignment with periodic feedback reports and future growth prospects, a good performance measurement system designs systematic methods for enhancing the level of organizational efficiency (Lynch and Cross, 1991; Frigo and Krumwiede, 1999; Bititci *et al.*, 2000; Jarad *et al.*, 2010).

Business performance is one of the most widely used construct in entrepreneurship and strategic management research (Kaplan and Norton, 1996; Bourne *et al.*, 2000; Simons, 2000; Combs *et al.*, 2005; Houck *et al.*, 2012; Kartalis *et al.*, 2013; Silvestro, 2014). But as far as measurement of business performance is concerned, the treatment of the performance construct is perhaps one of the thorniest issues confronting the academic researcher (Globerson, 1985; Venkatraman and Ramanujam, 1986; Hoffman *et al.*, 1991). Literature in the field of business management and organizational performance reveals that a wide range of performance measures i.e. financial and non-financial measures as well as objective and subjective measures, have been used across studies. Some studies (e.g. Dess and Robinson, 1984; Kreiser *et al.*, 2002; Wall *et al.*, 2004; Song *et al.*, 2005; Ellis, 2006; Wood, 2006; Clercq *et al.*, 2010; Santos and Brito,

2012) emphasize perceived performance indicators like manager's subjective views about firm's sales growth, market share, profitability, customer satisfaction etc to assess the performance of an organization. Other set of studies (e.g. Birley and Westhead, 1990; Zahra, 1991; Zahra and Garvis, 2000; George *et al.*, 2001; Covin *et al.*, 2006) have utilized secondary data to gauge the financial aspects of firm's performance. There is no consensus among the researchers regarding universally accepted measures of business performance (Richard *et al.*, 2009; Cardinaels and Veen-Dirks, 2010; Silvestro, 2014). Though, both subjective and objective measures have been adopted by researchers for measurement of business performance, but the use of subjective measure of performance is common. The users of subjective measures of performance often rely upon the positive correlation between subjective and objective measures of performance (Dess and Robinson, 1984; Pearce *et al.*, 1987; Venkatraman and Ramanujam, 1987; Covin *et al.*, 1994; Dawes, 1999; Wall *et al.*, 2004).

As far as development of performance construct is concerned, the first phase of conception of business performance centres on the use of simple outcome-based accounting indicators such as: profitability and growth (Snow and Hrebiniak, 1980; Johnson, 1983; Segev, 1987; Sapienza *et al.*, 1988; Capon *et al.*, 1990; Parnell and Wright, 1993; Thomas and Ramaswamy, 1996). To operationalize business performance, these traditional accounting based financial measures generally adopt criteria like: net income, earning per share, return on equity, return on net worth, return on assets, and return on investment etc as measure of profitability; and sales growth, asset growth, and profitability growth etc as measures of growth (Dess and Robinson, 1984; Pearce *et al.*, 1987; Venkatraman and Ramanujam, 1987; Chandler and Hanks, 1993; Naman and Slevin, 1993; Covin *et al.*, 1994; Forker *et al.*, 1996; Dawes, 1999; Zahra and Garvis, 2000). Though these measures successfully assess the economic performance of a firm, yet during 1980s, there was a growing realization about the hazy nature of these objective measures. These measures provide a little indication of how performance is achieved or how can it be improved. It has also been argued that these financial measures are not sufficient to meet the expectations of changing business environment and they do not capture the factors critical for firm's success (Johnson, 1983; Venkatraman and

Ramanujam, 1986; Kaplan, 1986; Johnson and Kalpan, 1987; Dixon *et al.*, 1990; Ittner and Larcker, 1998; Bourne *et al.*, 2003; Kennerley and Neely, 2003). Consequently, these accounting based financial measures started losing their significance because of blames that these measure are static; difficult and complex to understand; too financial; present short term view; are mainly internal rather than externally focused; provide little indication of future performance; have little regard for competitors and customers; unclear as to linkage between activity measures and strategic objectives of the enterprise (Richardson and Gordon, 1980; Keegan *et al.*, 1989; Kaplan and Norton, 1992; Neely *et al.*, 1995; Antic and Sekulic, 2006).

In the recent past, global economy has witnessed tremendous changes in almost all segments of business environment (Kanter and Brinkerhoff, 1981; Ghalayini and Noble, 1996; Yusaf, 2002; Popadiuk and Choo, 2007; Madhoushi *et al.*, 2011). Rapid technological changes have shortened the product life cycle by providing more choices and better product quality. Relaxation of trade restrictions has changed the face of market competition. Enhanced global trade has made the market more competitive and organizations are performance driven than ever before. Advent of e-business makes the consumer more aware and informed. Environmental forces demand greater responsiveness from a business and forces firms to change their traditional management philosophy. To assess the customer needs and preferences, to track competitors' actions, to evaluate the impact of technology development, to bring necessary product and process innovation, to incorporate cost effectiveness and to raise the level of organizational effectiveness, the top level managers have to redesign their management as well as their measurement processes (Chandler and Hanks, 1993; Bititci *et al.*, 1997; Ghalayini *et al.*, 1997; Kaplan and Norton, 2000).

The purpose of performance measurement changed from the static assessment of economic performance of a business to the dynamic and futuristic paradigm. The new approach not only provides for enhancing the efficiency and effectiveness of managerial actions but also assesses the needs and possibilities of shifting, as the organization's circumstances change, from traditional business practices to the modern and innovative technological methodologies (Dixon *et al.*, 1990; Lynch and Cross, 1991; Neely *et al.*,

2002). This means redefining the traditional methods of performance measurement from the broader perspective of strategic management. These should not only spotlight the input/output relationship but also link long term strategy with short term actions of a firm (Wisner and Fawcett, 1991).

As a direct reaction to the numerous limitations of traditional performance measurement systems and environmental challenges, performance measurement has undergone a genuine revolution regarding the reorientation from traditional to contemporary performance measures (Bourne *et al.*, 2003; Marr and Schiuma, 2003; Matic, 2012). Large amount of effort has been focused at design and implementation of new performance measurement systems (Kennerley and Neely, 2002). Multiple frameworks have been introduced as a result of these initiatives e.g. the performance pyramid (Cross and Lynch, 1989), the performance measurement matrix (Keegan *et al.*, 1989), the results and determinants framework (Fitzgerald *et al.*, 1991), the SMART pyramid (Lynch and Cross, 1991), the balanced scorecard (BSC) (Kaplan and Norton, 1992), the macro process model (Brown, 1996) and performance prism (Neely and Adams, 2001; Neely *et al.*, 2002). Most of these frameworks focus not only on financial aspects of performance but also on non-financial aspects (e.g. customers, employees, society etc), emphasizing that non-financial aspects of performance are the key drivers of the financial result (Nelly *et al.*, 2002; Marr, 2005; Matic, 2012).

So far as operationalization of performance measures is concerned, apart from the dimensionality, another challenge is the selection of the kind of measure i.e. objective vs. subjective measures. Subjective measures are capable of making cross industry comparison, but can have problems with common source bias, social desirability and supervisor biases (Fulk *et al.*, 1985; Heneman, 1986; Campbell, 1990; Hawkins and Hastie, 1990; Stede *et al.*, 2006). Whereas, objective measures are less prone to common method bias and are especially helpful in assessing a firm's financial performance (Stam and Elfring, 2008). Administering an objective measure is a more ambitious task than administering a subjective measure, as key informants generally feel reluctant to release sensitive information to outsiders (Cooper, 1993; Dess and Robinson, 1994; Dawes, 1999). Business managers are generally inclined to provide subjective evaluation of their

firm performance (Wiklund, 1999; Wiklund and Shepherd, 2005). In case of small scale industry, where published data is not available and respondents are generally reluctant to release objective fact and figures to outsiders (Wall *et al.*, 2004; Alasadi and Abdelrahim, 2008; Kraus *et al.*, 2012), subjective measures are only alternative to access the business performance (Tang and Tang, 2012). Manager's subjective views regarding comparative performance (in comparisons to industry or immediate competitors) may reveal important supplementary information (Brush and Vanderwerf, 1992; Chandler and Hanks 1993; Delaney and Huselid, 1996) e.g. whether the growth pattern of a firm deviates substantially from industry or it simply pulls along by market trends (Wiklund, 1999; Thomas *et al.*, 2008). Subjective measures may be more appropriate than objective measures for comparing profit performance in cross-industry studies. This is because profit levels can vary considerably across industries, obscuring any relationship between the independent variables and company performance. Subjective measures might be more appropriate in this situation because managers can take the relative performance of their industry into account, while providing a response (Sapienza *et al.*, 1988; Covin *et al.*, 1994; Dawes, 1999).

As both subjective and objective measures as well as financial and operational indicators of business performance reflect different aspects of firm's performance and have their own pros and cons, it is advantageous to integrate various dimensions and measures of business performance (Venkatraman and Ramanujam 1986; Murphy *et al.*, 1996; Jarvis *et al.*, 2000; Richard *et al.*, 2009). Literature reveals that research that considers only a single measure or a narrow range of the performance measures may produce misleading results (Doyle, 1994). The use of multiple dimensions through multiple measures, particularly when the validity of a single measure is questionable, allows the researches to assess the inter-method reliability (Gupta and Govindarajan, 1984; Doyle, 1994). In line with above, Murphy *et al.* (1996) argued that research in the entrepreneurial context could be benefited by including multiple dimensions and multiple measures under the conceptualization of business performance.

From the perspective of the field of strategic management, the conceptualization of the construct of business performance was refined by Venkatraman and Ramanujam

(1986). They suggest that business performance be measured using financial indicators and/or operational indicators. They further suggest that the sources of performance data either have been primary (e.g., data collected directly from organizations) or secondary (e.g., data from publicly available records). Using the conceptualization of business performance (financial versus operational indicators) and data sources (primary versus secondary) are two basic but different concerns in the overall process of measuring business performance.

On the similar lines, for the purpose of this study, we define business performance as *the overall index of the ability of the firm to satisfy its stakeholders, measured in terms of financial as well as operational indicators, using primary data to measure 'subjective business performance', secondary data to measure 'objective business performance', or both.*

## **2.8: Entrepreneurial Orientation – Business Performance Relationship**

Entrepreneurial Orientation is a key ingredient of organizational success. Three types of models are evident in the entrepreneurship literature:

1. the construct model, in which the dependent variable is entrepreneurial orientation and the researchers focus on its antecedents (Lachman, 1980; Miller and Toulouse, 1986; Stevenson and Jarillo, 1990; Zahra, 1991; Zahra *et al.*, 1999; Littunen, 2000; Poon *et al.*, 2006; Holt *et al.*, 2007)
2. the entrepreneurial orientation - strategy model, which aligns the level of entrepreneurial orientation with different strategies (Mintzberg 1973; Khandwalla, 1977; Miller and Friese, 1982; Burgelman, 1983; Galbraith and Kazanjina, 1986; Covin and Slevin 1988; Zahra and Covin, 1993; Covin *et al.*, 1994; Lumpkin and Dess, 1996; Dess *et al.*, 1997; Frese *et al.*, 2002; Ireland *et al.*, 2009)
3. the performance model, in which the entrepreneurial orientation – business performance linkage is explored, often includes not only bivariate relationship, but also multivariate relationship by considering moderating and mediating variables related to external environment and / or organizational environment and by looking at the main effect between the two variables as well as interaction

effect with moderating variables. (Covin and Slevin 1989; Zahra, 1991; Wiklund, 1999; Zahra and Garvis, 2000; Lee *et al.*, 2001; Yusaf, 2002; Dimitratos *et al.*, 2004; Wiklund and Shepherd, 2005; Stam and Elfring, 2008; Ireland *et al.*, 2009; Kreiser and Davis, 2010; Grande *et al.*, 2011; Soininen *et al.*, 2012).

The relationship between entrepreneurship and firm performance has received considerable attention in the entrepreneurial literature over the last two decades and scholars have theorized that the incidence of firm-level entrepreneurial behaviour - a propensity to engage in relatively high levels of risk taking, autonomy, innovativeness, competitive aggressiveness and proactiveness - is positively associated with organizational profitability and growth (e.g. Covin and Slevin, 1989, 1991; Naman and Slevin, 1993; Lumpkin and Dess, 1996; Wiklund, 1999; Barrett *et al.*, 2000; Zahra *et al.*, 2002; Wiklund and Shepherd, 2003, 2005; Wang, 2008; Clercq *et al.*, 2010; Soininen *et al.*, 2012; Tang and Tang, 2012; Ullah *et al.*, 2013; Schepers *et al.*, 2014).

The pursuit of entrepreneurial orientation often helps a firm in gaining a separate identity in the eyes of customers and often results in better financial performance. According to Knight (1997), “entrepreneurial activities are critical because they stimulate superior performance and may be the key fundamental element in acquiring sustainable competitive advantage”. Wiklund (1999) has equated the investments in entrepreneurial orientation with any other investment: in terms of time to breakeven and argued that the compound or long term performance effect of entrepreneurial orientation provides more valuable information than influence of entrepreneurial orientation on annual performance. Wiklund reveals that the relationship between entrepreneurial orientation and business performance actually increases over time. Lee and Lim (2009) have considered entrepreneurial orientation as a forward looking and opportunity seeking behaviour, and find that various dimensions of entrepreneurial orientation have a significant, unique and positive impact on the performance of a firm. Innovativeness and proactiveness equip entrepreneurial firms with the capability of introducing new products, processes, technologies and services ahead of their competition and acting in anticipation of future demand to create, change and shape the environment (Kreiser *et al.*, 2002; Stam and



Elfring, 2008; Kreiser and Davis 2010). Risk taking gives the necessary courage to break away from the tried-and-tested and venture into the projects where the outcomes are unknown. Ability to challenge its competitor's i.e. competitive aggressiveness helps these firms in protecting their current market share. Autonomy boosts the organizational members to go for opportunities which seem beyond the current capabilities of the organization. All these actions help an entrepreneurial firm to gain long term sustainable performance rather than temporary high performance.

Entrepreneurial orientation equips organizations with capabilities to differentiate them from other firms and to create a room for innovations and creativity (Wiklund and Shepherd, 2005). According to Antoncic and Hisrich (2004), entrepreneurial orientation not only helps a firm in employing out of box and unconventional thinking to problems and needs but it also helps an entrepreneurial firm in gaining a distinct brand identity and fuelling its future growth. By continuous differentiation in products and processes, an entrepreneurial firm can become pioneer in the industry and can gain first-mover advantage. Lieberman and Montgomery (1988) have defined the first mover advantage in terms of the 'ability of pioneering firm to earn super normal profits through technological leadership and increased buyer switching cost'. They stated that first mover firms are able to achieve higher profit because of two reasons. Firstly, at early stage of industry life cycle, because of no competitors these firms charge high prices by targeting premium segments and skim the market, secondly by becoming pioneers in the industry, especially in new industries, these firms can easily dominate market and distribution channels and can gain a distinct brand recognition (Zahra and Covin, 1995; Wiklund and Shepherd, 2005; Awang *et al.*, 2009). According to Zahra and Covin (1995), "firms with high entrepreneurial orientation can target premium market segments, charge high prices and skim the market ahead of their competitors". Ireland *et al.* (2003) have stated that an ingenious mindset, participating culture, creative leadership and the astute management of resources are antecedents of opportunity-seeking and advantage-seeking behaviour, which often result in superior performance. According to Baker and Sinkula (2009), entrepreneurial orientation represents the extent to which firm's growth objectives are met through identification and exploitation of untapped environmental opportunities.

Entrepreneurial firms continuously scan their environment, identify potential opportunities, respond rapidly on these emerging opportunities and gain extra market share (Jogaratnam, 2002). Soininen *et al.* (2012) argue that firms with high entrepreneurial orientation survive better than firms having lower orientation, because of the smoothing effects of innovativeness and proactiveness dimensions.

Entrepreneurial orientation is a vehicle for a firm's survival, growth and success (Wang, 2008). Firms which have a strong entrepreneurial orientation often perform better than other firms. However, the magnitude of this relationship seems to vary across studies. There are studies, which suggest that the relationship between entrepreneurial orientation and firm performance is curvilinear (Bhuian *et al.*, 2005), implying that blindly striving to pursue as high entrepreneurial orientation as possible may under some conditions lead to adverse outcomes. Kreiser *et al.* (2013) argue that firms with low entrepreneurial orientation may not be able to perform well because of under exploration and exploitation of environmental opportunities, whereas firms with high entrepreneurial orientation might face adverse situations either because of the excessive exposure to risk taking or higher expenditure on research and development. Tang *et al.* (2008) have disclosed that the relationship between entrepreneurial orientation and business performance is not that straightforward rather it shaped like inverted U, which means that a very high or very low degree of entrepreneurial orientation may not always be desirable in certain market and structural conditions. Krauss *et al.* (2012) have found that apart from the dimension of proactiveness, no other dimension contributes towards superior business performance. Some studies (e.g. Hart, 1992; Covin *et al.*, 1994; Smart and Conant, 1994; Morgan and Strong, 2003; George *et al.*, 2001; Tang and Koveos, 2004; Morris *et al.*, 2007) report an insignificant relationship between entrepreneurial orientation and business performance. Hence, there is a considerable variation in the reported relationship between entrepreneurial orientation and business performance.

Multiple reasons could be attributed to the variation in the reported relationships of entrepreneurial orientation and business performance. Factors such as: difference in the scale of entrepreneurial orientation being used, confusion regarding the issue of dimensionality of the construct of entrepreneurial orientation, opinion regarding

moderating and mediating variables, and use of different indicators of performance construct have been identified as the root cause of the variation in the entrepreneurial orientation - business performance relationship.

Two types of modifications were made to original scale of entrepreneurial orientation developed by Covin and Slevin. First, the number of dimensions involved for conceptualizing entrepreneurial orientation, varies across studies. Covin and Slevin's original nine-item scale covers three dimensions i.e. innovativeness, proactiveness, and risk-taking, but different researchers have used different conceptualizations of the construct of entrepreneurial orientation e.g. Lumpkin and Dess (1996) have added the dimensions of competitive aggressiveness and autonomy in entrepreneurial orientation. Kraus *et al.* (2005) have considered learning orientation, achievement orientation and personal initiative along with the dimensions of innovativeness, risk-taking, competitive aggressiveness and autonomy to operationalize entrepreneurial orientation. Similarly Lee *et al.* (2001) have considered technological capabilities and financial resources under the conceptualization of entrepreneurial orientation.

Second, the number of scale items considered for the operationalization of the construct of entrepreneurial orientation varies considerably. The first significant scale development for operationalizing entrepreneurial orientation was Khandwalla's (1977) scale of entrepreneurial orientation. It was a three item scale, two items measuring the degree of product innovation and one item to measure the risk taking propensity of an organization. Next comes the Miller and Friesen's (1982) scale of entrepreneurial orientation, which was a five item scale. Subsequently, both Khandwalla's (1977) scale and Miller and Friesen's (1982) scale of entrepreneurial orientation were revised by Coven and Slevin (1989). Covin and Slevin (1989) scale consists of nine items: three items measure innovativeness, three items assesses proactiveness, and three items measure risk taking. Lumpkin and Dess (2001, 2009) have commented upon the narrowness of Covin and Slevin's scale and developed a 22 items scale for measuring the entrepreneurial orientation of a firm. Rauch *et al.* (2009) in their meta analysis on entrepreneurial orientation – business performance relationship, have affirmed the variation in the operationalization of the construct of entrepreneurial orientation.

As far as the dimensionality of the construct of entrepreneurial orientation is concerned, there are diverse opinions. Some studies have considered entrepreneurial orientation as a uni-dimensional construct and have taken aggregated measures of entrepreneurial orientation to assess the impact of entrepreneurial orientation on business performance (e.g. Covin and Slevin, 1989; Naman and Slevin, 1993; Zahra and Garvis; 2000; Yusuf, 2002; Wiklund and Shepherd, 2005; Tang *et al.*, 2007; Wang, 2008; Rauch *et al.*, 2009; Frank *et al.*, 2010; Ullah *et al.*, 2011; Grunhagen *et al.*, 2014). Other set of studies (e.g. Lumpkin and Dess, 1996; Kreiser *et al.*, 2002; Richard *et al.*, 2004; Hughes and Morgan, 2007; Naldi *et al.*, 2007; Awang *et al.*, 2009; Kreiser and Davis 2010; Kreiser *et al.*, 2013; Taylor, 2013) have suggested that the different dimensions of entrepreneurial orientation vary independently and have a unique and distinct relationship with firm growth. These studies have considered entrepreneurial orientation as a multi-dimensional construct and measure the individual impact of the each dimension of entrepreneurial orientation on business performance.

In investigating the entrepreneurial orientation - business performance relationship, apart from the scale and dimensionality of the construct of entrepreneurial orientation, it becomes essential to measure and quantify the impact of extraneous variables by employing moderation and mediation analysis. Mediators and moderators are third variables, which explain how a cause leads to an effect and under what circumstances the causal relationship between independent and dependent variable hold good. But across studies there is no uniformity among researchers regarding the introduction of moderating and mediating variables in entrepreneurial orientation - business performance relationship. Some researchers simply measure the direct impact of entrepreneurial orientation on the performance of business, ignoring the effect of moderator and/or mediating variables (e.g. Miller and Toulouse, 1986; Venkatraman, 1989; Sagie and Elizur, 1999; Krauss *et al.*, 2005; Kaya and Agca, 2009; Ziyae and Zainal-Abidin, 2009; Price *et al.*, 2013), while some others have included moderating and mediation effect (McMullen and Shepherd, 2006; Moreno and Casillas, 2008; Hmieleski and Baron, 2008; Kraus *et al.*, 2012).

It has been seen that the strength of entrepreneurial orientation - business performance relationship often vary with the kind of performance measures taken by the researcher. According to Lumpkin and Dess (1996), “entrepreneurial activity or processes, at times, lead to favourable outcomes on one performance dimension and unfavourable outcomes on a different performance dimension”. Numerous studies (e.g. Serrano *et al.*, 2006; Zellweger and Nason, 2008; Aziz and Mahmood, 2011; Demartini and Paoloni, 2014) have confirmed that the strategic posture of an organization may relate differently with different measures of performance. In addition, literature on the construct of entrepreneurship and business performance reveals that there is no consensus among the researchers on the universal measures of business performance (Venkatraman and Ramanujam, 1986; Dess and Priem, 1995). A wide diversity of performance measures i.e. objective and subjective measures, as well financial and non-financial measures have been used across studies, to operationalize business performance (Sapienza *et al.*, 1988; Capon *et al.*, 1990; Hoffman *et al.*, 1991; March and Sutton 1997; Dawes, 1999). This diversity in the use of business performance measures could also be a reason for variation in the reported relationship between entrepreneurial orientation and business performance.

## **2.9: Contingency framework of Entrepreneurial Orientation – Business Performance Relationship**

Entrepreneurial orientation has emerged as an important determinant of business success, but the empirical results are mixed. The diversity in the reported relationship between entrepreneurial orientation and business performance raises an important question about the suitability of entrepreneurial strategic posture in different organizational context.

It has been seen that entrepreneurial orientation is not equally suitable in all environmental context and the variation in the magnitude of the relationship between entrepreneurial orientation and business performance could not be explained by sampling error alone, rather the nature and strength of entrepreneurial orientation – business performance relationship is influenced by the interference of various elements of organizational and industrial environment (Covin and Slevin, 1989; Naman and Slevin,

1993; Lumpkin and Dess, 1996; Zahra and Garvis, 2000; Hult *et al.*, 2004; Green *et al.*, 2008; Rauch *et al.*, 2009; Grande *et al.*, 2011; Kraus *et al.*, 2012).

For developing further insight in this regard, the concept of *elaboration* is particularly relevant (Rosenberg, 1968). Elaboration serves to clarify the relationship between two variables through the introduction of additional variables. The process of elaboration leads to richer theoretical model and better explains the functional nature of relationship between variables under investigation.

In strategic management literature, a central theme is a fit or alignment between firm's internal structure, strategy, processes and its environment (Mintzberg, 1979; Venkatraman, 1989). The field of entrepreneurship follows the strategy literature while exploring a relationship between the firm, its structure and environment. Slevin and Covin (1990) have demonstrated that the fit between organizational factors, environmental variables and entrepreneurial orientation is an important measure for increasing the firm performance. They claim that performance can be improved when key variables are correctly aligned and the role of moderating and mediating variables is rightly defined. Naman and Slevin (1993) also find a positive relationship between fit and performance for organic firms in a turbulent environment; whose style is highly innovative, risk taking and proactive. Kreiser and Davis (2010) have stated that the impact - a predictor variable has on a criterion variable is often dependent upon the level of a third variable called as moderator/ mediator.

Lumpkin and Dess (2001) have stated that the relationship between entrepreneurial orientation and firm performance may be more complex than previously assumed and magnitude of this relationship is contingent upon various attributes of the external and internal environment of a firm. Environmental factors, such as dynamism, complexities, hostility and munificence; structural factors like formalization, decentralization of decision making; organizational factors- size, age, nature of firm etc may influence the intensity of the entrepreneurial orientation - business performance relationship (Lee and Lim, 2009; Kraus *et al.*, 2012; Schepers *et al.*, 2014). Aldrich (1979, 1990) stated that the survival of an organization does not depend upon strategic choices or environmental forces alone; rather the degree of fit between entrepreneurial

efforts and environmental forces decides the future of an organization. Stevenson and Jarillo (1990) have stated that organizations which emphasise on internal and external networking and allow sharing of resources will exhibit a higher degree of entrepreneurial behaviour. Dimitratos *et al.* (2004) suggest that environmental uncertainty plays a significant role in moderating the entrepreneurship - business performance relationship and proper alignment of entrepreneurial efforts with environmental conditions enhances organizational performance. Richard *et al.* (2004) observe that the focal dimensions of entrepreneurial orientation interact with cultural diversity to affect firm's performance. Stam and Elfring (2008) have revealed the importance of contingency perspective of entrepreneurial orientation - business performance relationship by stating that the fit among a firm's strategic posture and other constructs of interest, e.g. environmental and organizational factors is crucial for obtaining optimum business performance. They have highlighted that firm's network centrality i.e. firm's capacity to quickly identify, access, and mobilize external resources, positively influences the entrepreneurial orientation - business performance relationship. Brookshire (2009) has stated that the relationship between firm level entrepreneurship and business performance is dependent upon the size of firm; smaller the size of firm - higher the impact of entrepreneurial orientation on firm's performance. Rauch *et al.* (2009) in their meta analysis on 'entrepreneurial orientation- business performance relationship' have also supported the notion that relationship between entrepreneurial orientation and business performance is moderated by national culture, size of business organization, and technology intensity of a firm.

The relationship between entrepreneurial orientation and business performance is contextual in nature and the strength of this relationship may be contingent upon the environmental context in which a firm operates (Naman and Slevin, 1993). Entrepreneurial posture is more appropriate for the firms which operate in dynamic environment. In dynamic environment, customer's taste and preferences change regularly and opportunities emerges on continuous basis. Firms which take risky alternatives, introduce new product and services ahead of their competitors, adopt a forward looking and opportunity seeking perspective, allow autonomy to its employees and employs unconventional ways of competing, often gain extra market share and become market

leader. According to Miller (1983), it is the environmental munificence – perceived rate of change and the availability of environmental opportunities – which shapes the strategic posture of an organization.

Lumpkin and Dess (1996) have suggested the moderating effect and mediating effect models for investigating the contextual nature of entrepreneurial orientation - business performance relationship. In the moderating-effects model, various elements of organizational and industrial environment interact with entrepreneurial orientation to influence firm performance (Naman and Slevin, 1993; Lumpkin and Dess, 1996). The strength of the entrepreneurial orientation – business performance relationship differs at different levels of organizational and industrial environment. In mediating-effects models, entrepreneurial orientation is considered an antecedent variable, firm performance is the outcome variable and the integration of organizational activities is the mediating variable. Effective integration of various organizational activities and processes intervene in the relationship between entrepreneurial orientation and business performance. Miller (1983) suggests that such integrating activities often include the extensive use of structural integration devices such as task forces and committees. Porter (1985) suggests the term horizontal organization, which consists of horizontal structures, horizontal systems, and horizontal human resource practices to integrate activities across business units.

Covin and Slevin (1988) reveal that organizations are arrayed along a mechanistic-organic continuum, which constitute two formally contrasted forms of organizations. Organic organizations typically are decentralized, informal, have emphasis on lateral interaction and an equal distribution of knowledge throughout the organizational network, whereas mechanistic organizations tend to be highly centralized and formal. According to Covin and Slevin (1989), in earlier stage of life cycle, firm performance is positively related with mechanistic structure, a conservative strategic posture and a competitive profile characterized by conservative financial management and a short-term financial orientation. But after a particular stage of life cycle, organic firm would be more productive. Burns and Stalker (1961) theorize that organic structure, with lesser layers and direct communication is more suitable for handling unusual and



complex situations of dynamic environment, whereas mechanistic structure with well defined roles and responsibilities is more appropriate for organizations which deal with routine problems, reinforces past behaviour, goes for mass production, and operates in a relatively stable environment. In dynamic environment, where changes emerge regularly, organizations with rigid structure may fall short due to the reduced level of novelty and creativity. However, Kreiser and Davis (2010) suggest that no business posture is universally appropriate, the factors upon which the strategic posture depends are known as contingent factors - which may include organizational factors like: strategy, size, and resources etc and/or environmental factors like: dynamism, munificence, regulations, and industry turbulence etc.

The above discussion suggests that the nature and strength of entrepreneurial orientation - business performance relationship is often affected by environmental uncertainties and organizational configuration. According to Wiklund and Shepherd (2005), the multivariate configuration of an entrepreneurial posture with other important constructs may provide a more accurate picture of entrepreneurial orientation - business performance relationship than those provided by bivariate models. Other variables, in addition to entrepreneurial orientation, could also influence performance directly or may moderate the relationship between entrepreneurial orientation and business performance.

Contingency theory suggests that congruence or fit among key variables such as industry conditions and organizational processes is critical for obtaining optimal performance and the relationship between two variables is depended upon the interference of a third variable, therefore, by introducing moderators and/ or mediators into entrepreneurial orientation – business performance relationships, the misleading inferences can be reduced and more precise and specific understanding about entrepreneurial orientation – business performance relationship can be developed (Segev, 1987; Zahra, 1991; Zahra and Garvis, 2000; Jogaratnam, 2002; Wiklund and Shepherd, 2005; Stam and Elfring, 2008; Wang, 2008; Rauch *et al.*, 2009; Frank *et al.*, 2010; Kreiser and Davis, 2010; Soininen *et al.*, 2012).

In strategic management literature, it has often been argued that contingency approach towards entrepreneurial orientation - business performance relationship

provides a true picture of entrepreneurial orientation - business performance relationship (Mugler *et al.*, 2003; Yiu and Lau, 2008; Frank *et al.*, 2010). So, for generating better insight of relationship that exists between entrepreneurial orientation and business performance, environmental uncertainty and organizational structure should be considered as moderating variables.

### **2.9.1: Environmental Uncertainty**

Environment can be broadly defined as the totality of physical and social factors that are taken directly into consideration for adoption of a particular type of strategic posture and decision-making behaviour (Duncan, 1972). It represents the surroundings in which an organization operates. Customers, competitors, employees, and suppliers etc, which generally have direct bearing on the functioning of a firm, constitute task environment of the firm. Whereas factors like: economic scenario of the country, social believes, rate of technological up-gradations, political unrest, regulatory/legal environment, ecological factors and international conditions etc, which indirectly impact the performance of business, define the general environment of the firm. Although various elements of external environment present same amount of information to every firm in an industry but it is the firm's perception about these elements which shapes its strategies (Tang *et al.*, 2009). According to Kreiser *et al.* (2002), "firms in the same industry may have heterogeneous perceptions regarding the same industrial situation due to their different market positions, resource endowments, and dominant logics". According to Boyd *et al.* (1993), it is the size, age, nature, resources, and market positioning of a firm, which shapes its response and strategy for a given environmental situation. It is generally seen that alike organizations normally respond to similar environmental condition differently - due to their perception (Tang and Tang, 2012). Bourgeois (1985) has highlighted the importance of perceived environmental uncertainties in decision making process by quoting that managers only respond and react to what they perceive; environmental conditions that are not noticed or perceived do not influence the management's decisions or actions. Therefore, from strategic perspective, it is perceptual environment, which have higher strategic implications (Miller and Droge, 1986; Tang *et al.*, 2009).

Literature reveals that the perceptual environment has often been conceptualized in terms of environmental dynamism and environmental complexities (e.g. Miller and Friesen, 1978; Naman and Slevin, 1993; Lumpkin and Dess, 1996; Shane and Venkatraman, 2000; Zahra and Garvis, 2000; Wiklund and Shepherd; 2005; Ghobadian *et al.*, 2010; Kreiser and Davis, 2010; Kraus *et al.*, 2012). Environmental dynamism reflects the rate of change and innovation in an industry as well as the uncertainty or unpredictability of the actions of competitors and customers (Miller and Friesen, 1982). Dess and Beard (1984) have defined environmental dynamism in terms of absence of pattern and unpredictability of the competitive environment. These factors often generate uncertainty in firm's environment and adversely affect the ability of firm to predict future course of actions.

Environmental complexities measure the hostility of firm's environment and has often been measured by looking at the extent to which factors like: pricing war, technology up-gradations, the pace of product/process innovation, demographic trend, availability/ shortages of labour and raw material, macro economic conditions, and corporate legislations impact the functioning of a business (Shane and Kolvereid, 1995; Awang *et al.*, 2009). Kreiser and Davis (2010) reveal that environmental complexities tend to encompass those phenomena of firm's environment that are more appropriate to the national or macro level. These complexities, rather than impacting a single firm, have impact on profitability of entire industry.

Environmental uncertainty reflects: (i) the velocity and intensity of change in factors like technology sophistication, customer expectations, competitors actions etc., (ii) environmental support or challenges in terms of resource availability and regulatory restrictions or facilitation, and (iii) the relative attractiveness of the industry-level and macro-economic conditions.

As far as relationship between environmental uncertainty and entrepreneurship is concerned, literature suggests that an environmental uncertainty is one of the most significant factor affecting the nature and strength of entrepreneurial orientation – business performance relationship (Lawless and Finch, 1989; Lumpkin and Dess, 1996; Balabanis and Katsikea, 2003; Antoncic and Hisrich, 2004; Tang *et al.*, 2009; Kreiser and

Davis, 2010; Hassim *et al.*, 2011; Taylor, 2013). According to Priem *et al.* (2002), uncertainty relating to environmental and organizational variables often decreases firm's performance predictability and increases the risk of business failure. Zahra and Garvis, (2000) have pinpointed the negative effect of environmental uncertainties on entrepreneurial orientation – business performance relationship by stating that environment is a primary source of uncertainty and grater the degree of environmental complexities and dynamism, lesser the strength of entrepreneurial orientation – business performance relationship. According to Lumpkin and Dess (2001), “the rate of change and unpredictability of factors likes: market trends, industry innovation, customer tastes, production or service technologies, and the modes of competition often erode the ability of managers to predict future events as well as their impact on the organization”. Chattell (1995) has highlighted the role of technological evolution – as a constituent of firm's general environment - on firm's success by stating that the invent of new technologies, not only improves the level of existing knowledge and generate new options, but these actions also increases the customer expectations from the supplier and makes the environment more dynamic and complex. The technological evolutions not only result in new products and but these radical innovations and technological advancements also increase the rate of product obsolesce (Duncan, 1972; Birkinshaw, 1995; Mason, 2006).

The concept of environmental uncertainty plays a fundamental role in refining once understanding regarding the strategic decision-making process that occurs within entrepreneurial organizations (Zahra and Neubaum, 1998; Lumpkin and Dess, 2001). Environmental uncertainties create lot of challenges in firm's environment and increase the chance of business failure. Adoption of entrepreneurial posture is a conscious strategic response to environmental challenges (Yusaf, 2002; Rauch *et al.*, 2009; Kreiser and Davis 2010). Miller and Friesen (1982) have highlighted the importance of entrepreneurial posture in uncertain environment by stating that “as the environment becomes more dynamic and complex, innovation becomes increasingly necessary to avoid product and service obsolesce”. According to Covin and Slevin (1991), in dynamic environment the existing range of product, services, technologies and processes becomes inadequate and a firm has to look for new products and services, in order to maintain the

current market position. Without innovation and assumption of risk, these firms will fall behind their competitors and lose their market share (Dess and Beard, 1984; Miller, 1988; Covin and Slevin, 1991; Wiklund and Shepherd, 2003). According to Tan and Litschert (1994), “strategy-making in more dynamic and competitive environment tends to reflect a higher degree of proactive, innovative and risk-taking strategies”. Khandwalla (1987) argue that firms competing in dynamic environment are able to cope up with various difficulties by adopting risk-taking attitude, innovative behaviour, and proactive strategies and tactics. Likewise, Helfat (1997) claims that in dynamic environment, where changes are continuous and opportunities are numerous, firms who have the ability and courage to anticipate future demand and to commit significant amount of resources on the name of pioneering behaviour i.e. introduction of new product and services ahead of competitors, are likely to grow faster than non entrepreneurial firm. In dynamic environment, entrepreneurial behaviour is critical for firm’s survival (Stearns *et al.*, 1995). According to Zahra *et al.* (2002), “success in today's competitive, dynamic and complex environment requires a firm to quickly and effectively adjust their marketing and management activities to the changing business needs”. Jennings and Lumpkin (1989) have found that organizations which frame their strategies by monitoring and scanning their environment - perform better and ensure their survival. According to Naman and Slevin (1993), “increased dynamism can be conducive for pursuit of entrepreneurship because it trends to create opportunities in firms market”. Perceived decline of an industry as well as high growth prospects will push companies into increased innovative and renewal activities (Zahar, 1993). According to Covin and Slevin (1991), “organizations that do not take risk in dynamic environment will lose their market share and will not be able to maintain a strong industry standing relative to more aggressive competitors”.

Forgoing review of literature suggest that environmental uncertainty play a significant role in entrepreneurial orientation - business performance relationship. For the purpose of this study, environmental uncertainty have been conceptualized *as perceived rate of change and innovation in an industry, unpredictability of the actions of competitors and customers, and the relative attractiveness of the industry*. These

variables not only create complexities in firm's environment but also make the business more challenging.

### **2.9.2: Organizational Structure**

Organizational structure can be defined as the sum total of the ways in which an organization divides its total work among its members. It specifies the roles, reporting relationships and responsibilities that shape decision-making in an organization. It indicates the ability of a firm to make maximum use of available resources through systematic distribution of work, skilful coordination of departmental activities, uninterrupted flow of information, and continuous interaction between organizational members (Chen and Huang, 2007). Bower (1970) reveals that structure channels collaboration, allocates power and responsibility, and prescribes levels of formality and complexity. According to Olsen *et al.* (1998), organizational structure contemplates organization's internal pattern of relationships to attain organizational objectives. Hage (1980) considers organizational structure as formal scheme of relationship, communication, and decision process, which allow an organization to develop its functions and achieve its objectives. Organizational structure can be defined as the formal allocation of work roles and the administrative mechanisms to control and integrate work activities across organizational boundaries (Child, 1972). Organization structure, at one end provides the foundation for establishment of organizational rules, regulations and standard operating procedures, at other end it also specifies the extent of power which an organizational position commands in the process of decision making (Jacobides and Winter, 2007). Dalton *et al.* (1980) consider organizational structure as the reflection of the organizational values, beliefs and governance. They suggest that an effective form of organizational structure not only optimizes the ratio of organizational efforts to output but it also defines the scope of acceptable behaviour for an individual.

As far as relationship between strategy and structure is concerned, contemporary organizational theory assumes that external changes force internal adjustments i.e. structure follows the strategy. Chandler (1992) affirms the above argument by stating that strategic changes lead to structural changes and whenever business strategy changes, the

organizational structure have to change. Snow and Hambrick (1980) highlight the importance of organizational structure for a business organization by arguing that it is the effective integration of firm's internal operations, which ensure the judicious implementation of organizational strategy and successful attainment of firm's objectives. According to Kraus *et al.* (2011), "changes in the structure of the firm become necessary when strategies change, and when administrative and economic inefficiencies occur". A well defined organization structure helps an entrepreneurial firm in effective allocation of work, resources and administrative mechanisms necessary for the implementation of organizational strategies. An appropriate organizational structure ensures the achievement of strategic objectives and brings ease and effectiveness in performance of various operational and strategic tasks. Organizational structure is a powerful tool, which impedes or facilitates the exploration and exploitation of an environmental opportunity (Analoui and Karami, 2003).

Organizational structure is multi faceted construct having specialization, centralization, participation, formalization, complexity, and integration as its integral components (Burns and Stalker, 1961; Child, 1972, Brickley and Dark, 1987; Beamish *et al.*, 1999; Meijaard *et al.*, 2005; Pleshko and Nickerson, 2008; Fegh-hi, 2010; Martinez-Leon and Martinez-Garcia, 2011). Specialization reflects the number of functional divisions created within the organization; distribution of organizational tasks among these functional divisions; and the degree of expertise within these divisions (Pugh *et al.*, 1968). Centralization discloses the extent to which decision making powers has been distributed among various organizational members (Fredrickson, 1986). If relatively few individuals make decisions, a structure is highly centralized. If a large number of organizational members contribute towards the decision-making process, the degree of centralization is minimal. Participation is the extension of centralization. It reflects the degree of contribution made by different layers of management in decision making process (Dwyer and Welsh, 1985). Formalization reveals the extent to which an organization uses written rules and regulations for guiding the behaviour of various individuals and teams. Standardization is closely linked to formalization. It ensures the adherence of predefined rules and brings uniformity in organizational behaviour.

Complexity and integration disclose the extent of difficulties in aligning various organizational tasks and functions (Fredrickson, 1986; Burton *et al.*, 2006). Phenomena like: geographical dispersion, span of control, number of hierarchical levels etc often affect the extent of integration of various activities of an organization.

Though organizational structure reflects different facets of work environment but in entrepreneurship and strategic management literature it has often reflected through mechanistic - organic continuum (Covin and Slevin, 1988; Naman and Slevin, 1993; Kreiser and Davis, 2010). Mechanistic structure, reflected through 'high levels of bureaucracy, restricted channels of communication, centralized decision-making, formalized planning system, tight control, and a constrained level of flexibility', often represents a bureaucratic form of organization. It is a type of structure in which organizational goals are formulated by top management (high degree of centralization) and then these goals- in form of targets, reach to middle and lower layers of management through a long process of downward communication (low level of participation). High degree of formalization forces employees to adhere strictly to formal rules and regulations, which consequently suppresses the scope for novelty, innovation and creativity. Weber (1947) asserts that the bureaucratic organizational structure, reflected through top-down approach, with well defined roles and responsibilities, is more suitable for firms which operate in a relatively stable environment. Because of its application and acceptance of impersonal rules, rigid division of activities, precise definition of each functional job along with clearly defined roles and responsibilities and hierarchically organized authority, a mechanistic structure ensures the smooth handling of routine problems and presents an ideal situation for mass production. But at the same time, it has also been argued that by enforcing standardized behaviour, complexities of dynamic environment cannot be addressed. Lam and Lundvall (2006) affirms the above argument by stating that the mechanistic structure is more appropriate for reinforcing past behaviour in a relatively stable environment (Robbins, 1993). But in dynamic environment, where changes are continuous and opportunities are numerous, organizations with rigid structure, due to the reduced level of novelty and creativity, often fall short in capitalizing emerging opportunities. Organic structure, on the other hand,



presents an adaptive form of organization and is based upon the belief that organizations prefer: open channels of communication - with free flow of information across different layers of management; participative style of decision making - with a culture of openness and trust; lower vertical differentiation and more of flat and horizontal integrations - with informal and bidirectional communication; lesser formalization and higher integration - by emphasizing knowledge specialization rather than focusing on operative specialization (Nonaka and Takeuchi, 1995; Ahmed, 1998; Hankinson, 1999; Morris *et al.*, 2007). Burgelman (1983) has stated that organic firms, with a change-oriented mission, capability leveraging, and knowledge sharing attitude, are always at forefront of efforts to make necessary changes in firm's environment. According to Lumpkin and Dess (1996), firms with organic structure - because of their inherent flexibility and knowledge specialization - are in a better position to motivate and pursue their members for environmental change and challenges. These firms focus equal distribution of knowledge, decentralization of decision making, informal relationship, and lateral interaction throughout the organizational network. Because of their adaptive nature, these firms become more appropriate for handling unusual and complex situations of dynamic environment.

As far as relationship between organizational structure and entrepreneurship is concerned, literature affirms that organization's choice of structure has a significant effect on the nature and strength of entrepreneurial orientation – business performance relationship (Khandwalla, 1977; Miles and Snow, 1978; Rumelt, 1982; Naman and Slevin, 1993; Lumpkin and Dess, 1996; Matsuno *et al.*, 2002; Morris *et al.*, 2007; Kraus *et al.*, 2011). Burns and Stalker (1961) have highlighted the role of organizational structure for adoption of entrepreneurial behaviour by stating that organic structures promote innovation and novelty while mechanistic structures stifle innovativeness through bureaucratic actions. According to Kreiser and Davis (2010), “an appropriate structure for an entrepreneurial organization should include decentralization of decision-making authority, minimal hierarchical levels, free-flowing communication channels, and closely integrated R&D, manufacturing, and marketing functions”. Miller and Friesen

(1982) by comparing the structural attributes of entrepreneurial and conservative firms conclude that rigid hierarchies are poorly suited for entrepreneurial firms.

Literature reveals that environmental uncertainties drive the structures of an organization (Mintzberg, 1979). It has been observed that organic structures, when aligned with dynamic environment, often lead to increased levels of business performance (Slevin and Covin, 1990; Naman and Slevin, 1993). The unpredictability of the variables like customer demand and preferences, competitor's actions and technological trends make the environment dynamic. In such an environment, organizations which prefer knowledge specialization, equal distribution of knowledge, informal and bidirectional communication, flexibility in administrative relations, and higher integration of the organizational activities, often produce a higher business performance (Lumpkin and Dess, 1996). Whereas in an environment where customer taste and preferences remain constant, a superior business performance can be achieved by emphasising high degree of standardization and formalization (Burns and Stalker, 1961; Lawrence and Lorsch, 1967). High degree of standardization and formalization not only brings uniformity in individual behaviour, but it also reduces the possibility of unwanted outcomes by enhancing functional clarity i.e. who will perform a particular task, how the task is to be performed, where it is to be performed, and by what time it is to be performed etc. Burgelman (1983) affirms the above arguments by theorizing that the organic organizational structure would be more productive in uncertain and changing environment - where innovation is absolutely necessary, while the mechanistic structure is more appropriate for mature industries and stable environment. Organic structure allow firms to exhibit a rapid response to changing business environment, while mechanistic structures are better suited to predictable environment where rapid organizational responses are not typically required. According to Dumaine (1991), organic structure - because of its informal relationship, fluid role, and lateral communication, is needed to generate innovation, while mechanistic structure - because of its task specialization, hierarchy, and vertical communication, is needed to implement them.

Above arguments suggest that the strength of the entrepreneurial orientation – business performance relationship is significantly impacted by the kind of organizational structure adopted by a firm. In the context of this study, *organizational structure has been conceptualized in terms of mechanistic-organic continuum. Mechanistic structure reflects a bureaucratic form of organization with restricted channels of communication, centralized decision-making, a formalized planning system, tight system of control, and a constrained level of flexibility. Organic structure reflects an adaptive form of organization with open channels of communication, equal distribution of knowledge, participative style of decision making, lesser formalization, lower vertical differentiation and higher horizontal integration.*

## **2.10: Need for the Study**

Forgoing review of literature suggests that an entrepreneurial orientation is a key ingredient for organizational success. However, empirical results are mixed. Many studies find a significant positive relationship between entrepreneurial orientation and business performance. However, some studies find an insignificant relationship between entrepreneurial orientation and business performance. Some studies suggest that the relationship between entrepreneurial orientation and business performance is not that straightforward; rather it is shaped like inverted U. A very high or low degree of entrepreneurial orientation is not always desirable in certain market and in structural conditions. The variation in the reported relationships between entrepreneurial orientation and business performance demand further investigation.

Literature reveals a double opinion regarding the dimensionality of entrepreneurial orientation construct. One set of studies have conceptualized entrepreneurial orientation as a uni-dimensional construct, under the assumption that the focal dimensions of entrepreneurial orientation are usually highly correlated with each other. Another set of studies argue that various components of entrepreneurship may vary independently and have a unique contribution towards firm's success. The literature suggest that all five dimensions of entrepreneurial orientation viz. innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy are important for

firm's success, but it is also suggested that only a sub-set of these dimensions may be relevant for a particular context in which a firm operates. Therefore, deconstruction of the entrepreneurial orientation construct becomes necessary so that organisational decision makers may focus specifically on those dimensions which significantly influence business performance rather than focusing on all dimensions of entrepreneurial orientation.

Entrepreneurial orientation – business performance models has been built and tested mainly in the developed economies and very little has been done in developing economies. While entrepreneurial orientation is universally important, it is especially critical in developing economies, where firms often do not possess sufficient advanced technological capabilities and knowledge resources required for innovation. Lack of resources often restricts them from adopting risk taking behaviour. The dysfunctional bureaucratic environment not only makes the business environment complex but it also adversely affects the degree of proactiveness and autonomy. Inadequate or ineffective measures to protect patents and copyrights reduce the competitiveness of a firm and discourage innovative and novel actions. The unique characteristics of developing economies i.e. lack of required infrastructure facilities, high degree of bureaucracy, prevalence of family owned business with conservative attitude, make the relationship between entrepreneurial orientation and business performance more challenging and complex. It is quite possible that in emerging economies, organizations tend to imitate the successful discoveries and often hesitate to take significant amount of risk. India, one of the fastest growing economies, presents a compelling context to examine and refine our understanding of the entrepreneurial orientation – business performance relationship.

The institutional environment of India is undergoing a large-scale transition. At present, the Indian business environment is very conducive for the entrepreneurial activities. Indian government as well as intelligentsia are stressing on the need for promoting entrepreneurship as a solution to the Indian problems of unemployment and economic growth. There is a need to know the factors responsible for the success of entrepreneurial activities. It is pertinent to explore the orientation of firms suited for entrepreneurship so that concerted efforts can be made to develop these orientations

among India firms. However the literature suggests that there are not many studies exploring the entrepreneurial orientation in India. Further, there is hardly any study conducted for exploring the relationship between entrepreneurial orientation and business performance in Indian context. The present study is an endeavour to fill these gaps.

The result of the study will help the industry and entrepreneurs in understanding the implications of different dimensions of entrepreneurial orientation for the performance of their business. Secondly, the result of the study will help the public policy makers in designing the policy for the promotion of entrepreneurship in India. As the study proposes to develop a model of entrepreneurial orientation - business performance relationship for Indian context, it will also contribute to the existing literature on entrepreneurship and relationship between entrepreneurial orientation and business performance.

## **CHAPTER - III**

### **RESEARCH METHODOLOGY**

This chapter describes the research methodology adopted for the conduct of present study. Section 3.1 describes research design and provides detail regarding research questions, research objectives, hypotheses and scope of the study. Section 3.2 reveals the methodology followed for the development of research instrument. Section 3.3 provides detail regarding the execution of the survey. Sample profile has been presented in section 3.4. Section 3.5 specifies data analysis techniques and section 3.6 talks about the limitations of the study.

#### **3.1: Research Design**

Descriptive, cross sectional research design has been adopted for the conduct of the present study. Survey method of data collection has been applied through a self developed research instrument.

##### **3.1.1: Research Questions**

As the literature reveals that there is a considerable variation in the reported relationship between entrepreneurial orientation and business performance, so the major purpose of the study is to clarify the nature of entrepreneurial orientation - business performance relationship by answering following research questions:

1. How do organizational demographics effect the entrepreneurial posture of a firm?
2. Is there a significant relationship between entrepreneurial orientation and business performance?
3. Is the relationship between entrepreneurial orientation - business performance contextual in nature?

##### **3.1.2: Research Topic**

**Relationship of Entrepreneurial Orientation and Business Performance  
of North Indian Firms**

### **3.1.3: Objectives of the Study**

Following objectives have been set for the study.

1. To study the entrepreneurial orientation of North Indian firms.
2. To study the association of entrepreneurial orientation with organizational demographics.
3. To study the impact of entrepreneurial orientation on the business performance.
4. To study the role played by organizational and industrial environment in entrepreneurial orientation - business performance relationship.
5. To suggest a model of entrepreneurial orientation - business performance relationship, for Indian context.

### **3.1.4: Hypotheses**

To study the above objectives, following hypotheses have been framed:

H<sub>1</sub>: Age of firm is not significantly associated with the degree of entrepreneurial orientation.

H<sub>2</sub>: Size of firm (based on annual turnover) is not significantly associated with the degree of entrepreneurial orientation.

H<sub>3</sub>: Size of firm (based on number of employees) is not significantly associated with the degree of entrepreneurial orientation.

H<sub>4</sub>: Nature of firm is not significantly associated with the degree of entrepreneurial orientation.

H<sub>5</sub>: Type of organization is not significantly associated with the degree of entrepreneurial orientation.

H<sub>6</sub>: There is no significant impact of the entrepreneurial orientation on the business performance.

H<sub>7</sub>: The entrepreneurial orientation – business performance relationship is not moderated by environmental uncertainty.

H<sub>8</sub>: The entrepreneurial orientation – business performance relationship is not moderated by organizational structure.

### **3.1.5: Scope of the Study**

The scope of the study has been restricted to North Indian firms (from Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Uttaranchal, Uttar Pradesh, Rajasthan, Chandigarh, and Delhi). This is a firm level study. The key informants (senior level key executives, who have decision making power in the organization) have been taken as respondents to represent each firm.

## **3.2: Variables and Measures**

A systematic procedure has been adopted for the development of the research instrument. Firstly, various constructs of interest (e.g. entrepreneurial orientation, environmental uncertainty, organizational structure, and business performance) were specified and the item pool was generated. The item pool was examined and relevant items were selected for the survey. Finally the survey instrument was subjected to content validity by seeking the opinion of subject experts.

### **3.2.1: Construct Specification**

Construct specification is a pre requisite of scale development (Kaplan, 1973; Churchill, 1979; Haladyna, 2012; Rico *et al.*, 2012). A precise definition of construct - by specifying what is to be included, what is to be excluded and the context, in which it is to be applied - not only makes the inferences meaningful but also enhances the generalization of research findings. For the purpose of the operationalization, various constructs of interest have been defined in the following sections:

#### **3.2.1(a): Entrepreneurial Orientation**

Entrepreneurial orientation has been considered as a firm level construct. It has been conceptualized as the extent to which a firm showcases innovativeness, demonstrates proactiveness, prefers risk taking, shows competitive aggressiveness and provides autonomy to its employees.



**Innovativeness** has been defined as firm's propensity to support and encourage new ideas, experimentation and creativity- likely to result in new products, services, technologies or processes. It reflects the willingness of a firm to depart from existing practices and to adopt new ways of doing the things. It represents willingness and readiness of all organizational members to accept and adopt organizational changes.

**Proactiveness** has been specified as the willingness and ability of a firm to anticipate new developments as early as possible and to act as first mover *viz-a-viz* competitors. It reflects the vigilance of a firm towards its environment.

**Risk Taking** has been regarded as the tendency of a firm to take business-related chance, to act boldly, to venture into unknown new markets, and to commit a relatively large portion of assets into ventures with uncertain outcome. It discloses the managerial preferences to go beyond tried-and-tested. It also reflects the willingness of a firm to promote the culture of risk taking.

**Competitive Aggressiveness** reflects the propensity of a firm to directly and intensely challenge its competitors - to achieve entry or improve position, i.e. to outperform industry rivals in the marketplace. It reveals the extent of firm's assertiveness towards competitive challenges.

**Autonomy** reflects the propensity of a firm to promote independence and self direction in thought and action and the presence of a culture that encourages such behaviour among entrepreneurial leaders or teams. It discloses the extent to which an organization allows its members to go for a novel idea and carrying it through to completion.

### **3.2.1(b): Environmental Uncertainty**

Environmental uncertainty has been defined in terms of perceived rate of change and innovation in an industry, unpredictability of the actions of competitors and customers, and the relative attractiveness of the industry.

### **3.2.1(c): Organizational Structure**

Organizational Structure has been defined in terms of mechanistic-organic continuum. Mechanistic structure reflects a bureaucratic form of organization with restricted channels

of communication, centralized decision-making, formalized planning system, tight systems of control, and a constrained level of flexibility. Organic structure reflects an adaptive form of organization with open channels of communication, equal distribution of knowledge, participative style of decision making, lesser formalization, lower vertical differentiation and higher horizontal integration.

### **3.2.1(d): Business Performance**

Business performance has been defined as the extent to which an organization meets the requirement of different stakeholder's viz. customers, employees, owners, creditors and community etc. In context of present study, the performance of an organization has been defined in following context.

**Subjective Business Performance Relative to Competitors** has been defined as the ability of the firm to perform on indicators like: sales growth, market share, return on investment, service quality, customer satisfaction, employee satisfaction, employee turnover, product innovation, process innovation and product quality *viz-a-viz* their major competitors, over the past three years.

**Subjective Business Performance Relative to Industry** reflects the relative performance of an organization against the industry average on indicators like: sales growth, profitability, growth rate, service quality, customer satisfaction, employee satisfaction, product innovation, process innovation and product quality.

**Archival Business Performance** has been regarded as the ability of the firm to meet its economic goals in absolute terms. It is defined in terms of growth and profitability of an organization.

### **3.2.2: Generation of Item Pool and Selection of Sample of Items**

During this phase of scale development, the pool of items was generated for the selection of the sample of items. 166 items (24 reflecting innovativeness, 21 measuring risk taking, 23 gauging proactiveness, 16 specifying competitive aggressiveness, 19 reflecting autonomy, 20 representing business performance, 21 measuring environmental

uncertainty, and 22 focusing upon organizational structure) have been identified from literature to tap various constructs under investigation. All these items were screened out for ambiguity (judgment on the chances that the item can be interpreted in different ways), redundancy (extent to which an item overlaps with some items capturing the same construct), clarity (extent to which the item is concise/accurate/direct), relevance (appropriateness of an item in measuring the underlying concept) and adequacy (extent to which an item covers the underlying concept). This process resulted in 67 items being finally selected for the instrument. Some of the statements were worded negatively to reduce response pattern bias, as suggested by Schriesheim and Hill (1981).

### **3.2.2(a): Operationalization of Entrepreneurial Orientation Construct**

The first significant scale development for operationalizing entrepreneurial orientation was Khandwalla's (1977) scale of entrepreneurial orientation. It was a three item scale, two items measuring the degree of product innovation and one item measures the risk taking propensity of an organization. Next comes the Miller and Friesen's (1982) scale of entrepreneurial orientation, which was a refinement of the Khandwalla's (1977) scale. In the five item scale developed by the Miller and Friesen, three items assesses the inclination of a firm towards product innovation and remaining two items discloses the risk taking propensity of a firm. Subsequently, both Khandwalla's (1977) scale and Miller and Friesen's (1982) scale of entrepreneurial orientation were revised by Coven and Slevin (1989). Covin and Slevin (1989) scale consists of nine items: three items measuring innovativeness, three items measuring proactiveness, and three items measuring risk taking. One item was adopted from Khandwalla (1977), four items were adapted from Miller and Friesen (1982), and the remaining four items were developed by the Covin and Slevin. Covin and Slevin (1989) have considered entrepreneurial orientation as a uni-dimensional construct and argued that entrepreneurial orientation is the summation of the extent to which top managers are inclined to take business related risk (the risk-taking dimension), to favour change and innovation - in order to obtain a competitive advantage for their firm (the innovation dimension), and to compete aggressively with other firms (the proactiveness dimension). Lumpkin and Dess (1996)

commented upon the narrowness of Covin and Slevin's (1989) scale and added the dimensions of competitive aggressiveness and autonomy under the purview of entrepreneurial orientation. Lumpkin and Dess (1996) have considered entrepreneurial orientation as a multidimensional construct under the belief that the contribution of the each of the dimension of entrepreneurial orientation towards business performance is unique. Lumpkin and Dess (2001, 2009) have developed a 22 items scale for measuring the entrepreneurial orientation of a firm. Nine items has been adopted from the Covin and Slevin's (1989) scale and rest of the items were developed by Lumpkin and Dess. Although these scales, especially Covin and Slevin's scale, have been commonly and comprehensively used in literature, but these operationalizations suffer from some common weaknesses. These operationalizations have focused primarily upon product innovation; attitude of top managers towards high risk projects and uncertainties; propensity of a firm to lead their competitors; adoption of 'kill the competitor' posture etc and lacked measures for firm's overall propensity towards innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy. The fundamental theoretical basis of the operationalization of the entrepreneurial orientation construct lies in the fact that entrepreneurial firms have a higher propensity towards innovation, risk taking, proactiveness, competitive aggressiveness and autonomy (Gupta and Pandit, 2012). In order to capture the various facets of these domains, the scale of entrepreneurial orientation has been revised and a thirty three item scale has been developed. Eight items gauging innovativeness (Table 3.1) reflects firm's propensity to introduce new products, services or technological processes through the culture of novelty, experimentation and creativity. Risk taking comprising of five items (Table 3.2), reflects firm's propensity to engage in high-risk projects; venturing into unknown new markets; committing a large portion of resources to venture with uncertain outcomes; supporting and encouraging risk taking behaviour; and managerial preferences for bold versus cautious actions in order to achieve firm objectives. Proactiveness comprises of eight items (Table 3.3). These eight items reveal the firm's inclination towards anticipating and acting on future needs by seeking new opportunities which may or may not be related to the present line of operations and introduction of new products and brands ahead of competition.

Competitive aggressiveness consists of six questions (Table 3.4). These questions reflect the degree of intensity, with which a firm tracks its competitors, anticipates their counter attack and adopts an aggressive attitude towards them. Autonomy, comprising six items (Table 3.5), discloses the extent to which an organization allows its employees to employ 'out of box' thinking and to work outside the existing chain of command for finding innovative and unique solutions to problem and needs.

### **3.2.2(b): Operationalization of Environmental Uncertainty Construct**

To operationalize environmental uncertainty, an eight item seven point scale refined by Naman and Slevin (1993) - based upon the earlier work of Khandwalla (1977), Miller and Friesen (1982) and Covin and Slevin (1989) has been adopted (Table 3.6). First five items capture those aspects of firm's perceptual environment, which reflect 'rate of change and innovation in an industry as well as the uncertainty or unpredictability of the actions of competitors and customers'. These items gauge the perception of the decision makers regarding the velocity and intensity of change in factors like: customer demand and preferences, actions of competitors, pace of technological updation and product obsolesce. Next three items disclose the relative attractiveness of the industry in terms of investment opportunities, regulatory restrictions and dominance of the environmental forces etc. This scale has been widely used in entrepreneurship literature (e.g. Slater and Narver, 1994; Becherer and Maurer, 1997; Atuahene-Gima and Ko, 2001; Yusuf, 2002; Kuivalainen *et al.*, 2004; Wiklund and Shepherd 2005; Covin *et al.*, 2006; Morris *et al.*, 2007; Ghobadian *et al.*, 2010; Kreiser and Davis, 2010; Kraus *et al.*, 2011).

### **3.2.2(c): Operationalization of Organizational Structure Construct**

To operationalize organizational structure, a seven item seven point scale refined by Naman and Slevin (1993) - based upon the earlier work of Burns and Stalker, (1961), Child (1972), Khandwalla (1977), and Covin and Slevin (1989) has been adopted (Table 3.7). These items measure the extent to which an organization favours open channels of communication, equal distribution of knowledge, participative style of decision making, lesser formalization, lower vertical differentiation and higher horizontal integration. The

Naman and Slevin (1993) scale of organizational structure has been commonly used in entrepreneurial and strategic management research (e.g. Jaworski and Kohli, 1993; Barrett *et al.*, 2000; Brown *et al.*, 2001; Burton and Obel, 2004; Chen and Huang, 2007; Morris *et al.*, 2007; Yener and Aykol, 2008; Kreiser and Davis, 2010; Kraus *et al.*, 2011).

### **3.2.2(d): Operationalization of Business Performance Construct**

The driving force behind the development of business performance scale is the contextual nature of business performance. Business performance has been assessed in three different context i.e. subjective business performance relative to competitors, subjective business performance relative to industry and archival business performance.

Subjective business performance relative to competitors has been operationalized through a ten-item scale (Table 3.8). Respondents were asked to compare the performance of their firm with their major competitors, over the past 3 years. The relative performance was measured on indicators like: sales growth, market share, return on investment, service quality, customer satisfaction, employee satisfaction, employee turnover, product innovation, process innovation and product quality. These indicators of financial and non-financial performance were derived from the literature (Table 3.8).

To operationalize subjective business performance relative to industry, a nine-item scale has been developed (Table 3.9). Subjective business performance relative to industry reflects the relative performance of an organization against the industry average. The relative performance was measured on indicators like: sales growth, profitability, growth rate, service quality, customer satisfaction, employee satisfaction, product innovation, process innovation and product quality. All these indicators have been commonly and comprehensively used in literature (Table 3.9).

Archival business performance has been operationalized and measured in terms of five financial/ non financial indicators identified from the literature (e.g. Dess and Robinson, 1984; Pearce *et al.*, 1987; Venkatraman and Ramanujam, 1987; Chandler and Hanks, 1993; Covin *et al.*, 1994; Forker *et al.*, 1996; Zahra and Garvis, 2000; Antoncic and Hisrich, 2004; Wall *et al.*, 2004; Morris *et al.*, 2007). These indicators include sales growth (SG), asset growth (AG), return on sales (ROS), return on assets (ROA), and

return on net worth (RONW). Archival data from the annual reports of the companies has been used. Sales growth and asset growth were calculated using compounded annualized growth rate (CAGR) of three years (2010-2013). For other indicators, average of the figures of three years (2010-2013) has been taken into consideration.

Based upon above discussion, a sixty seven item research instrument has been developed and assessed for the content validity. Five categorical variables representing organizational demographics (age of firm, size of firm - based on annual turnover, size of firm - based on number of employees, nature of organization and type of organization) have also been included in the research instrument (Annexure I).

### **3.2.3: Content Validity and Final Operationalization**

Content validity is one of the important attribute of scale development and refinement. It reflects the subjective assessment of the subject matter experts regarding representativeness and comprehensiveness of the scale items (Hinkin, 1995; Polit and Beck, 2006; Yaghmale, 2009; Rico *et al.*, 2012). It is careful and critical examination of the items- sampled for inclusion in an instrument, for ambiguity, redundancy, clarity, relevance and adequacy. High degree of agreement among subject matter experts affirms the claim that instrument adequately samples the research domain and the sample of items selected for the representation of the underlying construct are appropriate, clear, adequate and relevant for the given purpose of assessment (Beck and Gable, 2001; Wynd *et al.*, 2003; Lynn, 1986; Mastaglia *et al.*, 2003).

The content validity of the various scales under instigation has been examined by seeking opinion of 12 academic experts and 20 management practitioners. All the academic experts were from the area of research and management education. Management practitioners include top managerial officials of North Indian firms. All the reviewers were contacted personally and requested to: (i) critically examines the *relevance, representativeness and comprehensiveness* of the items sampled for inclusion in the instrument and (ii) to suggest necessary modification in the given operationalization. Brief description of the construct was provided to experts along with the operationalization. During this process no major mistake was identified, however

some minor changes regarding the wording and phrasing of a few items was suggested by some of the experts. These suggestions were duly incorporated. The final operationalization of the various constructs has been presented below:

**Table 3.1 Items Selected for Measuring Innovativeness**

Sr. No.	Construct	Statement	Item Code	Source
1	Innovativeness	In general, the top managers of my business unit favour a strong emphasis on R&D, technology leadership and innovations.	IN_1	Miller and Friesen, 1982; Covin and Slevin, 1989.
2		In general, the top managers of my business unit favour making significant changes in existing product line/services offering.	IN_2	Miller and Friesen, 1982; Covin and Slevin, 1989.
3		Very many new lines of products or services have been marketed by my business unit in the past 3 years.	IN_3	Miller and Friesen, 1982; Covin and Slevin, 1989.
4		In general, my firm invest heavily in new product development.	IN_4	Yang <i>et al.</i> , 2007.
5		In general, the top managers of my business unit are willing to try new ways of doing things and seek unusual, novel solutions.	IN_5	Wang, 2008.
6		In general, my firm emphasizes on developing new technology.	IN_6	Yang <i>et al.</i> , 2007.
7		In general, my firm invest heavily in process improvement.	IN_7	Yang <i>et al.</i> , 2007.
8		In general, the top managers of my business unit discourage people to think and behave in original and novel ways.*	IN_8	Wang, 2008.

\*Reverse coded



**Table 3.2 Items Selected for Measuring Risk Taking**

Sr. No.	Construct	Statement	Item Code	Source
1	Risk Taking	In general, the top managers of my business unit have a strong inclination of high risk projects (with chances of very high returns).	RT_1	Miller and Friesen, 1982; Covin and Slevin, 1989.
2		In general, the top managers of my business unit believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.	RT_2	Miller and Friesen, 1982; Covin and Slevin, 1989.
3		When confronted with decision making situations involving uncertainty, my business unit typically adopts a bold and aggressive posture in order to maximize the probability of exploiting potential opportunities.	RT_3	Covin and Slevin, 1989.
4		Top managers around here like to implement plans only if they are very certain that they will work*.	RT_4	Matsuno <i>et al.</i> , 2002.
5		Risk-takers are recognized and rewarded in our organization, whether they are successful or not.	RT_5	Soininen <i>et al.</i> , 2012.

\*Reverse coded

**Table 3.3 Items Selected for Measuring Proactiveness**

Sr. No.	Construct	Statement	Item Code	Source
1	Proactiveness	In dealing with its competitors, my firm typically initiates actions which competitors respond to.	PR_1	Covin and Slevin, 1989.
2		In dealing with its competitors, my firm is very often the first business to introduce new products/services, administrative techniques, operating technologies etc.	PR_2	Covin and Slevin, 1989; Naman and Slevin 1993; Zahra and Gravis, 2000.
3		In dealing with its competitors, my firm typically adopts a very competitive, ‘undo-the-competition’ posture.	PR_3	Covin and Slevin, 1989; Naldi <i>et al.</i> , 2007.
4		In general, top management of my firm spend time discussing customer future needs.	PR_4	Jaworski and Kohli, 1993.
5		My firm actively collect and evaluate information on consumer needs and preferences.	PR_5	Gonzalez-Benito <i>et al.</i> , 2009.
6		In general, my firm actively collect and evaluate information on technological developments.	PR_6	Zhao <i>et al.</i> , 2011.
7		My firm actively collects and evaluates information on interest rate, exchange rate, industry growth rate, and inflation rate etc.	PR_7	Matsuno <i>et al.</i> , 2002; Zhao <i>et al.</i> , 2011.
8		In general, there is an ongoing, active search for big opportunities in my firm.	PR_8	Soininen <i>et al.</i> , 2012.

**Table 3.4 Items Selected for Measuring Competitive Aggressiveness**

<b>Sr. No.</b>	<b>Construct</b>	<b>Statement</b>	<b>Item Code</b>	<b>Source</b>
1	Competitive Aggressiveness	My firm regularly benchmarks its activities against the best players in industry.	CA_1	Matsuno <i>et al.</i> , 2002.
2		Capturing the maximum market share is the top priority and we often cut prices for it.	CA_2	Venktaraman, 1989.
3		Our organization adopts innovative methods to beat the competition.	CA_3	Matsuno <i>et al.</i> , 2002.
4		My firm engages in competitive intelligence to generate actionable foresight for strategy making.	CA_4	Zahar <i>et al.</i> , 2002; Gonzalez-Benito <i>et al.</i> , 2009.
5		My firm usually adopts an aggressive attitude towards our competitors.	CA_5	Lumpkin and Dess, 2001; Wang, 2008.
6		In our organization, we indulge in competitor response modeling and war gaming exercises	CA_6	Zahar <i>et al.</i> , 2002.

**Table 3.5: Items Selected for Measuring Autonomy**

Sr. No.	Construct	Statement	Item Code	Source
1	Autonomy	In general, the top managers of my firm believe that individuals or work groups operating independently, that is, outside the organizational chain of command, get the best result.	AU_1	Lumpkin <i>et al.</i> , 2009.
2		In general, the top managers of my firm believe that individuals and/or teams pursuing business opportunities can take decisions on their own without constantly referring to their supervisor/s.	AU_2	Hughes and Morgan, 2007.
3		In general, the top managers of my firm encourage individuals and/or teams pursuing business opportunities to proceed without having to justify their action at every stage of development.	AU_3	Lumpkin <i>et al.</i> , 2009.
4		In general, the top managers of my firm encourage individuals and/or teams to think ‘outside the box’ when making decisions.	AU_4	Lumpkin <i>et al.</i> , 2009.
5		In general, the top managers of my firm supports the efforts of individuals and/or teams that work autonomously	AU_5	Hughes and Morgan, 2007.
6		Our firm encourages employees to make decisions by their own.	AU_6	Hughes and Morgan, 2007.

**Table 3.6 Items Selected for Measuring Environmental Uncertainty**

Sr. No.	Construct	Statement	Item Code	Source
1	Environmental Turbulence	In general, our business unit needs to change its marketing practices extremely frequently (e.g. semi-annually).	ENV_1	Standardized scale of Naman and Slevin, 1993.
2		In general, the rate of products/ services obsolescence is very high.	ENV_2	
3		In general, actions of competitors are unpredictable.	ENV_3	
4		In general, demand and tastes are almost unpredictable.	ENV_4	
5		In general, the modes of production/service change often and in a major way.	ENV_5	
6		The external environment in which my business unit operates is very risky, one false step can mean my business unit's undoing.	ENV_6	
7		The external environment in which my business unit operates is very stressful, challenging, hostile; very hard to keep afloat.	ENV_7	
8		The external environment in which my business unit operates is dominating in which my business unit's initiatives count for very little against the tremendous political, technological or competitive forces.	ENV_8	

**Table 3.7 Items Selected for Measuring Organizational Structure**

Sr. No.	Construct	Statement	Item Code	Source
1	Organizational Structure	In general, the operating management philosophy in my business unit favour.....		Standardized scale of Naman and Slevin, 1993.
		Open channels of communication with important financial and operating information flowing quite freely throughout the business unit.	OS_1	
2		Managers' operating styles allowed to range freely from the very formal to the very informal.	OS_2	
3		A strong tendency to let the expert in a given situation have the most say in decision making even if this means temporary bypassing of formal line authority.	OS_3	
4		A strong emphasis on adapting freely to changing circumstances without too much concern for past practice.	OS_4	
5		A strong emphasis on getting things done even if it means disregarding formal procedures.	OS_5	
6		Loose, informal control; heavy dependence on informal relationships and norms of cooperation for getting work done.	OS_6	
7		A strong tendency to let the requirements of the situation and the individual's personality define proper on-job behaviour.	OS_7	

**Table 3.8 Items Selected for Measuring  
Subjective Business Performance Relative to Competitors**

Sr. No.	Construct	Statement	Item Code	Source
1	Subjective Business Performance relative to competitors	Compared to the major competitors, in the last three years, how has our business performed in terms of.....		
		Sales Growth	PRC_1	Venkatraman, 1989; Wiklund and Shepherd, 2003; Tang and Tang, 2012.
2		Market Share	PRC_2	Morgan and Strong, 2003; Clercq <i>et al.</i> , 2010; Tang and Tang, 2012.
3		Return on Investment	PRC_3	Venkatraman, 1989; Matsuno <i>et al.</i> , 2002; Wiklund and Shepherd, 2003.
4		Service Quality	PRC_4	Wiklund and Shepherd, 2003; Stam and Elfring, 2008.
5		Customer Satisfaction	PRC_5	Morgan and Strong, 2003; Stam and Elfring, 2008.
6		Employee Satisfaction	PRC_6	Kaplan and Norton, 1996; Kennerley and Neely 2002.
7		Employee Turnover	PRC_7	Kaplan and Norton, 1996; Kennerley and Neely 2002; Houck <i>et al.</i> , 2012.
8		Product Innovation	PRC_8	Wiklund and Shepherd, 2003; Gonzalez-Benito <i>et al.</i> , 2009; Tang and Tang, 2012
9		Process Innovation	PRC_9	Wiklund and Shepherd, 2003; Stam and Elfring, 2008; Tang and Tang, 2012
10	Product Quality	PRC_10	Atuahene-Gima and Ko, 2001; Wiklund and Shepherd, 2003; Yildiz and Karakas, 2012.	

**Table 3.9 Items Selected for Measuring  
Subjective Business Performance Relative to Industry**

Sr. No.	Construct	Statement	Item Code	Source
1	Subjective Business Performance relative to Industry	Compared to the industry average..		Venkatraman, 1989; Wiklund and Shepherd, 2003; Tang and Tang, 2012.
		We have higher sales growth.	PRI_1	
2		We are more profitable.	PRI_2	Stam and Elfring, 2008; Clercq <i>et al.</i> , 2010; Kraus <i>et al.</i> , 2012.
3		We are growing more rapidly	PRI_3	Shane and Kolvereid, 1995; Matsuno <i>et al.</i> , 2002; Tang <i>et al.</i> , 2007; Gonzalez-Benito <i>et al.</i> , 2009.
4		We have better service quality.	PRI_4	Wiklund and Shepherd, 2003; Stam and Elfring, 2008.
5		We have higher customer satisfaction.	PRI_5	Morgan and Strong, 2003; Gonzalez-Benito <i>et al.</i> , 2009.
6		We have higher employee satisfaction.	PRI_6	Kaplan and Norton, 1996; Kennerley and Neely 2002; Antic and Sekulic, 2006.
7		We have better product innovation.	PRI_7	Wiklund and Shepherd, 2003; Madhoushi <i>et al.</i> , 2011; Tang and Tang, 2012
8		We have better process innovation.	PRI_8	Wiklund and Shepherd, 2003; Stam and Elfring, 2008; Madhoushi <i>et al.</i> , 2011; Tang and Tang, 2012
9	We have better product quality.	PRI_9	Atuahene-Gima and Ko, 2001; Wiklund and Shepherd, 2003; Stede <i>et al.</i> , 2006.	



### **3.2.4: Scaling and Pilot Testing**

The selection of the response format constitutes another facet of scale development. The extent to which an instrument is able to capture the true score of the underlying concept is also affected by the fact that how much variability a scale provides to the respondents - while expressing their level of agreement or disagreement with a particular scale item (Lundstrom and Lamont, 1976). Scaling is a process of defining a continuum, on which measured objects are to be located. It provides correspondence rules i.e. a certain value on a scale that corresponds to some true value of a concept (Spector, 1992). The purpose of scaling is to define a continuum for assigning numbers to objects, which represents respondent's overall attitude towards the given phenomena. Type of scaling needed for an instrument is always depends upon the fact that how sensitive a construct is? For a more sensitivity construct, there is a need for scale with numerous categories. To capture the presence or absence of an attribute among population or sample, dichotomous response category may satisfy the need. In context of the present study, dichotomous scaling techniques such as 'agree or disagree', was not sufficient to capture the variability of the underlying construct. So for the adequate measurement of the different constructs of interest, a seven point, Likert-type scale has been used.

To identify the potential problems in the instrument regarding the clarity of items, understanding of response format, and acceptability of the questions, a pilot survey has been conducted on a group of 45 respondents. No major problem was reported by the respondents. The final instrument used for survey is presented in Annexure I.

### **3.3: Execution of Survey**

Data has been collected from both listed and non-listed companies of North India (Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Uttarakhand, Uttar Pradesh, Rajasthan, Chandigarh, and Delhi). Firstly, NSE and BSE listed companies- having their registered office in the North Indian States and Union Territories were considered for survey. There were 887 firms from North India, which were listed on NSE and BSE. Out of the 887 firms, only 608 firms were actively traded on NSE/BSE. Out of the 608 companies, the key informants from 500 companies were contacted for a personal survey.

The key informants of 212 firms agreed to participate in the survey. Non listed companies having their registered office in the North Indian and having annual turnover more than Rs. 50 crore have also been added under the scope of the present study. Purposive sampling technique has been adopted for the collection of data of non listed companies. About 600 non listed firms were approached. Out of these, 283 firms participated in the survey. The responses were examined for their completeness and seriousness. After removing the non-serious and/or incomplete responses, 457 responses (201 listed firms and 256 non listed firms) were finally selected for analysis.

### 3.4: Sample Profile

Table 3.10 shows the demographic profile of the sample. The sample is representative enough of the North Indian firms. Out of 457 organizations, 201 organizations were listed on BSE/NSE and 256 organizations were non-listed. 68.27% of organizations belong to manufacturing sector; service organization comprises of 31.73% of total sample. A small proportion of firms i.e. 19.47% have age 15 year or less and 80.53% of firms have age more than 15 years. 155 firms have turnover more than Rs. 500 crore and 68.08% of organizations have turnover between Rs. 50 - 500 crore. 74.84% of organizations have the employee strength of more than 250 and only 115 organizations have employee strength of 250 or less.

**Table 3.10 Sample Profile (N= 457)**

Sr. No.	Parameter	Description	Number of firms	Percentage
1.	Type of Organization	Listed	201	43.98%
		Non- Listed	256	56.02%
2.	Nature of Industry	Manufacturing	312	68.27%
		Service	145	31.73%
3.	Age of your organization	More than 15 years	368	80.53%
		Up to 15 years	89	19.47%
4.	Annual Turnover	More than Rs. 500 crore	155	33.92%
		Between Rs. 50-500 crore	302	66.08%
5.	Number of employees	More than 250	342	74.84%
		Up to 250	115	25.16%

### **3.5: Data Analysis**

The collected data has been analyzed using uni-variate, bi-variate and multivariate analysis techniques. Specifically, Descriptive Statistics have been assessed to examine the basic characteristics of the sample data. Mahalanobis  $D^2$  index has been used to assess the multivariate normality. Confirmatory Factor Analysis with maximum likelihood criteria has been adopted for the measurement and validation of various constructs. Exploratory Factor Analysis has been applied to explore the dimensionality of business performance construct. Multiple Correlation has been used to examine inter-construct correlation. Chi-square Test of Independence has been applied for assessment of the association of entrepreneurial orientation with the organizational demographics. Structural Equation Modeling has been used to measure the impact of entrepreneurial orientation on the performance of a business in six different models of entrepreneurial orientation – business performance relationship. Chi-square Difference Test has been adopted for comparison of various competing models of entrepreneurial orientation – business performance relationship. Moderation Analysis has been adopted for measuring the impact of environmental uncertainty and organizational structure on entrepreneurial orientation – business performance relationship.

In addition to Microsoft Excel, the software packages SPSS 19.0 and AMOS 19.0 were used for computerized data analysis. Financial databases Prowess and Capitaline were assessed for the archival business performance data.

### **3. 6: Limitations of the Study**

There are a number of limitations that influence the generalisability of this study. The findings of the study must be viewed in light of following limitations:

1. The sample selection was based on purposive sampling, rather than a random probability sample. Additional research can be conducted using a random probability sample.
2. The study is based on perception of individual key informants. Response bias may have crept in and may not have presented the true picture of the firm's orientation. Average response of multiple key informants could be considered to get more

accurate picture of entrepreneurial orientation – business performance relationship.

3. The current study is cross-sectional in nature and gives a static picture of the entrepreneurial orientation – business performance relationship. The study does not measure the effect of change in the strategic posture on the firm's performance.
4. Findings of the study are based on a heterogeneous sample of 457 large scale North Indian firms. These firms belong to multiple industrial contexts. It is quite possible that relationship between entrepreneurial orientation and business performance may vary from sector to sector. By restricting the scope of the study to a particular sector more specific inferences could be drawn.
5. The study is based on input from Indian firms. The findings may be relevant for other emerging economies having similar business environment as that of India. However, we do not claim the generalization of the results.

## **CHAPTER - IV**

### **MEASUREMENT AND VALIDITY**

This chapter presents the process followed for measurement and validation of various constructs. Sections 4.1 describe the descriptive statistics of the sample data. The measurement and validation process of constructs under investigation has been presented in section 4.2.

#### **4.1: Descriptive Statistics**

As far as measurement and validation of research instrument is concerned, before evaluating the psychometric properties of various constructs, it becomes necessary to describe and understand the descriptive statistics of the sample data. Descriptive statistics examines the accuracy of the data entry process; measures the variability of responses and reveals the spread of data points across the sides of the distribution. The understanding of descriptive statistics helps in the interpretation and generalization of research results.

In the context of present study, univariate and multivariate data analysis techniques have been applied and the data was analyzed in terms of frequency tables, mean, median, mode, standard deviation, skewness, kurtosis, and standard error. The purpose was to understand the fundamental characteristics of sample data and to make the inferences more meaningful for the targeted audience.

The assessment of descriptive statistics (Table 4.1) reveals that all the variables fall within the predefined maximum and minimum values with no missing figures. Standard deviation ranges from .82 to 1.87, which was reasonable. The variation and spread of the data points across the sides of the distribution was found satisfactory. Standard error ranges from .04 to .09. These low indices of standard error support the accuracy of measurement process in capturing the true score of population. To assess the multivariate normality of various constructs of interest, Mahalanobis  $D^2$  index of normality has been employed through statistical software AMOS 19.0. Mahalanobis  $D^2$  is a multidimensional version of a z-score. It measures the distance of a case from the

centroid (multidimensional mean) of a distribution, at a given covariance (multidimensional variance) and reflect outliers. The multivariate normality of various constructs of interest was found satisfactory and no major problem was identified.

**Table 4.1 Descriptive Statistics**

Sr. No.	Construct	Item Code	No. of Cases	Mean	Median	Mode	Standard Deviation	Skewness	Kurtosis	Standard Error of Mean
1	Autonomy	AU_1	457	3.25	2.00	2.00	1.65	.71	-.89	.08
2		AU_2	457	4.44	5.00	6.00	1.70	-.58	-1.09	.08
3		AU_3	457	4.56	5.00	6.00	1.71	-.61	-1.05	.08
4		AU_4	457	4.87	6.00	6.00	1.69	-.67	-.90	.08
5		AU_5	457	4.71	5.00	6.00	1.52	-.66	-.65	.07
6		AU_6	457	5.38	6.00	6.00	1.31	-1.14	.98	.06
7	Competitive Aggressiveness	CA_1	457	5.82	6.00	6.00	1.22	-1.25	1.35	.06
8		CA_2	457	4.38	5.00	6.00	1.87	-.35	-1.31	.09
9		CA_3	457	5.41	6.00	6.00	1.34	-1.07	.84	.06
10		CA_4	457	5.40	6.00	6.00	1.17	-.88	.87	.05
11		CA_5	457	5.22	5.00	5.00	1.28	-.68	.15	.06
12		CA_6	457	5.02	5.00	6.00	1.31	-.76	.18	.06
13	Environmental Uncertainties	ENV_	457	4.04	4.00	3.00	1.44	.19	-.96	.07
14		ENV_	457	2.19	2.00	2.00	1.33	1.29	.96	.06
15		ENV_	457	3.74	3.00	3.00	1.40	.32	-.93	.07
16		ENV_	457	3.57	3.00	2.00	1.59	.40	-1.08	.07
17		ENV_	457	3.85	3.00	3.00	1.51	.27	-1.21	.07
18		ENV_	457	3.89	4.00	3.00	1.39	.17	-.92	.07
19		ENV_	457	3.56	3.00	2.00	1.59	.33	-1.15	.07
20		ENV_	457	4.77	5.00	6.00	1.48	-.53	-.91	.07
21	Innovativeness	IN_1	457	5.25	6.00	6.00	1.36	-.71	-.05	.06
22		IN_2	457	2.95	2.00	2.00	1.62	.66	-.59	.08
23		IN_3	457	5.39	6.00	6.00	1.35	-.93	.58	.06
24		IN_4	457	5.37	6.00	6.00	1.34	-.83	.23	.06
25		IN_5	457	5.89	6.00	6.00	1.19	-1.34	1.73	.06
26		IN_6	457	5.66	6.00	6.00	1.36	-1.11	.75	.06
27		IN_7	457	5.40	6.00	6.00	1.22	-.84	.66	.06
28		IN_8	457	5.97	6.00	7.00	1.18	-1.37	1.54	.06
29	Organizational Structure	OS_1	457	5.20	6.00	6.00	1.26	-1.22	.91	.06
30		OS_2	457	4.07	4.00	2.00	1.66	-.21	-1.39	.08
31		OS_3	457	4.41	5.00	6.00	1.65	-.29	-1.36	.08
32		OS_4	457	4.65	5.00	6.00	1.66	-.44	-1.07	.08
33		OS_5	457	3.00	2.00	2.00	1.57	.85	-.50	.07
34		OS_6	457	4.03	5.00	5.00	1.53	-.30	-1.18	.07
35		OS_7	457	4.23	5.00	6.00	1.70	-.34	-1.36	.08

36	Proactiveness	PR_1	457	4.80	5.00	4.00	1.29	-.36	-.41	.06
37		PR_2	457	5.33	5.00	5.00	.96	-.73	1.90	.04
38		PR_3	457	3.66	3.00	2.00	1.75	.41	-1.05	.08
39		PR_4	457	6.03	6.00	6.00	.96	-1.49	4.47	.04
40		PR_5	457	6.00	6.00	6.00	.90	-1.43	3.49	.04
41		PR_6	457	6.02	6.00	6.00	1.00	-1.18	1.86	.05
42		PR_7	457	5.97	6.00	6.00	.92	-.92	1.33	.04
43		PR_8	457	5.92	6.00	6.00	.93	-1.38	3.96	.04
44	Risk Taking	RT_1	457	4.10	4.00	4.00	1.57	.03	-.91	.07
45		RT_2	457	4.30	5.00	6.00	1.79	-.24	-1.46	.08
46		RT_3	457	4.22	5.00	6.00	1.85	-.22	-1.48	.09
47		RT_4	457	3.99	5.00	5.00	1.75	-.12	-1.37	.08
48		RT_5	457	4.99	5.00	6.00	1.49	-.77	-.34	.07
49	Subjective Business Performance Relative to Competitors	PRC_1	457	5.13	5.00	5.00	1.13	-.59	.81	.05
50		PRC_2	457	4.89	5.00	5.00	1.26	-.39	.07	.06
51		PRC_3	457	4.89	5.00	5.00	1.15	-.47	.71	.05
52		PRC_4	457	6.11	6.00	6.00	.89	-1.00	1.03	.04
53		PRC_5	457	6.14	6.00	7.00	.94	-1.30	2.07	.04
54		PRC_6	457	5.62	6.00	6.00	1.10	-.87	1.15	.05
55		PRC_7	457	5.51	6.00	6.00	1.10	-.85	1.22	.05
56		PRC_8	457	5.79	6.00	6.00	1.07	-.93	.92	.05
57		PRC_9	457	5.80	6.00	6.00	1.02	-1.10	2.03	.05
58		PRC_10	457	6.16	6.00	7.00	.89	-.95	.41	.04
59	Subjective Business Performance Relative to Industry	PRI_1	457	5.28	5.00	6.00	1.22	-.87	.80	.06
60		PRI_2	457	5.05	5.00	5.00	1.24	-.72	.63	.06
61		PRI_3	457	5.29	5.00	6.00	1.23	-.87	.81	.06
62		PRI_4	457	6.30	6.00	7.00	.81	-1.16	1.33	.04
63		PRI_5	457	6.26	6.00	7.00	.86	-1.31	2.13	.04
64		PRI_6	457	5.69	6.00	6.00	1.07	-1.06	1.89	.05
65		PRI_7	457	5.91	6.00	6.00	1.04	-1.15	1.93	.05
66		PRI_8	457	5.90	6.00	6.00	.97	-1.30	2.95	.05
67		PRI_9	457	6.27	6.00	7.00	.82	-1.17	1.34	.04

\*All items were measured on a seven-point Likert type scale

## 4.2: Measurement and Validation

Measurement is a process through which an abstract concept is quantified, classified and interpreted (Carmines and Zeller, 1979; Hinkin and Schriesheim, 1989). It can be defined as a scientific process of assigning some numbers to some of the attributes of an abstract concept (Cronbach, 1955; Nunnally, 1978; Cherryholmes, 1988; Sireci, 1998). The focus of the measurement is on the crucial relationship between the empirically grounded

indicators and the underlying unobservable concept (Schmidt *et al.*, 1985, 1991; Cherryholmes, 1988; Schriesheim *et al.*, 1993). The very basic idea of measurement is to obtain a true score for an event or phenomena.

Validation is a process which evaluates the degree to which a measure succeeds in measuring what it intends to measure (Campbell and Fiske, 1959; Schriesheim *et al.*, 1991). It is a process of evaluating the extent to which observed empirical indicators represent the underlying theoretical construct i.e. extent to which the observed score reflected through empirical indicators give the true reflection of theoretical perspective. Although the purpose of validation is to minimize the difference between the observed score of an object and its true score, but it has been usually seen that every instrument contain some degree of error i.e. the observed score differ from the true score. Bagozzi *et al.* (1991) have affirmed the above argument by quoting that “a measure often reflects not only a theoretical concept of interest but also measurement error”. Measurement error is the extent to which an instrument captures some extraneous construct rather than capturing the true meaning of the underlying construct. The extent of measurement error, contained by an instrument, has often been assessed by looking at the degree of the random error and systematic error (Fiske, 1982; Bagozzi *et al.*, 1991).

Random measurement error is a type of error which has no specific pattern of its occurrence (Anastasi, 1976; Adcock and Collier, 2001) and generally arises due to the inherent inconsistency of human behaviour i.e. a single respondent might give different rating to the same measure over repeated trials. Personal factors like: individual's willingness to express his or her true feelings, mood swing, state of mind and degree of fatigue etc often influences the degree of random measurement error. Random measurement error generally tends to weaken the observed relationship among variables in statistical analyses and may induce errors in inference. Under some circumstances, random error may inflate parameter estimates and in some other circumstances it may deflate the degree of observed variance (Bagozzi *et al.*, 1991). Although the presence of random error is universally acknowledge, but the degree of random errors can be minimized by employing multiple observations through multiple but highly interrelated items of the underlying theoretical construct.



Systematic error (also called as non random error) is a type of error which follows a specific pattern and generally arises due to the factors that systematically affect measurement of a variable across the sample. The possible reason of systematic measurement error could be inadequate item representation, inappropriate item selection and poorly stated items - which may result in response biases like socially desirable responding, midpoint responding and extreme responding. Systematic error has a systematic biasing effect on the measuring instrument and generally predictable in nature, as it always occurs in the same direction (under or over estimation) and with same magnitude (Portney and Watkins, 2000). Systematic error has no tendency of averaging out itself through multiple observations.

As far as the assessment of random and systematic error is concerned, the extent to which a measure is free from the random error is a function of reliability and the extent to which a measure is relatively free from systematic error is the function of the validity (Nunnally, 1978).

#### **4.2.1: Reliability**

Reliability is a one of the basic psychometric requirement of scale validity. Reliability is concerned with the ability of an instrument to produce similar result, time and again under the assumption that group of respondents and prevailing conditions remain same. It reflects the degree to which an instrument is free from random error and consistently measures the underlying construct with reasonable accuracy (Churchill, 1979; Leedy and Ormrod, 2001; Yang *et al.*, 2007; Hair *et al.* 2008). Internal consistency is an important aspect of reliability. It describes the extent to which the different scale items of a same construct correlate with one another. A higher degree of internal consistency, not only proves the convergence of scale items towards the common definition of underlying construct but it also affirms the claim that amount of variance captured by a scale is significantly higher to the amount of error variances i.e. random error in a scale. Random error is assessed by squaring the inter-item correlation and subtracting the same from 1.00. As the estimate of reliability increases, the fraction of a test score that can be attributed to random error decreases.

Cronbach alpha is one of the most popular methods for assessing internal consistency (Churchill, 1979; Peter, 1981). Closer the cronbach's alpha to 1, higher the internal consistency. In general, the reliabilities less than 0.70 indicates a poor estimate of observed variance i.e. amount of error variance in the test score is relatively higher to the observed variance. In context of the present study, reliability of the various constructs has been assessed through cronbach's alpha.

The value of cronbach's alpha for all the constructs (Table 4.2) are above the threshold limit of 0.70.

**Table 4.2 Reliability Statistics**

Sr. No.	Construct	Item Code	Item to total correlation	Cronbach's Alpha if item deleted	Cronbach's Alpha for the construct
1.	Innovativeness	IN_1	.755	.869	.891
		IN_2	.316	.918	
		IN_3	.723	.872	
		IN_4	.810	.863	
		IN_5	.779	.868	
		IN_6	.753	.869	
		IN_7	.750	.871	
		IN_8	.578	.886	
2.	Proactiveness	PR_1	.469	.814	.822
		PR_2	.595	.796	
		PR_3	.329	.861	
		PR_4	.673	.786	
		PR_5	.692	.786	
		PR_6	.645	.789	
		PR_7	.629	.793	
		PR_8	.659	.789	
3.	Risk Taking	RT_1	.783	.891	.911
		RT_2	.841	.877	
		RT_3	.822	.882	
		RT_4	.803	.886	
		RT_5	.635	.918	
4.	Competitive Aggressiveness	CA_1	.727	.741	.804
		CA_2	.056	.919	
		CA_3	.760	.728	
		CA_4	.686	.751	
		CA_5	.742	.735	
		CA_6	.753	.731	

5.	Autonomy	AU_1	.259	.905	.861
		AU_2	.757	.817	
		AU_3	.824	.803	
		AU_4	.845	.799	
		AU_5	.782	.815	
		AU_6	.513	.860	
6.	Environmental Uncertainties	ENV_1	.799	.923	.934
		ENV_2	.546	.939	
		ENV_3	.843	.920	
		ENV_4	.851	.918	
		ENV_5	.858	.918	
		ENV_6	.823	.921	
		ENV_7	.858	.918	
		ENV_8	.575	.939	
7.	Organizational Structure	OS_1	.489	.918	.909
		OS_2	.874	.879	
		OS_3	.846	.882	
		OS_4	.837	.883	
		OS_5	.303	.938	
		OS_6	.874	.880	
		OS_7	.896	.876	
8.	Subjective Business Performance Relative to Competitors	PRC_1	.751	.932	.938
		PRC_2	.717	.934	
		PRC_3	.724	.933	
		PRC_4	.769	.931	
		PRC_5	.800	.930	
		PRC_6	.737	.932	
		PRC_7	.699	.934	
		PRC_8	.797	.929	
		PRC_9	.799	.929	
		PRC_10	.768	.931	
9.	Subjective Business Performance Relative to Industry	PRI_1	.771	.921	.930
		PRI_2	.734	.924	
		PRI_3	.777	.920	
		PRI_4	.771	.922	
		PRI_5	.756	.922	
		PRI_6	.669	.926	
		PRI_7	.791	.919	
		PRI_8	.760	.921	
		PRI_9	.759	.922	

However, one of the item under the scale of competitive aggressiveness i.e. ‘capturing the maximum market share is the top priority and we often cut prices for it’ coded as ‘CA\_2’;

were understood and answered by the respondents in a manner that differ from other items of same construct (item to total correlation of .056 - Table 4.2) and by dropping this item a better internal consistency of the scale can be obtained. Hence the scale item 'CA\_2', from the construct of competitive aggressiveness, has been dropped and as a result the value of cronbach's alpha increases significantly to .919 from .804 (Table 4.3).

**Table 4.3 Construct-wise Reliability of Scales**

Construct	No. of Items	Cronbach's Alpha
Innovativeness	8	.891
Proactiveness	8	.822
Risk- Taking	5	.911
Competitive Aggressiveness	5	.919
Autonomy	6	.861
Subjective Business Performance relative to Competitors	10	.938
Subjective Business Performance relative to Industry	9	.930
Organizational Structure	7	.909
Environmental Uncertainties	8	.934

Though the high degree of internal consistency of various constructs of interest supports the inert-relatedness of scale items, but it does not assess the accuracy of measurement. Reliability focuses on a particular property of the measurement i.e. the extent to which a measure is free from random error. It has nothing to do with accuracy of a measure i.e. the extent of systematic error. It is quite possible that a scale assesses something *consistently* but not *accurately*. Whether a measure is accurate or not is the realm of validity (Nunnally, 1978).

#### **4.2.2: Validity**

The validity of the various constructs of interest has been examined by employing Campbell and Fiske criteria of validity. Campbell and Fiske (1959) proposed two aspects of construct validity: convergent and divergent validity. Convergent validity is the degree to which multiple attempts to measure the same concept are in agreement. Whereas, discriminant or divergent validity examines the extent to which the group of items -

representing a specific construct- differentiate that construct from another set of items - representing some other distinct construct (Bagozzi *et al.*, 1991).

The convergent validity has often been assessed by looking at the standardized factor loadings (SFL), average variance extracted (AVE) and composite reliability (CR). SFL reflect the amount of explained variance by an indicator in accordance to the underlying construct (Hair *et al.*, 2008; Markus, 2012; Byrne, 2013). Loading of .5 or more confirm the convergence of scale item i.e. the indicator is strongly related with its associated construct (Bagozzi *et al.*, 1991; Hair *et al.*, 2008; Byrne, 2013). AVE provides the summary of overall convergence of a scale and reflects the average communality (Fornell and Larker, 1981) i.e. the variance captured by an instrument through all its items. An AVE of less than .5 indicates that, on average, more error (i.e. systematic error) remains in measure than variance explained by the latent factor structure (Hair *et al.*, 2008), whereas a score of more than .5 affirms the higher amount of explained variance. CR indicates the internal consistency of the instrument. Any value of .70 or higher affirms high degree of internal consistency between different scale items.

Divergent validity tests whether the concepts that are supposed to be unrelated are, in fact, unrelated. It is generally examined through the comparison of the AVE score with the squared correlations of respective constructs. A lower index of shared variance (squared correlation) between each pair of constructs against the minimum of the AVEs of both of the concerned constructs affirms the divergent validity of the underlying constructs (Fornell and Larker, 1981). The logic here is based on the idea that if two or more concepts are unique, then valid measures of each should not correlate too highly (Bagozzi *et al.*, 1991).

In context of present study, the convergent and divergent validity of different constructs have been examined during the validation of measurement models. Confirmatory Factor Analysis (CFA) has been utilized to estimate measurement adequacy (Hair *et al.*, 1998). In the context of the scale development and validation, recent literature (e.g. Rentz *et al.*, 2002) affirms the superiority of CFA over Exploratory Factor Analysis. To assess the fit between theory and reality, CFA rather concentrating on a single index, often rely upon numerous fit indices like: Normed Chi-square index,

Goodness-of-fit index (GFI), Adjusted goodness-of-fit index (AGFI), Root mean square residual (RMR) and Root mean square error of approximation (RMSEA) – as indicators of absolute fit indices (Hu and Bentler, 1995; MacCallum *et al.*, 1996; Steiger, 2007); Comparative Fit Index (CFI), Tucker-Lewis index (TLI), and Normed fit index (NFI) – as indicators of incremental fit indices (Bentler and Bonnet, 1980; Mulaik *et al.*, 1989; Bentler, 1990; Hu and Bentler, 1995; Kline, 2005; Tabachnick and Fidell, 2007); Parsimony goodness-of-fit index (PGFI) and Parsimony Normed fit index (PNFI) - as indicators of parsimony fit indices. In contrast, these fit statistics are generally not available in standard methods of Exploratory Factor Analysis. A careful consideration is that assessing a measurement model through numerous fit indices is more parsimony approach than one with absolute or single criteria (Hair *et al.*, 1998).

In the context of present study, following criteria (Table 4.4) has been adopted for the measurement and validation of various constructs:

**Table 4.4 Criteria for the Measurement and Validation**

S. No.	Parameter	Criteria
1	Normed Chi-square (ratio of Chi-square to degrees of freedom)	Less than 3
2	Goodness-of-Fit Index (GFI)	At least .90
3	Adjusted Goodness-of-Fit Index (AGFI)	At least .90
4	Normed Fit Index (NFI)	At least .90
5	Comparative Fit Index (CFI)	At least .90
6	Root Mean Square Residual (RMR)	Less than .10
7	Root Mean Square Error of Approximation (RMSEA)	Less than .08
8	Standardized Residuals	Less than 2.5
9	Standardized factor loadings (SFL)	At least .50
10	Average Variance Extracted (AVE)	At least .50
11	Composite Reliability (CR)	At least .70

Source: Hair *et al.*, 2008

#### 4.2.3: Measurement and Validation of Innovativeness

To assess the degree of correspondence between the manifest variables and latent construct of innovativeness a uni-dimensional CFA model (Figure 4.1) has been conceptualized and tested for its psychometric properties. The result of the uni-dimensional CFA model reveals a Chi-square index of 79.20 with 20 degree of freedom i.e. a Normed Chi-square index of 3.96, GFI = 0.958; AGFI = 0.924; NFI = 0.963; CFI =

0.972; RMR = 0.075 and RMSEA = 0.081. A modification index of 10.71 has also been observed between items 'IN\_3' and 'IN\_4'. Standardized residuals (Table 4.5) reveal that an item 'In general, the top managers of my business unit favour..... Making minor changes in existing product line/services offering Vs. Making significant changes in existing product line/services offering' coded as 'IN\_2' have a residual of 3.0. The same item has a SFL of 0.33, which indicates the inability of the item in capturing the true meaning of underlying construct. Result of descriptive statistics (Table 4.1) reveals that the score of the item 'IN\_2' was at a distance from the score of other items of the same construct (positive skewness of .66, whereas all other scale item's have negative skewness). Positively skewed distribution has more data point concentrated on the left of its mean, whereas in case of negatively skewed distribution most of the observations are concentrated towards the upper end of the scale. Reliability statistics (Table 4.2) for the item 'IN\_2' reveals an 'item to total correlation' of 31.6, which again affirms its inconsistency with other scale items.

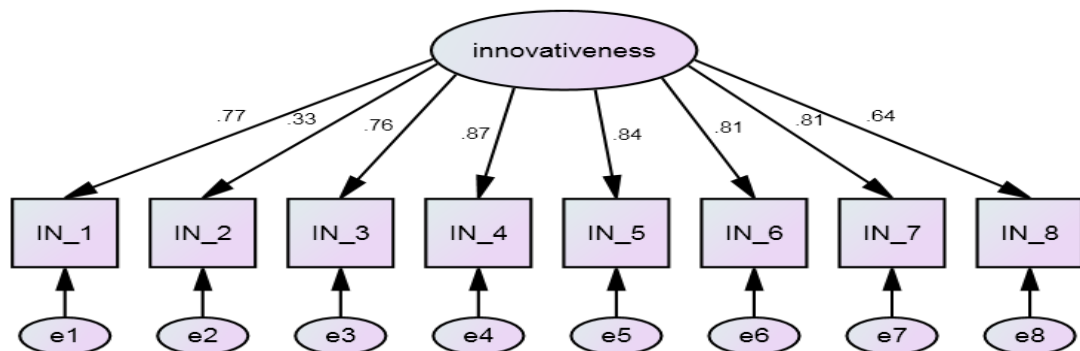


Figure 4.1 CFA Model for Innovativeness

Table 4.5 Standardized Factor Loadings and Residuals for Innovativeness Scale

Item Code	Std. Factor Loadings	Standardized Residual Covariances							
		IN_1	IN_2	IN_3	IN_4	IN_5	IN_6	IN_7	IN_8
IN_1	0.77	0.00							
IN_2	0.33	3.00	0.00						
IN_3	0.76	0.15	0.99	0.00					
IN_4	0.87	-0.06	-0.24	0.70	0.00				
IN_5	0.84	0.12	-0.67	-0.45	-0.05	0.00			
IN_6	0.81	0.24	-0.56	-0.69	-0.33	0.09	0.00		
IN_7	0.81	-0.64	-0.37	-0.02	0.11	-0.05	0.54	0.00	
IN_8	0.64	-0.41	-2.40	-0.28	-0.42	0.89	0.66	-0.18	0.00

As a response to above arguments, item 'IN\_2' has been dropped for the measurement of the construct of innovativeness and a covariance sign has been introduced between 'IN\_3' and 'IN\_4'. The resulting measurement model (Figure 4.2) has been tested for its fit and psychometric properties.

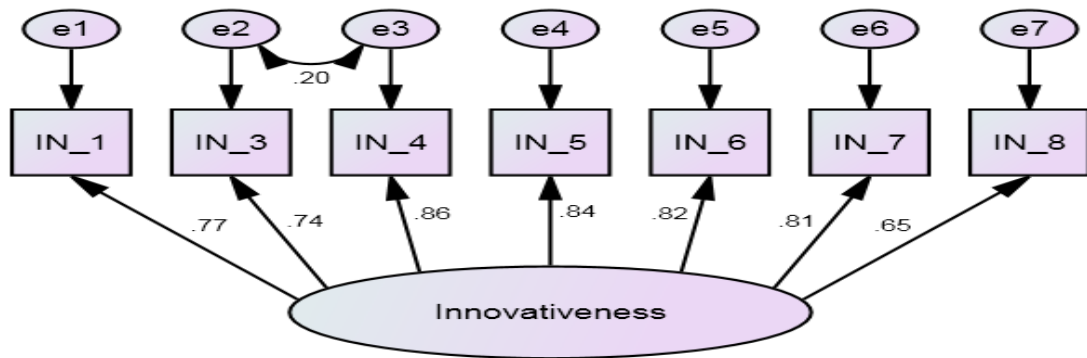


Figure 4.2 Revised CFA Model for Innovativeness

Table 4.6 Psychometric Properties of Innovativeness Scale

Item Code	Std. Factor Loadings	Standardized Residual Covariances							AVE	CR
		IN_1	IN_3	IN_4	IN_5	IN_6	IN_7	IN_8		
IN_1	0.77	0.00							.619	.918
IN_3	0.74	-0.34	0.00							
IN_4	0.86	0.43	0.38	0.00						
IN_5	0.84	0.67	-0.19	-0.14	0.00					
IN_6	0.82	-0.40	0.26	-0.27	0.04	0.00				
IN_7	0.81	-0.10	0.30	-0.44	-0.18	0.00	0.00			
IN_8	0.65	-0.48	-0.61	0.19	0.09	0.19	0.56	0.00		

The revised uni-dimensional CFA model revealed a Normed Chi-square index of 1.764 (22.93/13) with a p-value = .043; GFI = 0.987; AGFI = 0.971; NFI = 0.989; CFI = 0.995; RMR = 0.027; RMSEA = 0.041, and standardized residuals of less than 2.5, which were all acceptable and affirm the significance of the uni-dimensional model of innovativeness. The convergent validity of the construct of innovativeness has been assessed through standardized factor loadings, AVE and CR. Table 4.6 reveals that standardized factor loadings for all items were above the suggested cut-off of 0.50 (Hatcher, 1994), with a minimum of 0.65, and were all significant at 1% level of significance. The AVE of 0.619 meets the criterion of .50. High score of CR (i.e. 0.918) confirms the internal consistency of the scale items.



#### 4.2.4: Measurement and Validation of Risk Taking

To link the theoretical construct of risk taking with its empirical indicators a uni-dimensional CFA model has been conceptualized for empirical testing (Figure 4.3). In uni-dimensional CFA model the construct of risk taking has been represented through five indicators, which load on underlying construct in uniform way. CFA model has been tested for its fit and psychometric properties. The result of CFA model reveals a good fit. The value of all the indices such as: Normed Chi-square, GFI, AGFI, NFI, CFI, RMR, REMSA and all standardized residuals meet threshold limits (Table 4.7). Further, high indices of standardized factor loadings, AVE and CR (Table 4.7) supports the convergent validity of the scale items and affirms the suitability of the uni-dimensional CFA model for the measurement of the underlying construct of risk taking.

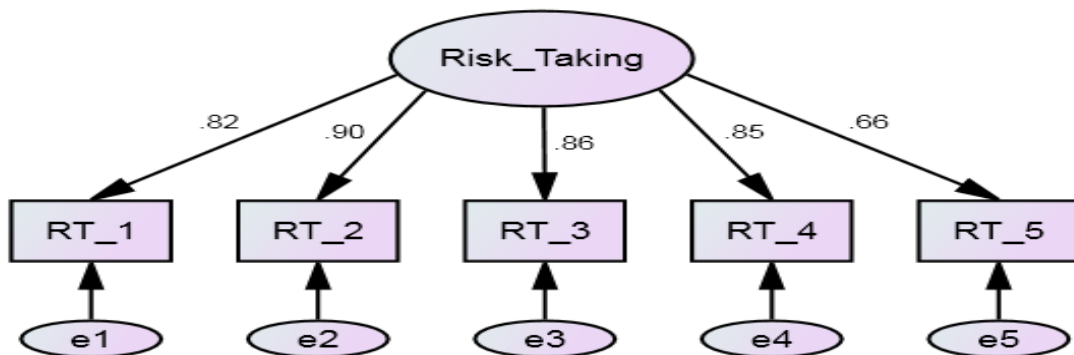


Figure 4.3 CFA Model for Risk Taking

Table 4.7 Model Fit Indices and Psychometric Properties of Risk Taking Scale

Model Fit Indices								
Normed Chi-square	GFI	AGFI	NFI	CFI	RMR	REMSA		
2.68	0.989	0.966	0.991	0.995	0.035	0.061		
Item Code	Std. Factor Loadings	Standardized Residual Covariances					AVE	CR
		RT_1	RT_2	RT_3	RT_4	RT_5		
RT_1	0.82	0.00				.679	.912	
RT_2	0.89	0.02	0.00					
RT_3	0.87	0.44	-0.23	0.00				
RT_4	0.85	-0.55	0.28	-0.01	0.00			
RT_5	0.66	0.09	-0.12	0.00	0.11			0.00

#### 4.2.5: Measurement and Validation of Proactiveness

For the measurement of the proactiveness construct, a uni-dimensional CFA model (Figure 4.4) has been conceptualized and tested for its fit and psychometric properties. In the proposed model, all the eight indicators load on the latent construct in a uniform way.

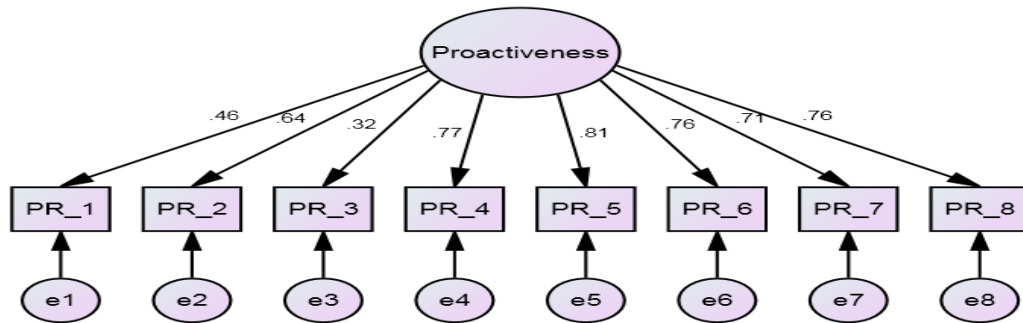


Figure 4.4 CFA Model for Proactiveness

Table 4.8 Standardized Factor Loadings and Residuals for Proactiveness Scale

Item Code	Std. Factor Loadings	Standardized Residual Covariances							
		PR_1	PR_2	PR_3	PR_4	PR_5	PR_6	PR_7	PR_8
PR_1	0.46	0.00							
PR_2	0.64	1.39	0.00						
PR_3	0.32	3.36	0.92	0.00					
PR_4	0.77	-0.57	-0.31	0.45	0.00				
PR_5	0.81	-0.51	-0.35	-0.59	0.37	0.00			
PR_6	0.76	0.20	0.51	-1.56	-0.04	0.12	0.00		
PR_7	0.71	-0.55	-0.56	0.67	0.00	-0.07	0.01	0.00	
PR_8	0.76	0.06	0.15	-0.27	-0.20	-0.01	-0.22	0.47	0.00

The result of CFA model reveals a ratio of Chi-square to df of 2.20 (44.11/20); GFI = 0.977; AGFI = 0.958; NFI = 0.970; CFI = 0.983; RMR = 0.069; and RMSEA = 0.051, which were all acceptable and support the uni-dimensionality of the construct. Standardized residuals (Table 4.8) reveal that one pair of items i.e. ‘In dealing with its competitors, my firm..... Typically responds to actions which competitors initiate Vs. Typically initiates actions which competitors respond to’ referred as ‘PR\_1’ and ‘In dealing with its competitors, my firm..... Typically seeks to avoid competitive clashes, preferring a live and let live posture Vs. Typically adopts a very competitive, Kill-the-competition posture’ referred as ‘PR\_3’ have a standardized residual of 3.36. The

standardized factor loading of these two items also fall below the threshold of .50 (Table 4.8). In addition to the above argument the result of reliability analysis (Table 4.2) also justify the misfit of these two items with the other items of the same construct - item to total correlation of .469 for 'PR\_1' and .329 for 'PR\_3'. Consequently these two items have been dropped from the construct of proactiveness and the revised model (Figure 4.5) has been examined for its fit and validation.

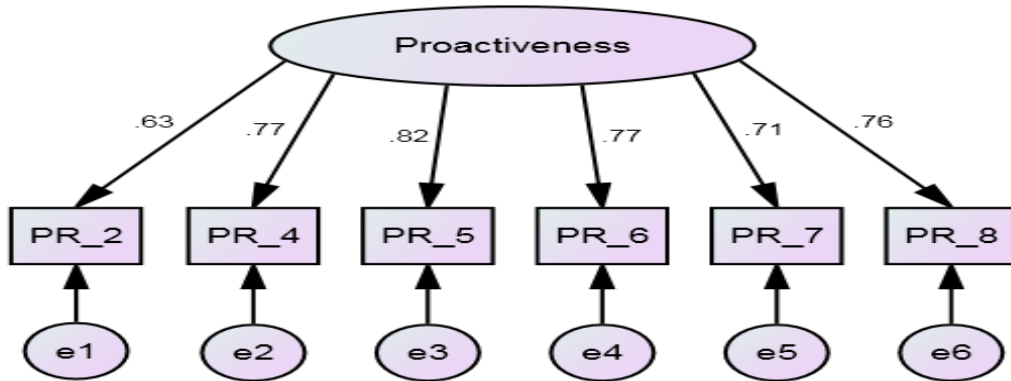


Figure 4.5 Revised CFA Model for Proactiveness

Table 4.9 Psychometric Properties of Proactiveness Scale

Item code	Std. Factor Loadings	Standardized Residual Covariances						AVE	CR
		PR_2	PR_4	PR_5	PR_6	PR_7	PR_8		
PR_2	0.63	0.00					.556	.882	
PR_4	0.77	-0.19	0.00						
PR_5	0.82	-0.27	0.29	0.00					
PR_6	0.77	0.61	-0.09	0.01	0.00				
PR_7	0.71	-0.43	-0.01	-0.13	-0.03	0.00			
PR_8	0.76	0.29	-0.20	-0.06	-0.24	0.49			0.00

The result of the revised CFA model of proactiveness reveals a Normed Chi-square of 0.787 with a p-value = 0.628; GFI = 0.995; AGFI = 0.988; NFI = 0.994; CFI = 0.999; RMR of 0.011; RMSEA = 0.01, and standardized residual of less than 2.5. These indices signify a good model fit. Further, all standardized factor loadings were significant and greater than .50 (Table 4.9). AVE of .556 acknowledges the convergence of different indicators towards the common meaning of the underlying construct of proactiveness. CR of .882 proves the high positive correlation between the different scale items and supports the internal consistency of the scale items.

#### 4.2.6: Measurement and Validation of Competitive Aggressiveness

To estimate the adequacy with which set of observed empirical indicators of the competitive aggressiveness construct describe the latent variable, a uni-dimensional CFA model has been conceptualized and examined for model fit (Figure 4.6).

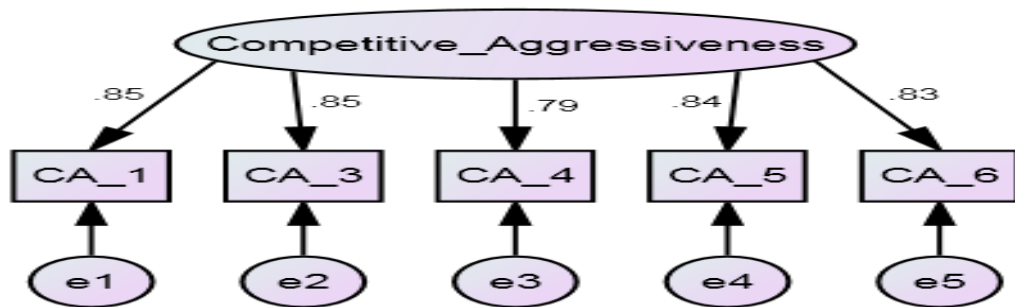


Figure 4.6 CFA Model for Competitive Aggressiveness

**Table 4.10 Model Fit Indices and Standardized Residuals for Competitive Aggressiveness Scale**

Model Fit Indices						
Normed Chi-square	GFI	AGFI	NFI	CFI	RMR	REMSA
5.14	0.977	0.930	0.984	0.987	0.030	0.095
Item Code	Std. Factor Loadings	Standardized Residual Covariances				
		CA_1	CA_3	CA_4	CA_5	CA_6
CA_1	0.85	0.00				
CA_3	0.85	0.60	0.00			
CA_4	0.79	0.15	-0.08	0.00		
CA_5	0.84	-0.32	-0.21	-0.21	0.00	
CA_6	0.83	-0.45	-0.39	0.15	0.76	0.00

Table 4.10 contain the result of the CFA model of competitive aggressiveness. All the indices meet the threshold apart from the index of Normed Chi-square. Normed Chi-square falls outside the threshold limit of 3.0. A modification index of 14.19 has been observed between scale items 'CA\_5' and 'CA\_6'. High modification index suggests that the relationship between 'CA\_5' and 'CA\_6' needs to be tested. In response to above, a covariance sign has been introduced between the error terms of these two indicators and the resulting CFA model (Figure 4.7) has been tested for its fit.

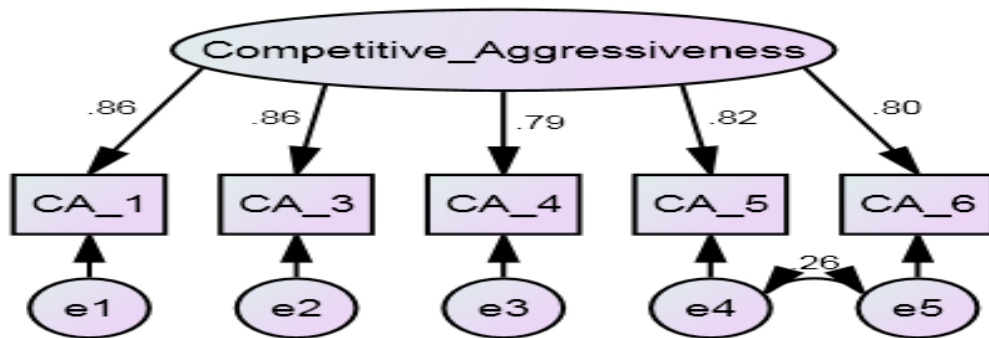


Figure 4.7 Revised CFA Model for Competitive Aggressiveness

Table 4.11 Psychometric Properties of Competitive Aggressiveness Scale

Item Code	Std. Factor Loadings	Standardized Residual Covariances					AVE	CR
		CA_1	CA_3	CA_4	CA_5	CA_6		
CA_1	0.86	0.00					.683	.915
CA_3	0.86	0.22	0.00					
CA_4	0.79	-0.08	-0.28	0.00				
CA_5	0.82	-0.12	0.03	0.14	0.00			
CA_6	0.80	-0.21	-0.12	0.53	0.00	0.00		

The result of revised CFA model reveals a Normed Chi-square of 1.63 with a p-value = 0.164; GFI = 0.994; AGFI = 0.978; NFI = 0.996; CFI = 0.998; RMR = 0.016; RMSEA = 0.037, which were all acceptable and signify a good fit. Standardized residuals were much below than the threshold limit of 2.5 and standardized factor loadings were significantly high (Table 4.11). High score of standardized factor loadings not only affirms the convergence of the scale items towards the underlying construct of competitive aggressiveness but also acknowledges their appropriateness for the measurement of the competitive aggressiveness construct. AVE score of .683 supports the convergent validity of the underlying construct. High score of CR (i.e. 0.915) proves the high degree of positive correlation between the different indicators and acknowledges the internal consistency of the scale items.

#### 4.2.7: Measurement and Validation of Autonomy

To evaluate the strength of relationship between manifest variables and latent construct of autonomy, all the six indicators of autonomy construct have been loaded on the latent construct of autonomy. The resulting measurement model (Figure 4.8) has been tested for

its fit and psychometric properties. The result of uni-dimensional measurement model reveals a good fit: Normed Chi-square of 1.78; GFI = 0.989; AGFI = 0.974; NFI = 0.990; CFI = 0.996; RMR = 0.043; RMSEA = 0.041 and standardized residual of less than 2.5 (Table 4.12). With regard to standardized factor loadings, one of the scale items i.e. ‘In general, the top managers of my firm believe that ..... Individuals or work groups operating within the traditional hierarchy gets the best result Vs. Individuals or work groups operating independently that is, outside the organizational chain of command, gets the best result’ coded as ‘AU\_1’ has a standardized factor loading of .28. The descriptive statistics of ‘AU\_1’ reveals a positive skewness of .71, whereas other items of the same construct have negative skewness (Table 4.1). Reliability statistics for ‘AU\_1’ reveals an item to total correlation of .259 (Table 4.2). All these evidences reflect the inability of ‘AU\_1’ for measurement of the underlying construct of autonomy.

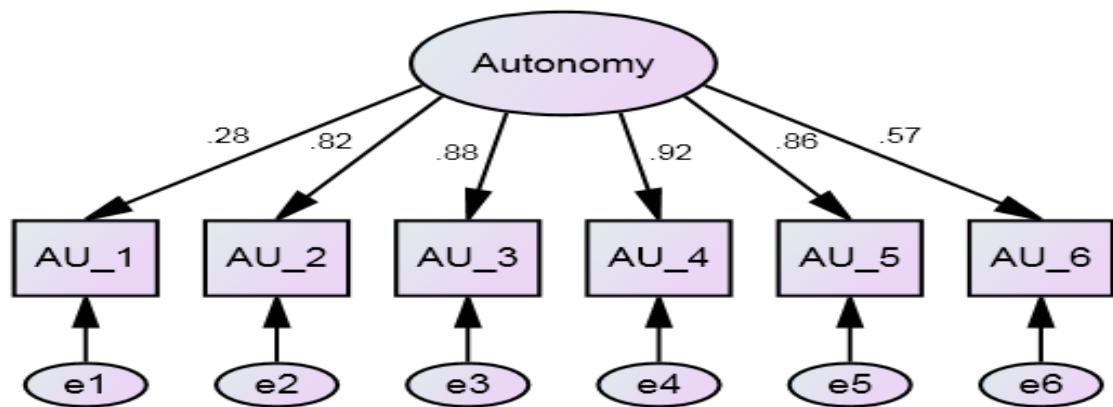


Figure 4.8 CFA Model for Autonomy

Table 4.12 Standardized Factor Loadings and Residuals for Autonomy Scale

Item Code	Std. Factor Loadings	Standardized Residual Covariances					
		AU_1	AU_2	AU_3	AU_4	AU_5	AU_6
AU_1	0.28	0.00					
AU_2	0.82	0.11	0.00				
AU_3	0.88	0.35	0.32	0.00			
AU_4	0.92	0.17	-0.15	-0.07	0.00		
AU_5	0.86	-0.53	0.07	-0.23	0.15	0.00	
AU_6	0.57	-1.19	-0.87	0.34	0.21	-0.03	0.00

As a response to above arguments, 'AU\_1' has been dropped from the construct of autonomy and the resulting measurement model (Figure 4.9) has been examined for its fit and psychometric properties.

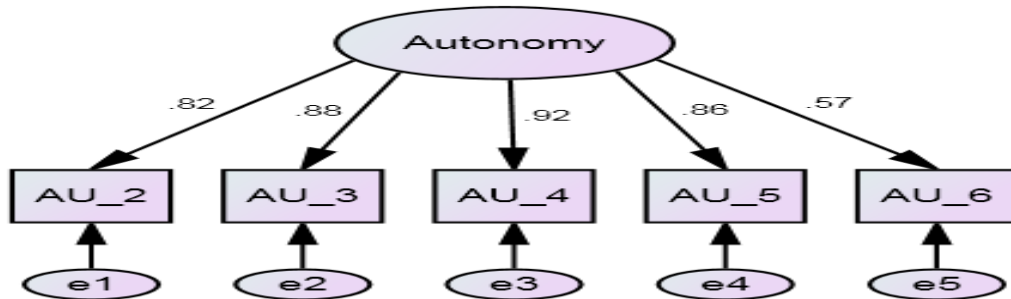


Figure 4.9 Revised CFA Model for Autonomy

Table 4.13 Psychometric Properties of Autonomy Scale

Item Code	Std. Factor Loadings	Standardized Residual Covariances					AVE	CR
		AU_2	AU_3	AU_4	AU_5	AU_6		
AU_2	0.82	0.00					.671	.909
AU_3	0.88	0.33	0.00					
AU_4	0.92	-0.15	-0.06	0.00				
AU_5	0.86	0.06	-0.23	0.14	0.00			
AU_6	0.57	-0.89	0.33	0.20	-0.07	0.00		

The revised CFA model reveals Normed Chi-square of 2.287 with a p-value = 0.043; GFI = 0.990; AGFI = 0.971; NFI = 0.993; CFI = 0.996; RMR = 0.035; RMSEA = 0.053 and standardized residuals of less than 2.5, which were all significant and reveals a good model fit. High standardized factor loadings (Table 4.13) support the linking of empirical indicators with the autonomy construct and prove the uni-dimensionality of the autonomy construct. AVE score of .671 proves the convergence of the scale items. CR of .909 provides sufficient evidence in the support of the internal consistency of the scale items.

#### 4.2.8: Dimensionality of Entrepreneurial Orientation

After the measurement and validation of various sub-dimensions of entrepreneurial orientation the dimensionality of entrepreneurial orientation construct has been assessed. There is a double opinion regarding the dimensionality of entrepreneurial orientation construct. One set of studies considers entrepreneurial orientation as a uni-dimensional

construct, whereas another set of studies have affirmed the multi-dimensionality of the construct of entrepreneurial orientation. The supporters of the uni-dimensional view of entrepreneurial orientation (e.g. Miller, 1983; Covin and Slevin, 1989; Naman and Slevin, 1993; Krauss *et al.*, 2005; Wiklund and Shepherd, 2005; Morris *et al.*, 2007; Chadwick *et al.*, 2008; Moreno and Casillas, 2008; Wang, 2008; Rauch *et al.*, 2009; Ullah *et al.*, 2011; Zhao *et al.*, 2011) have considered the high degree of positive correlation between the different dimensions of entrepreneurial orientation as a basis for uni-dimensionality. According to them, the focal dimensions of entrepreneurial orientation are highly inter-correlated. Therefore, it is better to combine them into a single construct. On the other side, proponents of multi-dimensional view of entrepreneurial orientation (e.g. Lumpkin and Dess, 1996; Stetz *et al.*, 2000; Kreiser *et al.*, 2002; Richard *et al.*, 2004; Dess and Lumpkin, 2005; Hughes and Morgan, 2007; Naldi *et al.*, 2007; Awang *et al.*, 2009; Lee and Lim, 2009; Kreiser and Davis 2010; Kraus *et al.*, 2011; Gupta and Pandit, 2012; Taylor, 2013) claim that the different dimensions of entrepreneurial orientation have a unique contribution toward firm's success. The aggregated measures of entrepreneurial orientation may conceal the true nature of the relationship that exists between various sub-dimensions of entrepreneurial orientation and firm performance. Therefore, deconstruction of entrepreneurial orientation construct becomes necessary.

Both of the arguments have sound theoretical basis. So in the context of present study, two separate CFA models i.e. entrepreneurial orientation as uni-dimensional construct and entrepreneurial orientation as a multi-dimensional construct have been considered for empirical testing.

#### **4.2.8(a): Measurement and Validation of the Uni-dimensional view of Entrepreneurial Orientation**

The fundamental theoretical basis of the uni-dimensional view of entrepreneurial orientation lies in the fact that the different dimensions of entrepreneurial orientation are significantly and positively related with each other and they can be better explained by one latent construct. So in order to examine the extent of correlation among the different



dimensions of entrepreneurial orientation, correlation analysis has been employed through SPSS 19.0. The summated scores of the various dimensions of entrepreneurial orientation (validated above) have been considered for the assessment of inter-construct correlation.

**Table 4.14 Correlation Coefficients  
between different Dimensions of Entrepreneurial Orientation**

	<b>Autonomy</b>	<b>Competitive Aggressiveness</b>	<b>Innovativeness</b>	<b>Proactiveness</b>	<b>Risk Taking</b>
<b>Autonomy</b>	1	.451**	.514**	.453**	.517**
<b>Competitive Aggressiveness</b>	.451**	1	.747**	.719**	.427**
<b>Innovativeness</b>	.514**	.747**	1	.756**	.491**
<b>Proactiveness</b>	.453**	.719**	.756**	1	.444**
<b>Risk Taking</b>	.517**	.427**	.491**	.444**	1

\*\* Significant at 1% level.

Table 4.14 reveals positive and significant correlation coefficients among various dimensions of entrepreneurial orientation and supports the uni-dimensional conceptualization of entrepreneurial orientation construct.

In light of the above evidences, entrepreneurial orientation can be considered as a second order factor having innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy as its integral parts. Figure 4.10 reveals that, in the second order CFA model of entrepreneurial orientation, all the twenty eight items, retained in measurement process, firstly load on five independent constructs in the first-order model - seven items load on innovativeness, five items load on risk taking, six items load on proactiveness, five items load on competitive aggressiveness and the remaining four items load on autonomy. Then these five dimensions load on the one single dimension i.e. entrepreneurial orientation in the second-order CFA model. The uni-dimensional model of entrepreneurial orientation has been examined for its fit and psychometric properties.

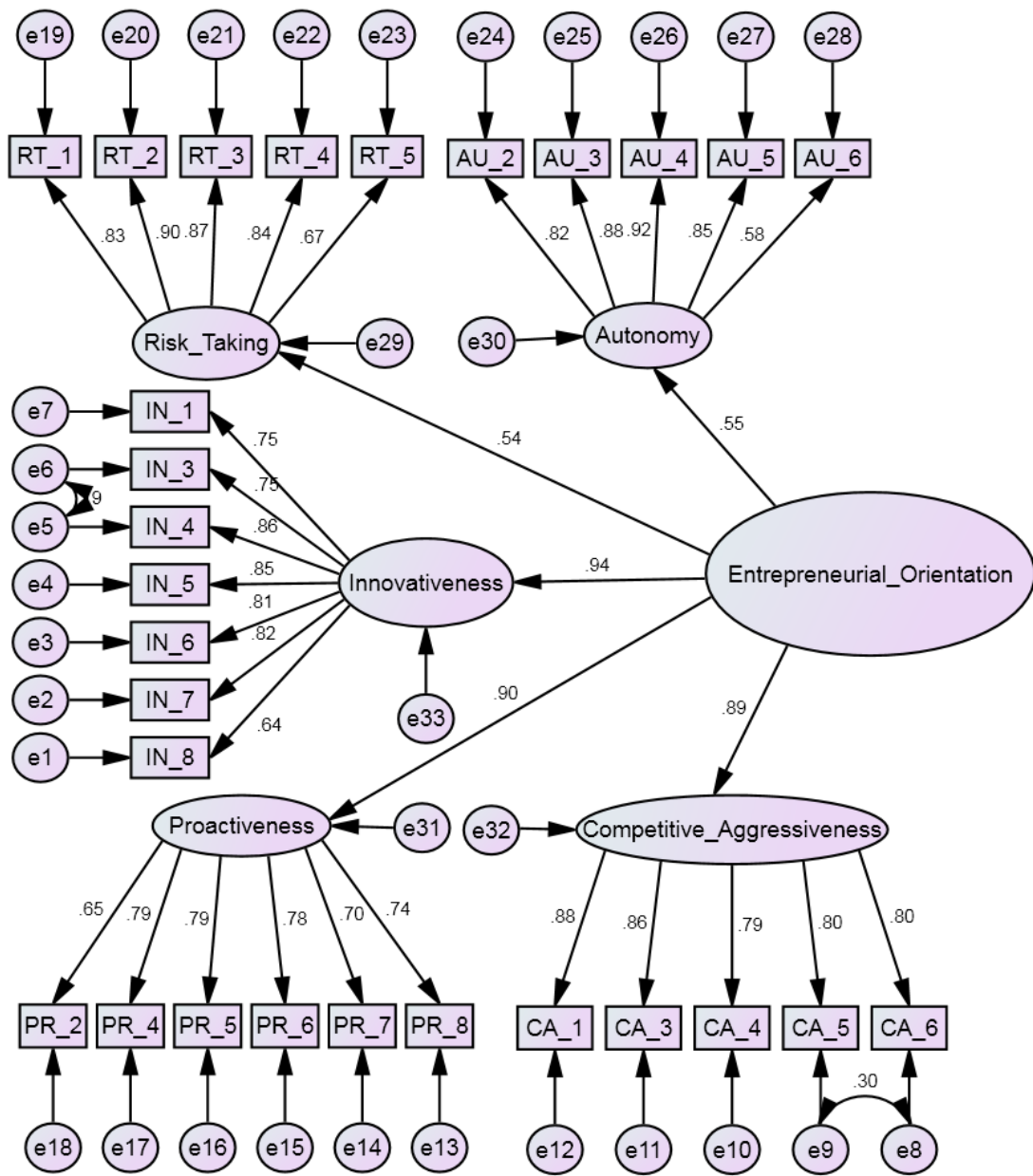


Figure 4.10 CFA Model for Uni-dimensional view of Entrepreneurial Orientation

**Table 4.15 Standardized Residuals Covariances for the Uni-dimensional view of Entrepreneurial Orientation**

Item Code	Standardized Residual Covariances																												
	PR_2	PR_4	PR_5	PR_6	PR_7	PR_8	RT_5	RT_4	RT_3	RT_2	RT_1	AU_6	AU_5	AU_4	AU_3	AU_2	CA_1	CA_3	CA_4	CA_5	CA_6	IN_1	IN_3	IN_4	IN_5	IN_6	IN_7	IN_8	
PR_2	0.00																												
PR_4	-0.67	0.00																											
PR_5	-0.23	0.35	0.00																										
PR_6	0.15	-0.60	0.10	0.00																									
PR_7	-0.49	-0.07	0.39	-0.06	0.00																								
PR_8	0.23	-0.25	0.49	-0.27	0.88	0.00																							
RT_5	2.86	3.57	2.80	2.15	3.11	2.01	0.00																						
RT_4	-0.98	-0.50	-1.57	-2.46	-1.40	-1.78	-0.02	0.00																					
RT_3	0.11	1.02	0.28	-0.27	-0.16	0.20	-0.24	0.05	0.00																				
RT_2	-0.49	0.23	-0.80	-1.92	-0.35	-0.78	-0.29	0.44	-0.20	0.00																			
RT_1	0.42	0.68	-0.33	-0.83	0.13	0.18	-0.15	-0.50	0.36	0.03	0.00																		
AU_6	3.20	3.92	2.95	3.97	2.92	5.39	5.83	2.14	2.88	3.21	3.14	0.00																	
AU_5	0.30	-1.11	-2.80	-1.56	-2.02	-0.61	3.96	2.58	2.76	2.77	2.50	-0.24	0.00																
AU_4	0.59	-0.21	-2.05	-1.16	-1.48	-0.29	5.67	4.68	3.97	4.99	3.69	-0.02	0.23	0.00															
AU_3	1.32	-0.40	-1.57	-0.23	-0.76	-0.06	5.10	3.29	3.74	3.95	3.83	0.09	-0.19	-0.05	0.00														
AU_2	1.53	-0.07	-1.66	-0.05	-1.03	-0.41	5.49	3.18	4.56	2.80	3.34	-1.10	0.11	-0.14	0.30	0.00													
CA_1	0.76	0.98	0.26	0.54	0.30	0.51	3.07	-1.07	-0.22	-0.52	0.01	3.76	-1.35	-0.27	0.04	0.19	0.00												
CA_3	0.51	-0.09	-0.34	-0.04	-0.75	-0.12	3.02	-2.09	-1.03	-1.49	-0.10	4.00	-0.82	0.02	-0.11	-0.10	0.00	0.00											
CA_4	0.05	0.45	0.24	0.91	0.51	0.11	2.60	-2.22	-1.04	-1.74	-1.22	3.77	-1.78	-1.35	-0.28	-1.29	-0.22	-0.16	0.00										
CA_5	0.22	0.27	-0.96	-0.41	0.18	-0.60	4.14	-0.90	-0.02	0.18	0.29	3.64	-1.16	-0.32	-0.24	-0.10	-0.12	0.30	0.46	0.00									
CA_6	0.36	0.01	-0.25	-0.04	0.68	-0.66	3.08	-1.79	-0.73	-0.52	0.17	3.59	-1.12	-1.34	-0.38	-0.67	-0.33	0.03	0.74	0.00	0.00								
IN_1	0.88	-0.33	-1.13	0.27	-1.72	-1.89	3.46	1.03	1.40	0.84	1.77	2.26	-1.05	0.02	-0.24	-0.06	-0.38	-0.49	-1.72	-0.83	-1.03	0.00							
IN_3	1.21	-0.47	-0.56	0.23	0.04	-0.20	2.92	-1.01	0.89	0.34	1.59	2.63	-0.54	-0.14	0.36	-0.12	0.33	1.08	-0.36	0.29	0.96	0.66	0.00						
IN_4	0.34	0.57	-0.75	0.66	-0.38	-0.80	2.99	-1.48	0.02	-0.77	0.28	3.74	-1.16	-0.71	-0.34	-0.26	0.37	0.40	-0.30	-0.71	0.08	0.42	0.00	0.00					
IN_5	0.63	2.37	0.29	0.49	-0.18	-0.61	2.99	-1.18	-0.14	-0.67	-0.36	4.11	-1.32	-0.36	-0.14	0.36	1.17	0.07	-0.22	-0.79	-0.32	0.16	-0.42	-0.11	0.00				
IN_6	0.02	-0.27	-0.94	2.21	-0.60	-0.18	2.20	-2.05	-0.71	-1.48	0.04	3.66	-0.07	-0.49	-0.26	-0.07	-0.12	-0.41	0.19	-1.03	0.07	0.48	-0.46	-0.17	-0.21	0.00			
IN_7	0.70	0.11	-0.93	0.79	-0.37	-0.04	3.92	-2.04	0.24	-0.88	0.37	4.24	-0.65	-0.17	0.25	0.58	0.53	0.13	0.26	-0.09	0.94	-0.47	0.15	0.21	-0.41	0.40	0.00		
IN_8	-0.14	-0.02	-0.80	-0.30	-1.65	-0.54	3.20	-0.43	-0.48	-0.30	-0.73	5.49	0.64	2.04	1.42	1.20	-0.29	0.05	-0.58	-0.85	-0.89	-0.23	-0.10	-0.30	0.62	0.58	-0.31	0.00	

The result of uni-dimensional model of entrepreneurial orientation reveals a Chi-square of 812.9, with 343 degrees of freedom i.e. Normed Chi-square of 2.37; GFI = 0.885, AGFI = 0.864; NFI = .918; CFI = 0.951; RMR = 0.161; and RMSEA = 0.055. Standardized residuals reveal that three scale items i.e. 'Risk-takers are recognized and rewarded in our organization, whether they are successful or not' coded as 'RT\_5', 'In general, the top managers of my firm... Expect individuals and/or teams to use existing strategies and standard operating procedures as a basis for decision making Vs. Encourage individuals and/or teams to think 'outside the box' when making decisions' referred as 'AU\_4' and 'Our firm encourages employees to make decisions on their own' coded as 'AU\_6' have high standardized residuals with a number of other items (Table 4.15). Modification indices reveal that two of the items i.e. 'The top managers of my business unit are willing to try new ways of doing things and seek unusual, novel solutions' referred as 'IN\_5' and 'In general, my firm actively collects and evaluates information on technological developments' coded as 'PR\_6' have high modification indices with number of items of other constructs. In addition, modification indices also suggest a covariance sign between the error terms of the latent construct of risk taking and autonomy.

As a result of the above discussion items such as 'AU\_4', 'AU\_6' and 'RT\_5' have been dropped from the further analysis due to the high standardized residuals, whereas scale items such as 'IN\_5' and 'PR\_6' have been dropped because of high modification indices. A covariance sign has also been incorporated between the error terms of the latent constructs of autonomy and risk taking. The resulting uni-dimensional model of entrepreneurial orientation (Figure 4.11) has been examined for its fit and psychometric properties.

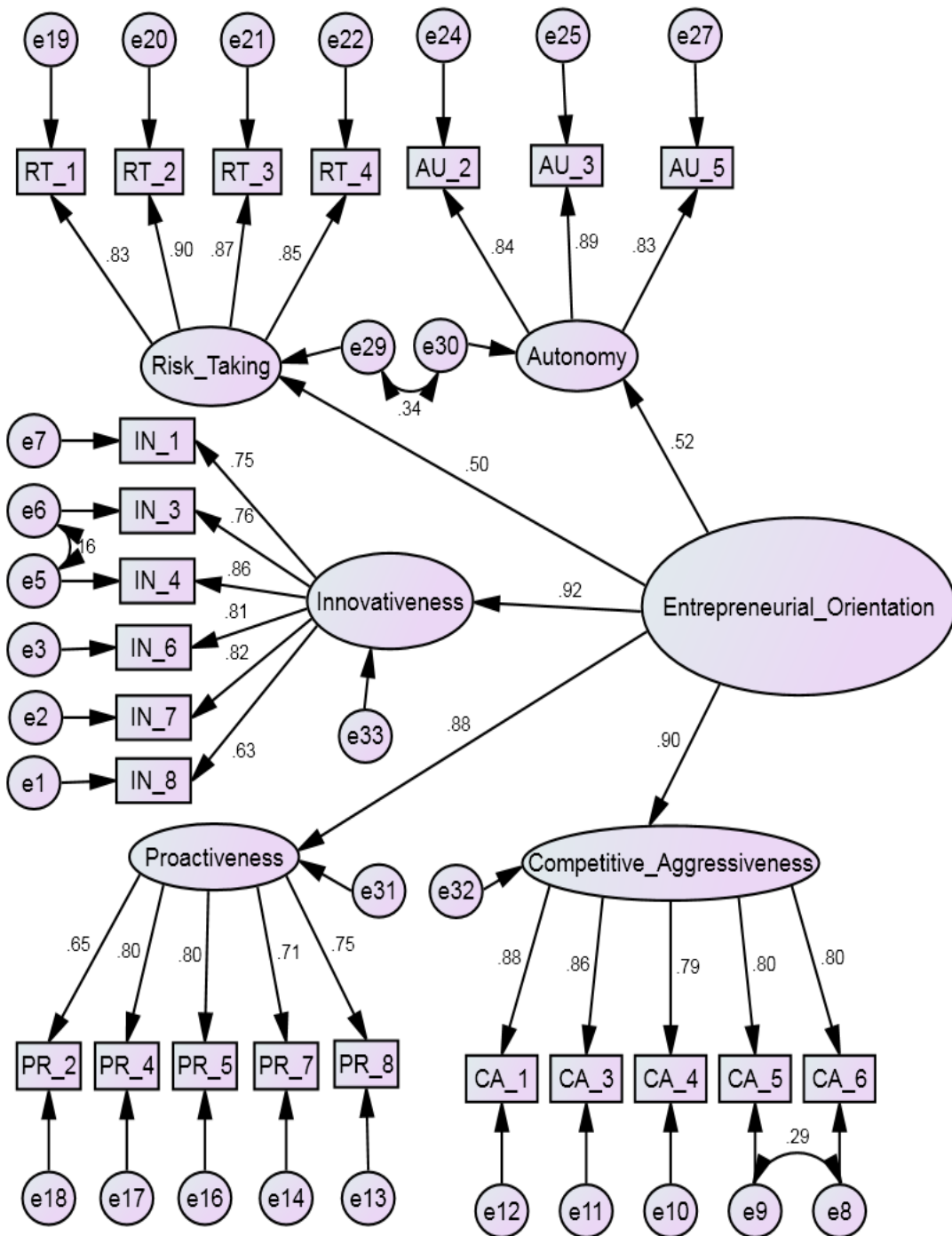


Figure 4.11 Revised CFA Model for the Uni-dimensional view of Entrepreneurial Orientation

**Table 4.16 Standardized Factor Loadings and Residuals for the Uni-dimensional view of Entrepreneurial Orientation**

Item Code	Std. Factor Loadings	Standardized Residual Covariances																							
		PR_2	PR_4	PR_5	PR_7	PR_8	RT_4	RT_3	RT_2	RT_1	AU_5	AU_3	AU_2	CA_1	CA_3	CA_4	CA_5	CA_6	IN_1	IN_3	IN_4	IN_6	IN_7	IN_8	
PR_2	0.65	0.00																							
PR_4	0.80	-0.66	0.00																						
PR_5	0.80	-0.21	0.27	0.00																					
PR_7	0.71	-0.52	-0.20	0.28	0.00																				
PR_8	0.75	0.15	-0.45	0.31	0.66	0.00																			
RT_4	0.85	-0.51	0.01	-1.06	-0.97	-1.36	0.00																		
RT_3	0.87	0.59	1.55	0.81	0.28	0.63	0.02	0.00																	
RT_2	0.90	-0.01	0.76	-0.27	0.10	-0.34	0.39	-0.27	0.00																
RT_1	0.83	0.89	1.19	0.18	0.56	0.60	-0.51	0.33	-0.01	0.00															
AU_5	0.83	0.87	-0.49	-2.19	-1.50	-0.08	-0.45	-0.36	-0.45	-0.46	0.00														
AU_3	0.89	1.74	0.03	-1.14	-0.40	0.29	-0.12	0.22	0.31	0.47	0.02	0.00													
AU_2	0.84	1.85	0.24	-1.34	-0.77	-0.17	-0.12	1.12	-0.68	0.11	0.13	-0.10	0.00												
CA_1	0.88	0.88	1.01	0.31	0.30	0.45	-0.69	0.16	-0.13	0.39	-0.86	0.32	0.35	0.00											
CA_3	0.86	0.59	-0.09	-0.32	-0.78	-0.21	-1.75	-0.69	-1.14	0.24	-0.36	0.14	0.04	0.03	0.00										
CA_4	0.79	0.12	0.45	0.26	0.48	0.03	-1.91	-0.72	-1.43	-0.91	-1.36	-0.05	-1.16	-0.19	-0.17	0.00									
CA_5	0.80	0.29	0.25	-0.96	0.13	-0.70	-0.59	0.30	0.50	0.60	-0.74	-0.01	0.02	-0.11	0.26	0.43	0.00								
CA_6	0.80	0.41	-0.02	-0.26	0.62	-0.76	-1.49	-0.43	-0.21	0.47	-0.71	-0.16	-0.56	-0.34	-0.02	0.69	0.00	0.00							
IN_1	0.75	1.28	0.04	-0.75	-1.43	-1.63	1.61	1.99	1.43	2.35	-0.37	0.25	0.32	-0.24	-0.39	-1.63	-0.75	-0.97	0.00						
IN_3	0.76	1.46	-0.29	-0.36	0.18	-0.11	-0.57	1.35	0.80	2.05	0.01	0.73	0.14	0.27	0.99	-0.45	0.19	0.84	0.53	0.00					
IN_4	0.86	0.68	0.88	-0.44	-0.14	-0.61	-0.92	0.60	-0.20	0.84	-0.47	0.14	0.09	0.40	0.40	-0.30	-0.74	0.04	0.37	0.00	0.00				
IN_6	0.81	0.40	0.08	-0.57	-0.31	0.07	-1.48	-0.13	-0.89	0.61	0.63	0.24	0.31	-0.02	-0.34	0.25	-0.99	0.10	0.50	-0.64	-0.27	0.00			
IN_7	0.82	1.01	0.36	-0.66	-0.17	0.11	-1.53	0.76	-0.35	0.89	-0.02	0.68	0.90	0.52	0.09	0.22	-0.15	0.87	-0.55	-0.14	-0.01	0.27	0.00		
IN_8	0.63	0.29	0.42	-0.36	-1.30	-0.20	0.12	0.08	0.28	-0.18	1.30	1.94	1.60	-0.05	0.25	-0.39	-0.68	-0.73	-0.05	-0.10	-0.21	0.73	-0.25	0.00	

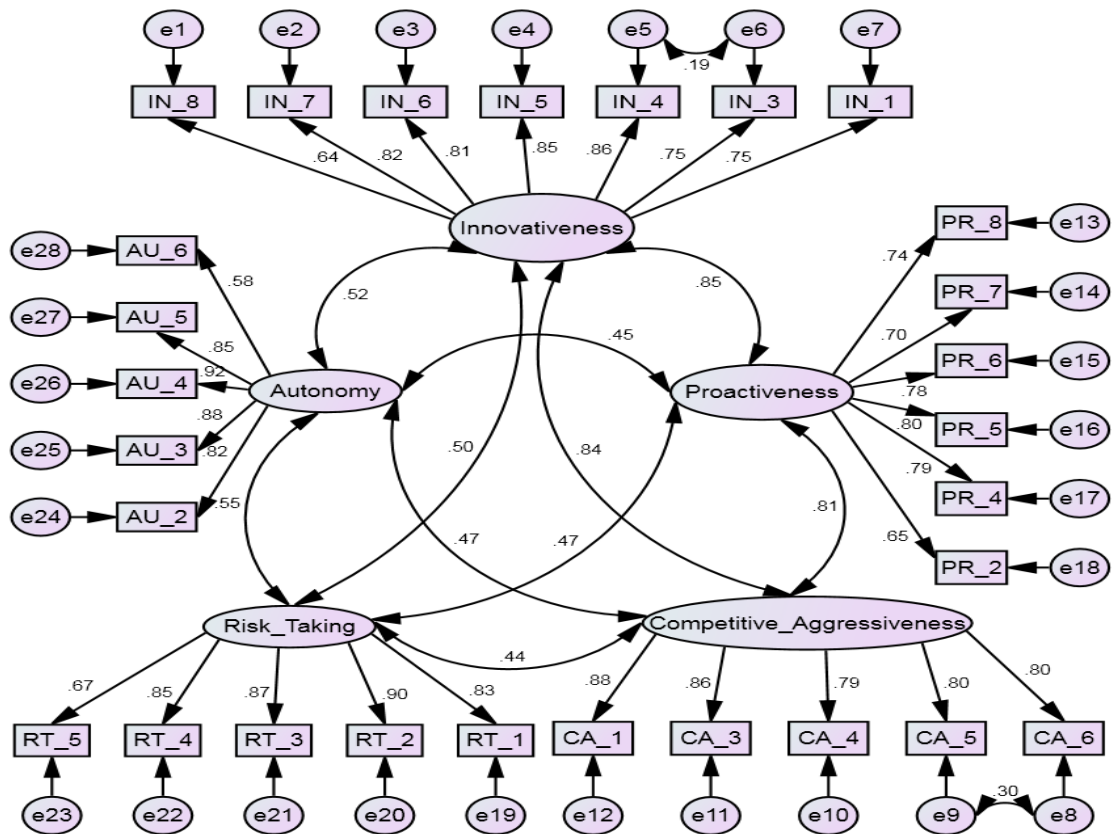
**Table 4.17 Psychometric Properties of  
Uni-dimensional view of Entrepreneurial Orientation**

Construct	Parameter	Index	Dimension	Std. Factor Loadings	AVE	CR
Entrepreneurial Orientation (Uni-dimensional View)	Chi-square	348.87	Innovativeness	.923	.592	.872
	Degree of freedom	222				
	Normed Chi-square (Chi-square/ df)	1.57	Proactiveness	.884		
	GFI	.937	Risk Taking	.505		
	AGFI	.922				
	NFI	.954	Competitive Aggressiveness	.898		
	CFI	.983				
	RMR	.065	Autonomy	.519		
	REMSA	.035				

The result of revised uni-dimensional model of entrepreneurial orientation reveals a good fit. All the indices of GOF i.e. GFI, AGFI, NFI and CFI were above the cut off of .90, badness of fit indices i.e. RMR and REMSA were less than the threshold of .08 (Table 4.17). The Normed Chi-square has an index of 1.57. Standardized residuals (Table 4.16) fall below the cut off 2.5. The standardized factor loadings (Table 4.16 and Table 4.17) were above the threshold of .50. An AVE score of .592 affirms the claim that the different dimensions of entrepreneurial orientation construct converge on the common meaning of the underlying theoretical concept of entrepreneurial orientation. CR of .872 supports the high positive correlation between the different dimensions of entrepreneurial orientation and proves their internal consistency.

**4.2.8(b): Measurement and Validation of the Multi-dimensional view of Entrepreneurial Orientation**

To estimate the degree of effectiveness with which manifest variables represent the latent constructs (i.e. innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy) and how latent constructs relate with each other, a measurement model for different dimensions of entrepreneurial orientation has been conceptualized and tested for its fit (Figure 4.12).



**Figure 4.12 CFA Model for the Multi-dimensional view of Entrepreneurial Orientation**

The result of CFA model reveal a Normed Chi-square of 2.24; GFI = 0.893; AGFI = 0.871; NFI = 0.924; CFI = 0.956; RMR = 0.109; and RMSEA = 0.052. Standardized residuals for the scale items i.e. ‘Risk-takers are recognized and rewarded in our organization, whether they are successful or not’ coded as ‘RT\_5’, and ‘Our firm encourage employees to make decisions on their own’ coded as ‘AU\_6’ exceed the cut off of 2.5 (Table 4.18). Three scale items i.e. ‘In general, the top managers of my firm... Expect individuals and/or teams to use existing strategies and standard operating procedures as a basis for decision making Vs. Encourage individuals and/or teams to think ‘Outside the Box’ when making decisions’ referred as ‘AU\_4’, ‘The top managers of my business unit are willing to try new ways of doing things and seek unusual, novel solutions’ referred as ‘IN\_5’ and ‘In general, my firm actively collects and evaluates information on technological developments’ coded as ‘PR\_6’, have high modification indices.



**Table 4.18 Standardized Residuals Covariances for the Multi-dimensional view of Entrepreneurial Orientation**

Item Code	Standardized Residual Covariances																												
	PR_2	PR_4	PR_5	PR_6	PR_7	PR_8	RT_5	RT_4	RT_3	RT_2	RT_1	AU_6	AU_5	AU_4	AU_3	AU_2	CA_1	CA_3	CA_4	CA_5	CA_6	IN_1	IN_3	IN_4	IN_5	IN_6	IN_7	IN_8	
PR_2	0.00																												
PR_4	-0.64	0.00																											
PR_5	-0.22	0.33	0.00																										
PR_6	0.17	-0.60	0.07	0.00																									
PR_7	-0.48	-0.08	0.36	-0.07	0.00																								
PR_8	0.27	-0.23	0.48	-0.26	0.88	0.00																							
RT_5	3.02	3.76	2.98	2.33	3.27	2.20	0.00																						
RT_4	-0.77	-0.27	-1.35	-2.24	-1.20	-1.55	-0.06	0.00																					
RT_3	0.34	1.28	0.53	-0.02	0.06	0.45	-0.26	0.05	0.00																				
RT_2	-0.27	0.49	-0.57	-1.68	-0.13	-0.53	-0.32	0.42	-0.20	0.00																			
RT_1	0.65	0.93	-0.09	-0.59	0.34	0.43	-0.16	-0.49	0.39	0.05	0.00																		
AU_6	3.57	4.37	3.38	4.40	3.30	5.82	3.72	-0.42	0.26	0.49	0.63	0.00																	
AU_5	0.81	-0.52	-2.25	-0.99	-1.51	-0.05	0.92	-1.10	-1.01	-1.11	-1.09	-0.17	0.00																
AU_4	1.11	0.39	-1.48	-0.58	-0.96	0.28	2.31	0.59	-0.16	0.67	-0.25	-0.01	0.22	0.00															
AU_3	1.85	0.21	-0.99	0.37	-0.22	0.53	1.91	-0.56	-0.20	-0.13	0.05	0.14	-0.14	-0.09	0.00														
AU_2	2.03	0.50	-1.12	0.52	-0.53	0.13	2.49	-0.43	0.81	-0.98	-0.18	-1.05	0.15	-0.17	0.33	0.00													
CA_1	0.64	0.80	0.06	0.36	0.13	0.36	3.50	-0.55	0.33	0.04	0.55	4.02	-1.03	0.04	0.37	0.50	0.00												
CA_3	0.39	-0.25	-0.52	-0.21	-0.90	-0.26	3.44	-1.59	-0.50	-0.95	0.42	4.25	-0.50	0.32	0.22	0.21	0.00	0.00											
CA_4	-0.08	0.28	0.05	0.73	0.34	-0.04	2.98	-1.77	-0.56	-1.26	-0.76	3.99	-1.50	-1.09	0.01	-1.02	-0.24	-0.17	0.00										
CA_5	0.13	0.13	-1.12	-0.55	0.05	-0.72	4.55	-0.42	0.50	0.70	0.79	3.88	-0.85	-0.02	0.08	0.20	-0.10	0.32	0.46	0.00									
CA_6	0.25	-0.14	-0.42	-0.20	0.53	-0.78	3.47	-1.32	-0.23	-0.01	0.66	3.82	-0.82	-1.06	-0.07	-0.39	-0.33	0.03	0.73	0.00	0.00								
IN_1	0.91	-0.33	-1.15	0.26	-1.73	-1.87	3.52	1.10	1.49	0.92	1.87	2.27	-1.04	-0.02	-0.24	-0.06	-0.38	-0.48	-1.73	-0.81	-1.03	0.00							
IN_3	1.23	-0.48	-0.59	0.22	0.02	-0.19	2.97	-0.94	0.97	0.42	1.68	2.65	-0.54	-0.17	0.36	-0.12	0.32	1.09	-0.38	0.31	0.96	0.67	0.00						
IN_4	0.36	0.57	-0.78	0.65	-0.39	-0.79	3.05	-1.40	0.12	-0.68	0.38	3.76	-1.15	-0.75	-0.34	-0.27	0.36	0.40	-0.32	-0.69	0.08	0.43	0.00	0.00					
IN_5	0.65	2.37	0.26	0.47	-0.20	-0.60	3.05	-1.11	-0.05	-0.59	-0.26	4.13	-1.31	-0.40	-0.14	0.35	1.16	0.06	-0.24	-0.78	-0.32	0.16	-0.42	-0.11	0.00				
IN_6	0.03	-0.28	-0.97	2.19	-0.62	-0.17	2.25	-1.98	-0.63	-1.40	0.13	3.67	-0.07	-0.54	-0.27	-0.08	-0.13	-0.41	0.17	-1.02	0.07	0.48	-0.46	-0.17	-0.21	0.00			
IN_7	0.72	0.10	-0.96	0.77	-0.39	-0.04	3.97	-1.97	0.33	-0.80	0.47	4.25	-0.65	-0.21	0.24	0.58	0.52	0.12	0.24	-0.08	0.94	-0.46	0.16	0.21	-0.41	0.40	0.00		
IN_8	-0.13	-0.02	-0.83	-0.32	-1.66	-0.53	3.24	-0.38	-0.41	-0.24	-0.65	5.50	0.64	2.00	1.42	1.19	-0.30	0.04	-0.60	-0.84	-0.89	-0.22	-0.10	-0.30	0.62	0.57	-0.31	0.00	

Based on the above observations, items such as 'AU\_6' and 'RT\_5' have been dropped from the further analysis due to the high standardized residuals, where as scale items such as 'IN\_5', 'PR\_6' and 'AU\_4' have been dropped because of high modification indices. The resulting measurement model (Figure 4.13) has been examined for its fit and psychometric properties.

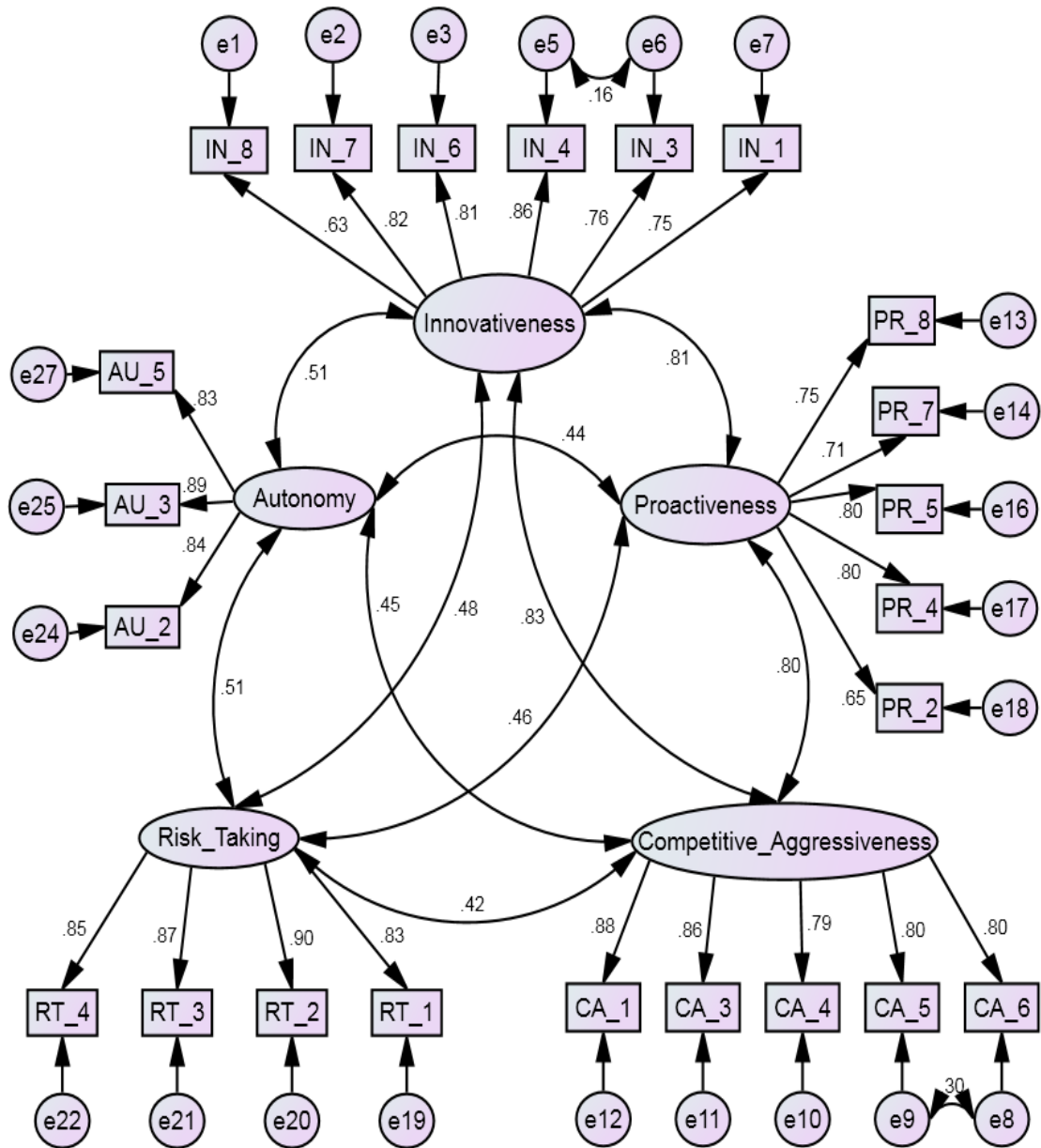


Figure 4.13 Revised CFA Model for the Multi-dimensional view of Entrepreneurial Orientation

**Table 4.19 Psychometric Properties of Multi-dimensional view of Entrepreneurial Orientation**

Item Code	SFL	Standardized Residual Covariances																						AVE	CR			
		PR_2	PR_4	PR_5	PR_7	PR_8	RT_4	RT_3	RT_2	RT_1	AU_5	AU_3	AU_2	CA_1	CA_3	CA_4	CA_5	CA_6	IN_1	IN_3	IN_4	IN_6	IN_7			IN_8		
PR_2	0.65	0.00																							.55	.85		
PR_4	0.80	-0.63	0.00																									
PR_5	0.80	-0.19	0.24	0.00																								
PR_7	0.71	-0.49	-0.22	0.25	0.00																							
PR_8	0.75	0.20	-0.44	0.30	0.66	0.00																						
RT_4	0.85	-0.66	-0.21	-1.28	-1.17	-1.55	0.00																		.74	.92		
RT_3	0.87	0.43	1.31	0.57	0.07	0.43	0.01	0.00																				
RT_2	0.90	-0.17	0.53	-0.51	-0.11	-0.55	0.40	-0.28	0.00																			
RT_1	0.83	0.74	0.97	-0.04	0.36	0.41	-0.51	0.31	-0.01	0.00																		
AU_5	0.83	1.15	-0.18	-1.89	-1.23	0.23	-0.45	-0.37	-0.45	-0.47	0.00														.73	.89		
AU_3	0.89	2.05	0.38	-0.80	-0.09	0.63	-0.11	0.22	0.32	0.47	0.02	0.00																
AU_2	0.84	2.15	0.57	-1.03	-0.49	0.15	-0.11	1.11	-0.68	0.10	0.12	-0.09	0.00															
CA_1	0.8	0.80	0.87	0.15	0.16	0.33	-0.19	0.67	0.40	0.88	-0.66	0.55	0.56	0.00											.68	.91		
CA_3	0.86	0.51	-0.23	-0.47	-0.91	-0.33	-1.27	-0.20	-0.63	0.72	-0.16	0.37	0.25	0.03	0.00													
CA_4	0.79	0.04	0.31	0.10	0.34	-0.09	-1.47	-0.28	-0.96	-0.48	-1.18	0.15	-0.98	-0.21	-0.19	0.00												
CA_5	0.80	0.22	0.14	-1.09	0.02	-0.80	-0.12	0.78	1.00	1.07	-0.55	0.21	0.22	-0.09	0.28	0.43	0.00											
CA_6	0.80	0.34	-0.15	-0.40	0.50	-0.87	-1.03	0.04	0.28	0.93	-0.52	0.05	-0.37	-0.33	-0.02	0.69	0.00	0.00										
IN_1	0.75	1.38	0.12	-0.69	-1.36	-1.54	1.36	1.73	1.18	2.10	-0.73	-0.12	-0.04	-0.24	-0.39	-1.65	-0.74	-0.97	0.00						.60	.90		
IN_3	0.76	1.57	-0.20	-0.29	0.26	-0.01	-0.80	1.09	0.55	1.80	-0.34	0.36	-0.21	0.28	1.00	-0.45	0.21	0.86	0.51	0.00								
IN_4	0.86	0.82	0.99	-0.35	-0.05	-0.49	-1.17	0.32	-0.47	0.58	-0.86	-0.26	-0.30	0.42	0.42	-0.30	-0.70	0.07	0.37	0.00	0.00							
IN_6	0.81	0.52	0.18	-0.49	-0.23	0.18	-1.73	-0.39	-1.15	0.36	0.26	-0.15	-0.07	0.00	-0.33	0.25	-0.96	0.12	0.50	-0.64	-0.25	0.00						
IN_7	0.82	1.13	0.46	-0.58	-0.09	0.22	-1.78	0.49	-0.62	0.63	-0.39	0.29	0.51	0.53	0.09	0.22	-0.13	0.89	-0.56	-0.14	0.00	0.27	0.00					
IN_8	0.63	0.37	0.48	-0.31	-1.24	-0.13	-0.09	-0.14	0.06	-0.39	0.99	1.61	1.29	-0.06	0.24	-0.41	-0.67	-0.73	-0.07	-0.12	-0.22	0.72	-0.27	0.00				

The result of the revised multi-dimensional model for entrepreneurial orientation reveals a Normed Chi-square of 1.57 (342.47/218); GFI = 0.938; AGFI = 0.922; NFI = 0.955; CFI = 0.983; RMR = 0.061; RMSEA = 0.035 and standardized residuals of less than 2.5, which were all significant and support good model fit. High scores of standardized factor loadings, AVE and CR (Table 4.19) acknowledge the convergence of various scale items to their respective constructs. The divergent validity - the extent to which the measure is indeed novel and not simply a reflection of some other variable - of the various dimensions of entrepreneurial orientation has been assessed by comparing the shared variance (squared correlation) between each pair of constructs against the minimum of the AVEs of respective constructs. The lower values of observed shared variance (squared correlation) between each pair of construct against the minimum of the AVEs for respective constructs affirm the divergent validity (Fornell and Larker, 1981; Hair *et al.*, 2008). Table 4.20 reveals that the AVE's for all the constructs were higher than the squared correlation (computed through the summated score of various construct - based upon the revised multi-dimensional CFA model of entrepreneurial orientation) and proves the uniqueness of the different dimensions of entrepreneurial orientation.

**Table 4.20 Assessment of Divergent Validity**

	<b>Autonomy</b>	<b>Competitive Aggressiveness</b>	<b>Innovativeness</b>	<b>Proactiveness</b>	<b>Risk Taking</b>
<b>AVE</b>	.73	.68	.60	.55	.74
<b>Squared Correlation</b>					
<b>Autonomy</b>	1.00	0.16	0.21	0.15	0.21
<b>Competitive Aggressiveness</b>	0.16	1.00	0.54	0.50	0.15
<b>Innovativeness</b>	0.21	0.54	1.00	0.51	0.20
<b>Proactiveness</b>	0.15	0.50	0.51	1.00	0.17
<b>Risk Taking</b>	0.21	0.15	0.20	0.17	1.00

#### **4.2.9: Measurement and Validation of Environmental Uncertainty**

To estimate the degree of effectiveness with which manifest variables of environmental uncertainty construct represents the latent construct, a uni-dimensional CFA model has been conceptualized (Figure 4.14). In the uni-dimensional CFA model all the manifest

variables load on the underlying construct of environmental uncertainty in a uniform way. The measurement model has been examined for model fit.

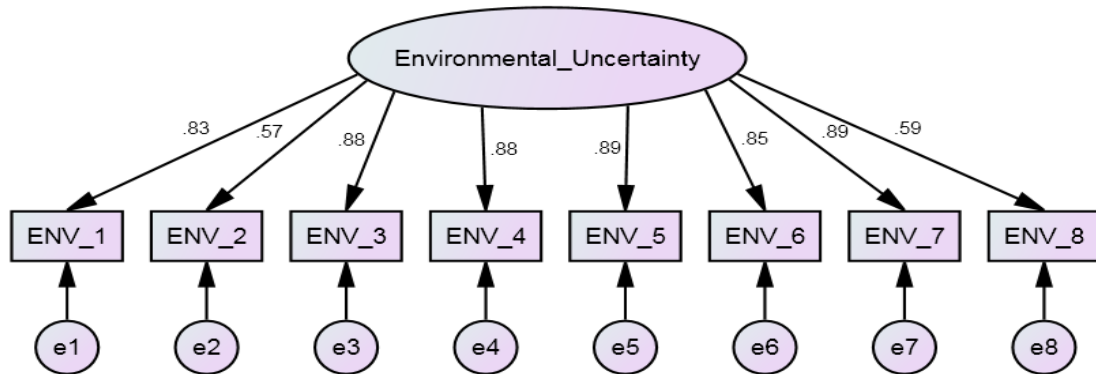


Figure 4.14 CFA Model for Environmental Uncertainty

Table 4.21 Standardized Factor Loadings and Residuals for Environmental Uncertainty Scale

Item Code	Std. Factor Loadings	Standardized Residual Covariances							
		ENV_1	ENV_2	ENV_3	ENV_4	ENV_5	ENV_6	ENV_7	ENV_8
ENV_1	0.83	0.00							
ENV_2	0.57	-0.82	0.00						
ENV_3	0.88	-0.17	0.67	0.00					
ENV_4	0.88	-0.13	0.95	0.70	0.00				
ENV_5	0.89	0.52	-0.13	0.02	-0.22	0.00			
ENV_6	0.85	-0.15	-0.26	-0.30	-0.38	-0.01	0.00		
ENV_7	0.89	-0.08	-0.52	-0.35	-0.10	-0.02	0.57	0.00	
ENV_8	0.59	0.27	-0.85	-0.78	-0.66	-0.41	1.17	0.96	0.00

The model fit indices for the uni-dimensional construct of environmental uncertainty reveals a Normed Chi-square of 4.17 (83.53/20); GFI = 0.951; AGFI = 0.912; NFI = 0.972; CFI = 0.979; RMR = 0.054; and RMSEA = 0.083. All the standardized factor loadings were above the threshold of .50 and all the standardized residuals were below the threshold of 2.5 (Table 4.21). The result reveals a modification index of 21.80 between the scale items ‘ENV\_3’ and ‘ENV\_4’. High score of modification index between ‘ENV\_3’ and ‘ENV\_4’ implies the inter-relatedness of these items and suggest that by estimating this path, a fit can be improved significantly. In response of above, a co-variance sign has been introduced between items ‘ENV\_3’ and ‘ENV\_4’. The revised model (Figure 4.15) has been examined for its fit and psychometric properties.

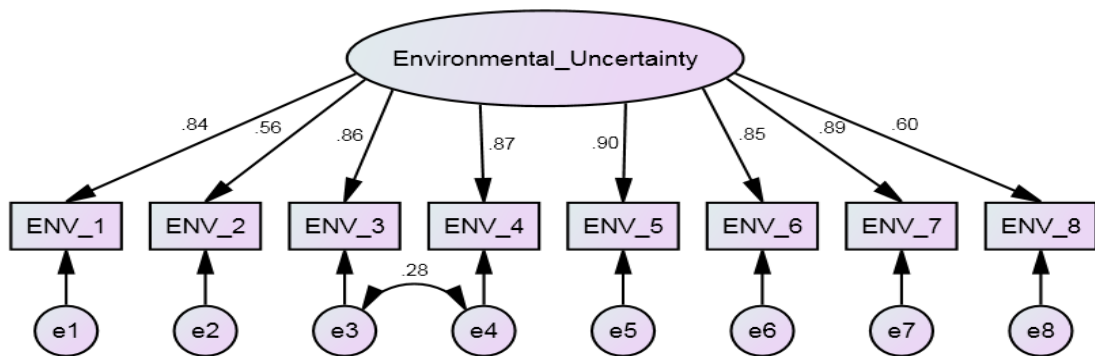


Figure 4.15 Revised CFA Model for Environmental Uncertainty

Table 4.22 Psychometric Properties of Environmental Uncertainty Scale

Item Code	Std. Factor Loadings	Standardized Residual Covariances								AVE	CR
		ENV_1	ENV_2	ENV_3	ENV_4	ENV_5	ENV_6	ENV_7	ENV_8		
ENV_1	0.84	0.00								.65	.94
ENV_2	0.56	-0.76	0.00								
ENV_3	0.86	0.03	0.96	0.00							
ENV_4	0.87	0.06	1.24	0.00	0.00						
ENV_5	0.90	0.42	-0.06	0.22	-0.03	0.00					
ENV_6	0.85	-0.28	-0.22	-0.14	-0.23	-0.15	0.00				
ENV_7	0.89	-0.20	-0.47	-0.18	0.06	-0.15	0.41	0.00			
ENV_8	0.60	0.12	-0.86	-0.71	-0.60	-0.57	0.98	0.78	0.00		

The result of the revised model of environmental uncertainty reveals a Normed Chi-square of 3.06 (58.25/19); GFI = 0.967; AGFI = 0.938; NFI = 0.980; CFI = 0.987; RMR = 0.050; RMSEA = 0.067; and standardized residuals of less than 2.5, which were all acceptable and signify a good model fit. Further, high and significant standardized factor loadings (Table 4.22) support the appropriateness of scale items in capturing the true meaning of the underlying construct of environmental uncertainty. An AVE score of .65 supports the convergent validity of the scale and affirms the claim that scores provided by instrument is actually reflecting the true score that exist in the population. CR of .94 supports the internal consistency of the scale items.

#### 4.2.10: Measurement and Validation of Organizational Structure

To estimate the effectiveness of relationship between the operationalization and the scoring of cases, for the construct of organizational structure, a uni-dimensional CFA model has been conceptualized (Figure 4.16) and examined for its fit.

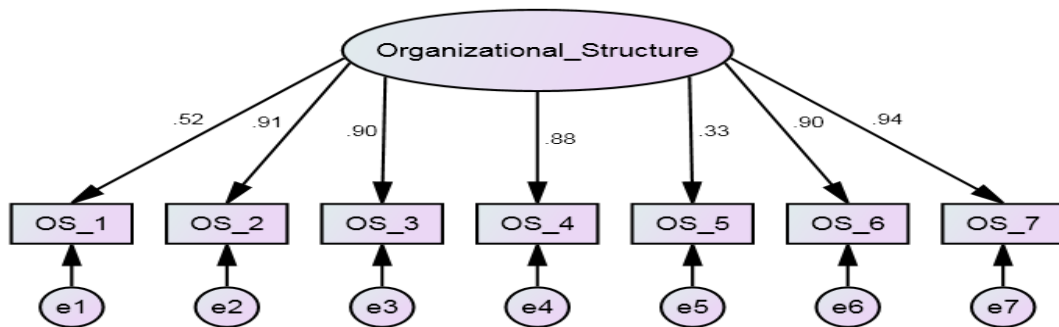


Figure 4.16 CFA Model for Organizational Structure

Table 4.23 Standardized Factor Loadings and Residuals for Organizational Structure Scale

Item Code	Std. Factor Loadings	Standardized Residual Covariances						
		OS_1	OS_2	OS_3	OS_4	OS_5	OS_6	OS_7
OS_1	0.52	0.00						
OS_2	0.91	-0.08	0.00					
OS_3	0.90	0.03	0.05	0.00				
OS_4	0.88	0.81	-0.28	0.55	0.00			
OS_5	0.33	-1.90	0.84	-1.39	-1.05	0.00		
OS_6	0.90	0.21	0.13	-0.34	-0.14	1.05	0.00	
OS_7	0.94	-0.39	0.00	-0.04	-0.08	0.29	0.13	0.00

The result of measurement model reveals a GFI of 0.959; AGFI of 0.918; NFI of 0.977; and CFI of 0.982. All these indices meet the threshold of .90. RMR of .069 and RMSEA of .088 are quite close to the cut off of 0.08. No problem has been identified in standardized residuals (Table 4.23). Normed Chi-square (a ratio of Chi-square to df) of 4.49 exceeds the threshold of 3.0. A modification index of 15.215 has been observed between the error terms of the items 'OS\_3' and 'OS-4'. A high modification index between the error terms of the items 'OS\_3' and 'OS-4' indicate their inter relatedness. Standardized factor loading reveal that one of the indicator of the construct of organizational structure i.e. 'In general, the operating management philosophy in my business unit favours..... A strong emphasis on always getting personnel to follow the formally laid down procedures vs. A strong emphasis on getting things done even if it means disregarding formal procedures' coded as 'OS\_5' falls below the threshold of .50. Low standardized factor loading of 'OS\_5' reflects the inability of the items in measuring the underlying construct. The result of descriptive statistics i.e. positive skewness of

‘OS\_5’ viz-a-viz negative skewness of all other scale item (Table 4.1) and assessment through reliability analysis i.e. ‘item to total correlation’ of .303 for ‘OS\_5’ (Table 4.2) also affirms the above claim.

As a response to above arguments, ‘OS\_5’ has been dropped from the analysis and a covariance sign has been introduced between ‘OS\_3’ and ‘OS\_4’. The resulting model (Figure 4.17) has been assessed for its fit and psychometric properties.

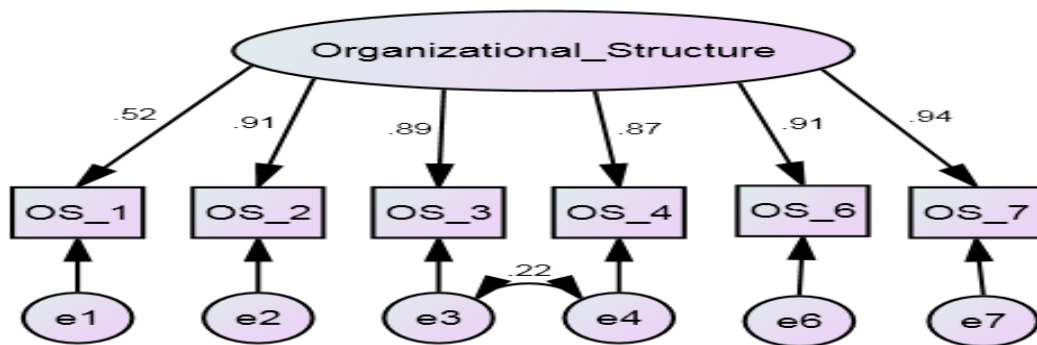


Figure 4.17 Revised CFA Model for Organizational Structure

Table 4.24 Psychometric Properties of Organizational Structure Scale

Item Code	Std. Factor Loadings	Standardized Residual Covariances						AVE	CR
		OS_1	OS_2	OS_3	OS_4	OS_6	OS_7		
OS_1	0.52	0.00						0.73	0.94
OS_2	0.91	-0.08	0.00						
OS_3	0.89	0.12	0.16	0.00					
OS_4	0.87	0.92	-0.14	0.00	0.00				
OS_6	0.91	0.20	0.08	-0.26	-0.03	0.00			
OS_7	0.94	-0.41	-0.06	0.05	0.04	0.06	0.00		

The revised measurement model of organizational structure reveals a Normed Chi-square of 1.97 ((15.76/8) with a p-value = 0.046; GFI = 0.989; AGFI = 0.971; NFI = 0.994; CFI = 0.997; RMR = 0.027; RMSEA = 0.046 and standardized residuals of less than 2.5, which were all significant and reveals a good model fit. All standardized factor loadings (Table 4.24) were significant and above the threshold of .50. These high loadings affirm the representativeness of scale items in measuring latent construct of organizational structure. AVE score of .73 provides sufficient evidence in the favour of convergent validity of the scale items. CR of .94 confirms the internal consistency of scale items.

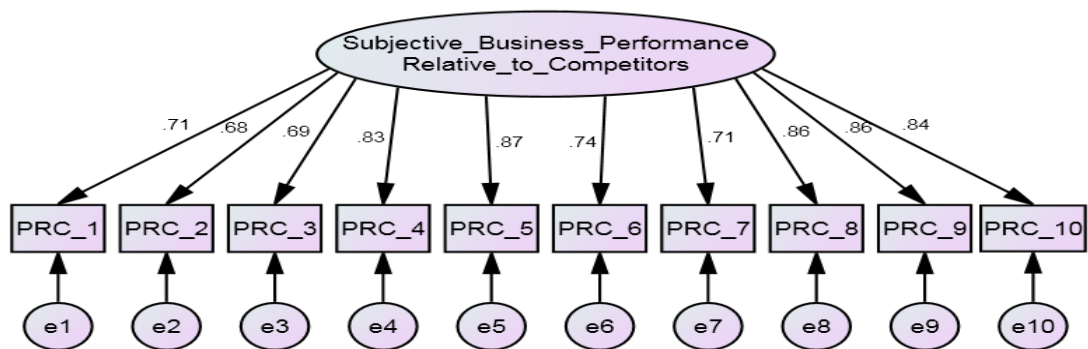


#### 4.2.11: Measurement and Validation of Business Performance

For the measurement and validation of business performance construct, three different models i.e. ‘subjective business performance relative to competitors’, ‘subjective business performance relative to industry’ and ‘archival business performance’ have been conceptualized and tested. Subjective business performance relative to competitors reflects the perception of the key informant about the performance of their business *viz-a-viz* their major competitors. Subjective business performance relative to industry reflects the relative performance of an organization against the industry average. Archival business performance assesses the economic performance of a firm in absolute terms.

##### 4.2.11(a): Measurement and Validation of Subjective Business Performance Relative to Competitors

To assess the linkage between the empirical indicators and latent construct of subjective business performance relative to competitors, a uni-dimensional model has been conceptualized (Figure 4.18). In the uni-dimensional CFA model, all the manifest variables load on the underlying construct in a uniform way. The measurement model has been examined for the degree of fit.



**Figure 4.18 CFA Model for the Subjective Business Performance Relative to Competitors**

The result of a uni-dimensional CFA Model reveals a Normed Chi-square of 32.16 (1125.7/35); GFI = 0.66; AGFI = 0.479; NFI = 0.739; CFI = 0.744; RMR = 0.125 and RMSEA = 0.261. All these indices reveal a bad fit and reject the uni-dimensional view of subjective business performance relative to competitors. A number of items reflect high modification indices. To combine the correlated items into unique factors and to identify the sub dimensions of the underlying construct, Exploratory Factor Analysis has been

employed. Exploratory Factor Analysis with principal component method and promax rotation has been applied. Promax employs an oblique rotation, which allows proposed factors to be correlated with each other. In context of present study, it has been assumed that various dimensions of business performance can be correlated with each other.

The result of Exploratory Factor Analysis reveals a score of .900 for KMO and p-value of .000 for the Bartlett's test of Sphericity (Table 4.25). Both of these statistics were significant. These statistics not only acknowledge the appropriateness of the data set for the conduct of component analysis but also supports the significant degree of correlation between the different indicators of the construct of the subjective business performance relative to competitors. An assessment of Scree Plot and Pattern Matrix (Figure 4.19 and Table 4.25) reveals that the underlying construct of subjective business performance relative to competitors can be bifurcated into two sub constructs. First component contain items such as: service quality, customer satisfaction, product innovation, process innovation, product quality, employee satisfaction, and employee turnover. As all these items relate with the operating efficiency and reflect non financial aspects of business performance, this component has been named as 'Subjective non-financial performance relative to competitors'. Scale items such as: sales growth, market share and return on investment constitute another component of patter matrix. As all these indicators relate with the financial aspects of the performance of an organization, this component has been named as 'Subjective financial performance relative to competitors'. These two factors capture 76.62% of total variance. The factor loadings for all the indicators were significantly high and indicate that these indicators are capable of capturing high amount of the variance for the construct upon which they load. High score of AVE and CR meet the psychometric requirement and support the appropriateness and relevance of the sub constructs of 'Subjective non-financial performance relative to competitors' and 'Subjective financial performance relative to competitors' for the measurement of the subjective business performance relative to competitors.

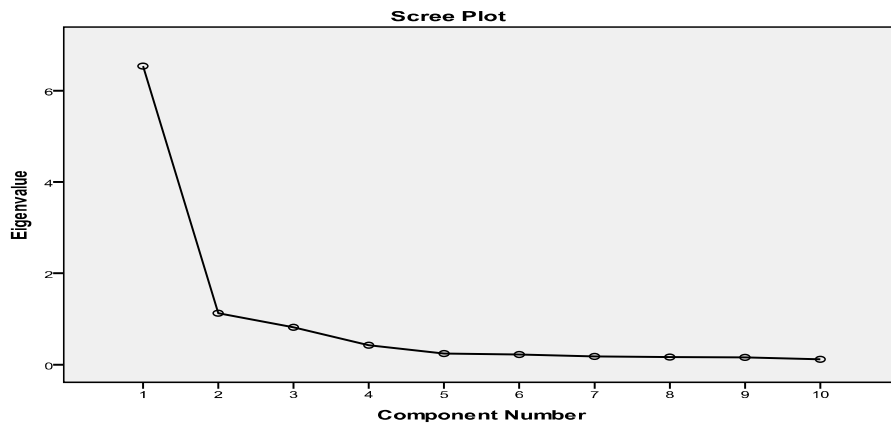
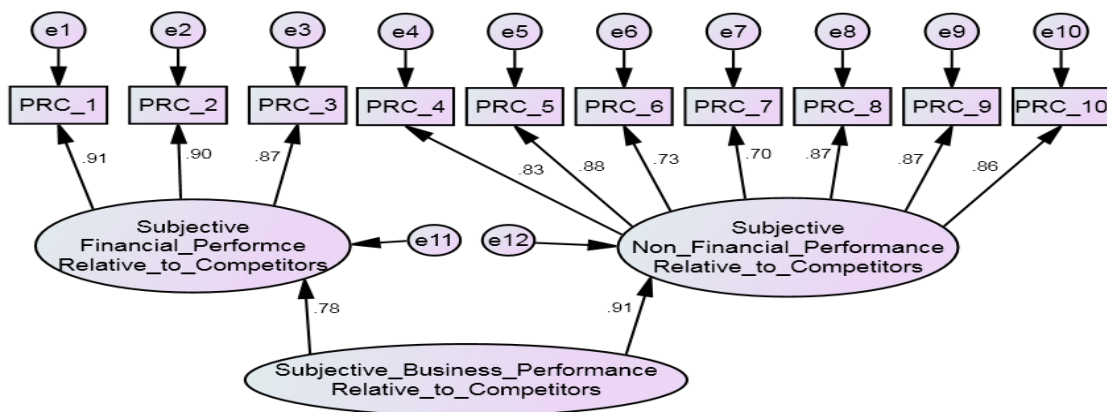


Figure 4.19 Scree Plot diagram for Subjective Business Performance Relative to Competitors

**Table 4.25 Results of Exploratory Factor Analysis for Subjective Business Performance Relative to Competitors**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.900		
Bartlett's Test of Sphericity	Approx. Chi-square		4266.54	
	Df		45	
	Sig.		.000	
<b>Pattern Matrix</b>				
Items	Item Code	Factor Loadings		
		Component 1	Component 2	
Customer Satisfaction	PRC_5	.885		
Product Quality	PRC_10	.881		
Product Innovation	PRC_8	.874		
Process Innovation	PRC_9	.874		
Service Quality	PRC_4	.810		
Employee Turnover	PRC_7	.776		
Employee Satisfaction	PRC_6	.752		
Market Share	PRC_2		.950	
Sales Growth	PRC_1		.903	
Return on Investment	PRC_3		.898	
Average variance extracted (AVE)		.70	.84	
Composite Reliability (CR)		.94	.94	
<b>Eigen Value and Total Explained Variance</b>				
Component	Name of Factor	Eigen Value	% of explained Variance	Cumulative % of explained
Component 1	Subjective Non-Financial Performance relative to competitors	6.536	65.36%	65.36%
Component 2	Subjective Financial Performance relative to competitors	1.126	11.26%	76.62%

To validate the emergent factor structure, these dimensions of subjective business performance relative to competitors were subjected to second order confirmatory factor analysis. In second order CFA model, seven items load on the first order construct of 'subjective non-financial performance relative to competitors' and remaining three items load on the first order construct of 'subjective financial performance relative to competitors', then these two sub-construct load on the latent construct of subjective business performance relative to competitors (Figure 4.20). The purpose was to assess the model fit.



**Figure 4.20 Second order CFA Model for Subjective Business Performance Relative to Competitors**

The result of second order CFA Model reveal a Normed Chi-square of 16.71; GFI = 0.821; AGFI = 0.710; NFI = 0.868; CFI = 0.875; RMR = 0.067 and RMSEA = 0.189, which do not meet the criteria of model fit. The results reveal a modification index of 271.06 between scale items 'employee satisfaction' and 'employees turnover' (i.e. PRC\_6-PRC\_7), 92.05 between 'service quality' and 'customer satisfaction' (i.e. PRC\_4-PRC\_5) and 61.62 between 'product innovation' and 'process innovation' (i.e. PRC\_8-PRC\_9). These high modification indices reveal that these pairs of items are highly correlated and the relationship between these items needs to be estimated. The condition of fixed relationship between these pair of items has been removed and the resulting model (Figure 4.21) has been examined for model fit.

The revised model reveals a Normed Chi-square index of 2.23; GFI = 0.971; AGFI = 0.948; NFI = 0.984; CFI = 0.991; RMR = 0.034; RMSEA = 0.052 and standardized residuals of less than 2.5 (Table 4.26), which were all significant and reveals a good fit. High factors loadings for the sub constructs of subjective non-financial

performance and subjective financial performance support the linking of these dimensions with the construct of subjective business performance relative to competitors (Table 4.26). High score of AVE (i.e. .73) proves the convergent validity of the scale and affirms the claim that the both of the sub-dimensions of the construct of subjective business performance relative to competitors converge on the common meaning of the underlying theoretical concept. CR of .83 meets the threshold of .70 and supports the internal consistency of the scale.

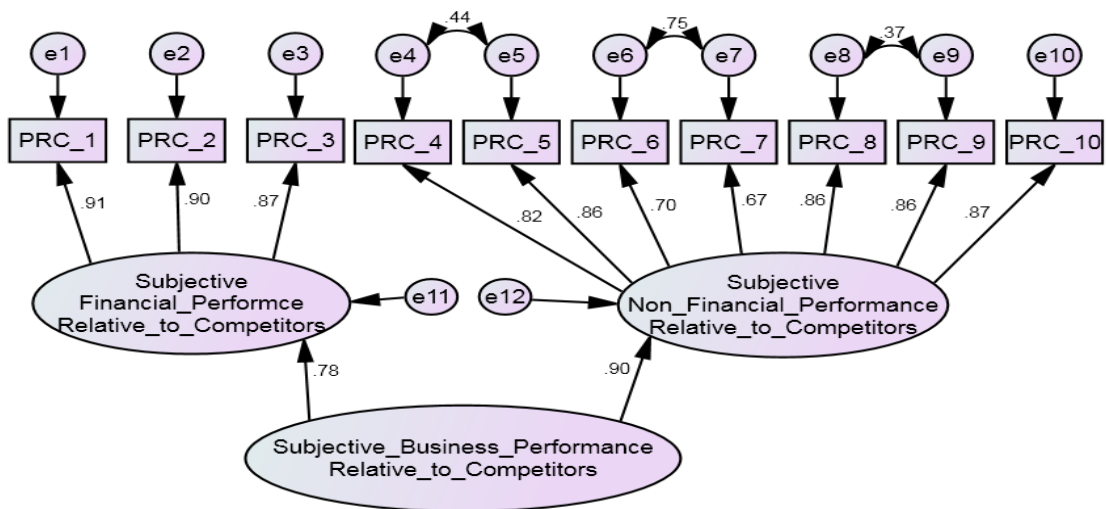


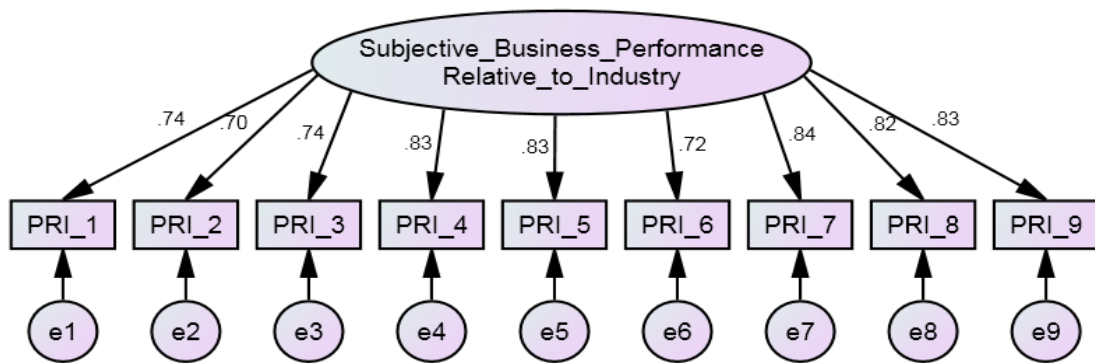
Figure 4.21 Revised CFA Model for the Subjective Business Performance Relative to Competitors

Table 4.26 Psychometric Properties of Subjective Business Performance Relative to Competitors Scale

Construct	Sub-Construct	Item Code	SFL	Standardized Residual Covariances										AVE	CR
				PRC_10	PRC_9	PRC_8	PRC_7	PRC_6	PRC_5	PRC_4	PRC_3	PRC_2	PRC_1		
Subjective Business Performance Relative to competitors	Subjective Non Financial Performance	PRC_10	0.901	0.00										0.71	0.83
		PRC_9		0.13	0.00										
		PRC_8		0.28	0.00	0.00									
		PRC_7		-0.92	0.63	0.46	0.00								
		PRC_6		-1.11	0.31	0.11	0.00	0.00							
		PRC_5		0.31	-0.22	-0.35	-0.07	0.44	0.00						
	PRC_4	0.30	-0.36	-0.31	-0.19	-0.03	0.00	0.00							
	Subjective Financial Performance	PRC_3	0.784	-0.10	0.27	0.29	1.12	1.32	0.24	0.94	0.00				
		PRC_2		-1.14	-0.36	-0.34	0.92	1.31	-0.46	0.16	0.05	0.00			
		PRC_1		-0.57	0.26	0.12	0.91	1.81	-0.01	0.49	-0.12	0.06	0.00		

#### 4.2.11(b): Measurement and Validation of Subjective Business Performance Relative to Industry

To estimate the strength of relationship between manifest variables and latent construct of subjective business performance relative to industry, a uni-dimensional CFA model has been conceptualized and tested for model fit. In the uni-dimensional model of subjective business performance relative to industry, all the manifest variables load on the latent construct in a uniform way (Figure 4.22).

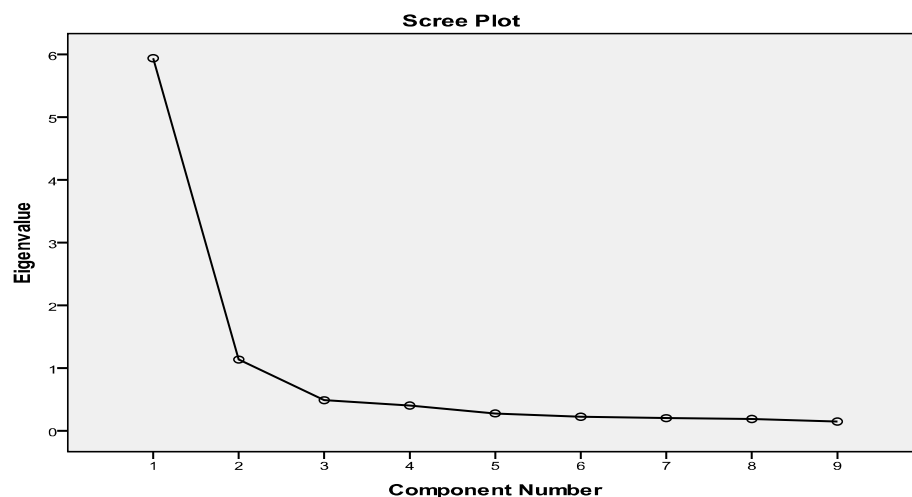


**Figure 4.22 CFA Model for Subjective Business Performance Relative to Industry**

The result of uni-dimensional CFA model reveals a Normed Chi-square of 28.40 (766.83/27); GFI = 0.693; AGFI = 0.488; NFI = 0.782; CFI = 0.787; RMR = 0.127; and RMSEA = 0.245. All these indices point out towards some alternative model for the effective measurement of the underlying construct. As a result of above, all the items of the construct of subjective business performance relative to industry have been exposed to Exploratory Factor Analysis. The purpose was to examine the factor structure of underlying constructs. Principal component method with promax rotation was adopted. Promax employs an oblique rotation, which allows the proposed factors to be correlated with each other (Kim and Mueller, 1978). Different dimensions of the construct of subjective business performance relative to industry - from the perspective of different stake holders, could be correlated to each other.

The result of Exploratory Factor Analysis (Table 4.27) reveals a KMO score of .916 and p-value of .000 for the bartlett's test of sphericity. These statistics indicate the inter-correlation among different scale items and suggest the appropriateness of the data set for the conduct of exploratory factor analysis. Scree plot reveals that the construct of

subjective business performance relative to industry have two components with eigen values of 5.94 and 1.13 respectively (Figure 4.23). Pattern matrix reveals that scale items such as: Compared to the industry average..... we have higher customer satisfaction, we have better product quality, we have better process innovation, we have better service quality, we have higher employee satisfaction, and we have better product innovation, constitutes the first component of exploratory factor analysis. As all these items reflect the non financial aspects of business performance, the first component has been named as ‘Subjective non-financial performance relative to industry’. This factor captures 66.00% of total variance. The second component of pattern matrix contain items such as: Compared to the industry average... we are more profitable, we are growing more rapidly, and we have higher sales growth. As these indicators lean towards financial performance, this indicator has been named as ‘Subjective financial performance relative to industry’ and explains additional 12.62% of variance. The factor loadings for all the items were significant and above the threshold of .50 (Table 4.27). High factor loadings of scale items not only justify their appropriateness for the measurement of the underlying constructs but also affirm the claim that these items capture higher amount of the explained variance than the error variance. High indices of the AVE and CR (Table 4.27) satisfy the psychometric requirement of these constructs and provide sufficient evidence in the support of measurement adequacy.



**Figure 4.23 Scree Plot diagram for Subjective Business Performance Relative to Industry**

**Table 4.27 Results of Exploratory Factor Analysis  
for Subjective Business Performance Relative to Industry**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.916		
Bartlett's Test of Sphericity	Approx. Chi-square	3483.45		
	Df	36		
	Sig.	.000		
<b>Pattern Matrix</b>				
Items	Item Code	Factor Loadings		
		Component 1	Component 2	
Customer Satisfaction	PRI_5	.910		
Product Quality	PRI_9	.906		
Process Innovation	PRI_8	.871		
Service Quality	PRI_4	.825		
Employee Satisfaction	PRI_6	.777		
Product Innovation	PRI_7	.753		
Profitability	PRI_2		.954	
Overall Growth	PRI_3		.926	
Sales Growth	PRI_1		.916	
Average Variance Extracted (AVE)		.71	.87	
Composite Reliability (CR)		.93	.95	
<b>Eigen Value and Total Explained Variance</b>				
Component	Name of Factor	Eigen Value	% of explained Variance	Cumulative % of explained Variance
Component 1	Subjective Financial Performance relative to industry	5.94	66.00%	66.00%
Component 2	Subjective Non-financial Performance relative to industry	1.13	12.62%	78.62%

To confirm and validate the emergent factor structure, a second order confirmatory factor analysis, with maximum likelihood criteria through AMOS 19.0 has been applied on the result of exploratory factor analysis. In the second order CFA model, three items load on the subjective financial performance relative to industry and the remaining six items load on subjective non financial performance relative to industry and then these two factors load on the one single factor i.e. subjective business performance relative to industry (Figure 4.24). The result of second-order CFA model reveals a Normed Chi-square of 4.68. GFI has an index of 0.942; value of AGFI was observed as 0.900; NFI and CFI have indices of 0.965 and 0.972 respectively. The badness of fit indices such as RMR and REMSA have indices of 0.03 and 0.09. All standardized residuals were low and standardized factor loadings were high (Table 4.28). Results reveal a modification index



of 20.61 between scale items ‘product innovation’ and ‘process innovation’ (i.e. PRI\_7 - PRI\_8); 19.89 between ‘service quality’ and ‘customer satisfaction’ (i.e. PRI\_4 - PRI\_5); 18.01 between ‘employees satisfaction’ and ‘product quality’ (i.e. PRI\_6 - PRI\_9). These modification indices were quite high and demand these paths set to be free for estimation.

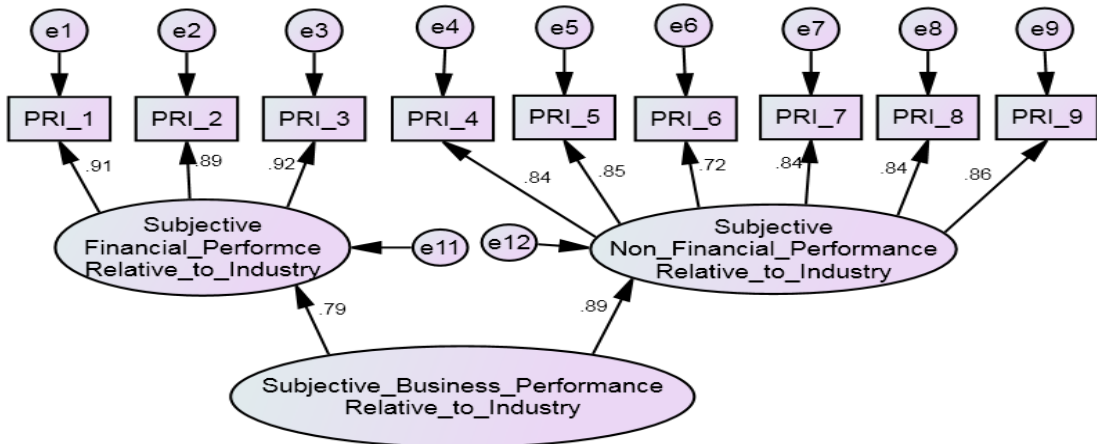


Figure 4.24 Second order CFA Model for Subjective Business Performance Relative to Industry

Table 4.28 Standardized Factor Loadings and Residuals for Subjective Business Performance Relative to Industry Scale

Item Code	Std. Factor Loading	Standardized Residual Covariances								
		PRI_9	PRI_8	PRI_7	PRI_6	PRI_5	PRI_4	PRI_3	PRI_2	PRI_1
PRI_9	0.86	0.00								
PRI_8	0.84	0.30	0.00							
PRI_7	0.84	-0.35	0.96	0.00						
PRI_6	0.72	-1.00	0.68	0.43	0.00					
PRI_5	0.85	0.60	-0.73	-0.85	0.36	0.00				
PRI_4	0.84	0.13	-0.72	-0.29	-0.43	0.86	0.00			
PRI_3	0.92	-0.51	-0.22	1.40	0.43	-0.76	0.19	0.00		
PRI_2	0.89	-0.91	-0.52	0.73	0.14	-0.54	0.20	0.03	0.00	
PRI_1	0.91	-0.34	0.09	0.90	0.27	-0.32	0.36	-0.03	0.01	0.00

As a result of the above, a covariance sign has been introduced between these pairs of items and the resulting model (Figure 4.25) has been examined for the model fit and psychometric properties. The result of revised second order CFA model reveals a Normed Chi-square of 2.62 (60.37/23); GFI = 0.970; AGFI = 0.942; NFI = 0.983; CFI = 0.989; RMR = 0.03; RMSEA = 0.06, which were all significant and reveals a good fit. Low standardized residuals (Table 4.29) affirm the claim that there is no significant difference between estimated covariance matrix and observed covariance matrix. The

standardized factor loadings for all the scale items and sub-constructs were not only significant but substantially high (Table 4.29). An AVE score of .71 supports the convergent validity of the construct. CR of .83 supports the positive correlation between the sub-dimensions of the construct of subjective business performance relative to industry and confirms their internal consistency.

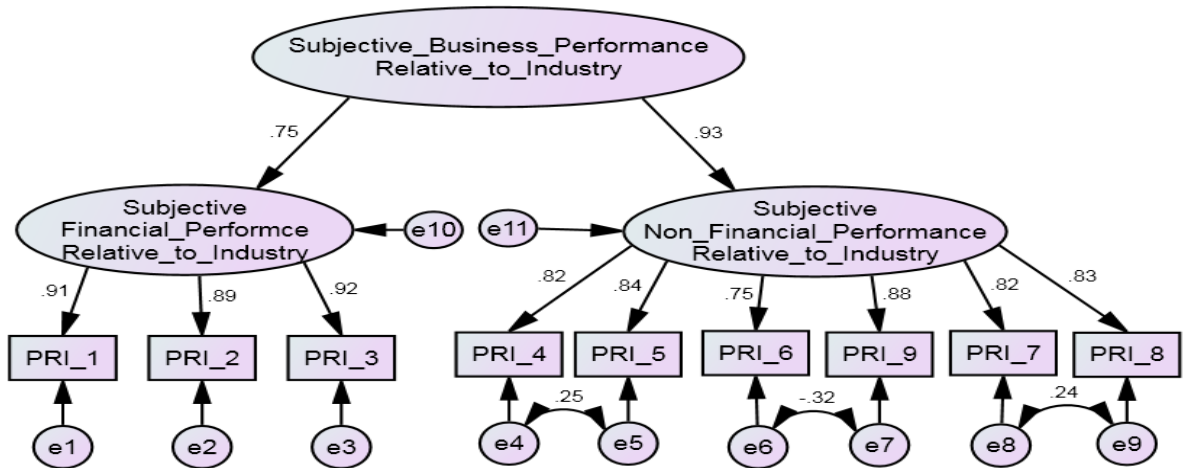


Figure 4.25 Revised CFA Model for Subjective Business Performance Relative to Industry

Table 4.29 Psychometric Properties of Subjective Business Performance Relative to Industry Scale

Const ruct	Sub- Construct	SFL	Item code	Standardized Residual Covariances									AVE	CR
				PRI_8	PRI_4	PRI_5	PRI_6	PRI_9	PRI_7	PRI_1	PRI_2	PRI_3		
Subjective Business Performance Relative to Industry	Subjective Non Financial Performan ce	0.928	PRI_8	0.00									0.71	0.83
			PRI_4	-0.25	0.00									
			PRI_5	-0.47	0.00	0.00								
			PRI_6	0.32	-0.60	0.00	0.00							
			PRI_9	0.11	0.15	0.40	0.00	0.00						
			PRI_7	0.00	0.34	-0.43	0.23	-0.37	0.00					
	Subjective Financial Performan ce	0.746	PRI_1	0.35	0.79	-0.07	0.01	-0.46	1.30	0.00				
			PRI_2	-0.28	0.62	-0.29	-0.11	-1.02	1.11	0.01	0.00			
			PRI_3	0.03	0.61	-0.51	0.17	-0.63	1.80	-0.03	0.03	0.00		

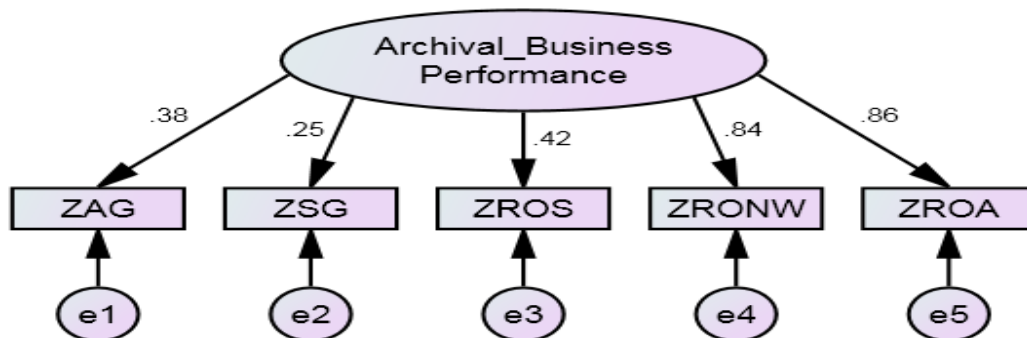
#### 4.2.11(c): Measurement and Validation of Archival Business Performance

Archival business performance has been measured in terms of five indicators identified from the literature (Dess and Robinson, 1984; Pearce *et al.*, 1987; Venkatraman and Ramanujam, 1987; Chandler and Hanks, 1993; Covin *et al.*, 1994; Dawes, 1999; Zahra

and Garvis, 2000; Antoncic and Hisrich, 2004; Wall *et al.*, 2004; Morris *et al.*, 2007; Kraus *et al.*, 2012). These indicators include sales growth (SG), asset growth (AG), return on sales (ROS), return on assets (ROA), and return on net worth (RONW). *Prowess* and *Capitaline* databases have been referred to assess the annual reports of all the companies, which have been considered for analysis. The financial records of only 301 companies were available on these databases. The sales growth rate and asset growth rate have been assessed through the compound annualised growth rate (CAGR) of the three years from 2009-10 to 2012-13. For the assessment of return on sales (ROS), return on assets (ROA), and return on net worth (RONW) the average figures of three years i.e. 2010-2013 have been considered.

The normality of the construct of archival business performance has been assessed through Mahalanobis  $D^2$  index. Mahalanobis  $D^2$  is a multidimensional version of a z-score. It measures the distance of a case from the centroid (multidimensional mean) of a distribution, at a given covariance (multidimensional variance) of the distribution and reflect outliers (Jondeau *et al.*, 2007; Press, 2007). A wide range of variation has been found with regard to the scoring of firms on different indicators of archival business performance. In order to minimize the distance within and between the items of the construct of archival business performance, the scores for all the indicators (i.e. AG, SG, ROS, RONW and ROA) have been standardized. The insight of Mahalanobis  $D^2$  indices of the standardized indicators reveals that the score of 44 cases were at a quite distance from the score of other firms. These cases have been ignored for the assessment of archival business performance and the distribution was found normal.

To estimate the strength of the relationship between manifest variables and latent construct of archival business performance, a uni-dimensional CFA model of archival business performance has been conceptualized (Figure 4.26) and examined for its fit. In the uni-dimensional CFA model of archival business performance it has been assumed that all the indicators of archival business performance (i.e. AG, SG, ROS, RONW, and ROA) affect the latent construct in similar way.



**Figure 4.26 CFA Model for Archival Business Performance**

The result of the uni-dimensional view of archival business performance reveals a Normed Chi-square 5.256 (26.282/5); GFI = 0.963; AGFI = 0.890; NFI = 0.912; CFI = 0.926; RMR = 0.068; RMSEA = 0.129. Standardized factor loadings for most of the items were less than the cut off of .50. All these indices point out towards some alternative model for the effective measurement of the underlying construct.

To combine the correlated items into unique factors and to identify the sub dimensions of the construct of archival business performance, Exploratory Factor Analysis has been employed. The primary purpose of employing Exploratory Factor Analysis was to examine the factor structure of underlying constructs and to provide information about the stability of the factor structure that facilitates the measurement process. It has been assumed that different facets of archival business performance could be correlated with each other. So, Exploratory Factor Analysis with principal component analysis and promax rotation has been applied.

The result of exploratory factor analysis reveals a KMO score of .658 and p-value of .000 for the bartlett's test of sphericity. These statistics show that different indicators of the construct of archival business performance are correlated with each other and the Exploratory Factor Analysis can be applied on the given data set. After the assessment of KMO value and Bartlett's test of sphericity, the Scree Plot has been assessed. Figure 4.27 reveals that the construct of archival business performance can be bifurcated into two sub constructs. First component include indicators such as: return on net-worth, return on assets, and return on sales. As all these indicators point out towards the profitability of an organization; so the first component has been named as 'Profitability'. This factor

explains 45.65% of total variance. Asset growth and sales growth constitutes another facet of the construct of archival business performance and explain another 21.13% variance. This factor has been named as ‘Growth’. High factor loadings (Table 4.30) support the appropriateness of the indicators for the measurement of the respective construct of profitability and growth. High score of AVE -for both of the dimensions of profitability and growth support the convergent validity of these dimensions, where as high index of CR (Table 4.30) proves their internal consistency.

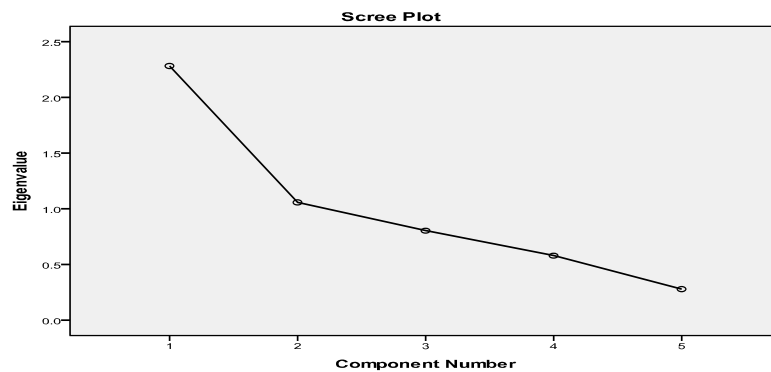


Figure 4.27 Scree Plot diagram for Archival Business Performance

**Table 4.30 Results of Exploratory Factor Analysis for Archival Business Performance**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy			.658	
Bartlett's Test of Sphericity	Test of	Approx. Chi-square	294.898	
		Df	10	
		Sig.	.000	
<b>Pattern Matrix</b>				
Items		Item Code	Factor Loadings	
			Component 1	Component 2
Return on Net-worth		ZRONW	.856	
Return on Assets		ZROA	.831	
Return on Sales		ZROS	.738	
Asset Growth		ZAG		.836
Sales Growth		ZSG		.798
Average Variance Extracted (AVE)			.66	.67
Composite Reliability (CR)			.85	.80
<b>Eigen Value and Total Explained Variance</b>				
Component	Name of Factor	Eigen Value	% of explained Variance	Cumulative % of explained Variance
Component 1	Profitability	2.282	45.65%	45.65%
Component 2	Growth	1.057	21.13%	66.78%

A second order confirmatory factor analysis has been applied to validate the above factor structure. In the second order CFA, indicators such as: RONW, ROA and ROS load on the latent construct of 'Profitability', whereas AG and SG load on the latent construct of 'Growth'. Then these first order latent constructs load on the second order latent construct of archival business performance (Figure 4.28). The resulting model has been examined for the model fit.

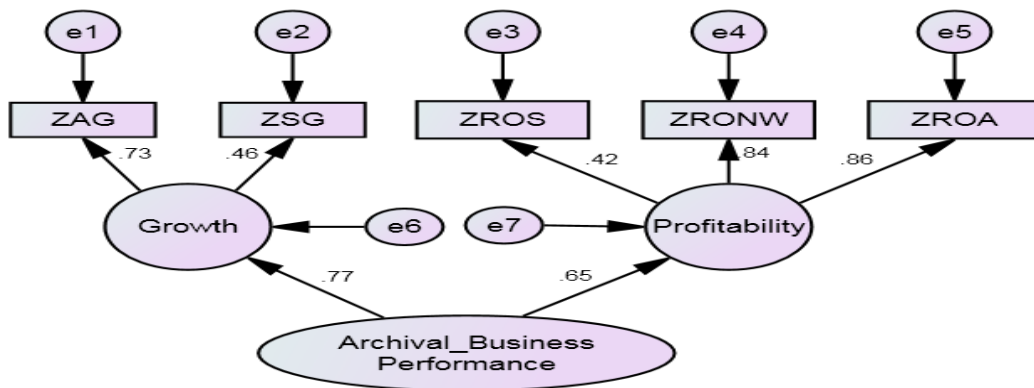


Figure 4.28 Second order CFA Model for Archival Business Performance

Table 4.31 Model Fit Indices and Psychometric Properties of Archival Business Performance Scale

Model Fit Indices										
Normed Chi-square	GFI	AGFI		NFI		CFI		RMR	REMSA	
1.560	.990	.963		.979		.992		.026	.047	
Construct	Sub-Construct	SFL	Item Code	Standardized Residual Covariances					AVE	CR
				ZROA	ZRONW	ZROS	ZSG	ZAG		
Archival Business Performance	Profitability	0.654	ZROA	0.00					0.51	0.69
			ZRONW	-0.01	0.00					
			ZROS	-0.17	0.30	0.00				
	Growth	0.775	ZSG	-0.21	0.06	0.99	0.00			
			ZAG	0.41	-0.30	-1.07	0.00	0.00		

The result of second order CFA model of archival business performance reveals a Normed Chi-square of 1.560 with a p-value of 0.182. The value of all goodness of fit indices e.g. GFI, AGFI, NFI and CFI (Table 4.31) meet the threshold of .90. The badness of fit indices (RMR and REMSA) have statistics of .025 and .047 respectively, which were significant and fall below the cut off of .08. All these indices reveal a good fit. In addition, low standardized residuals affirm the claim that there is no significant

difference between the observed and estimated covariance matrices. Standardized factor loadings of .654 and .775 for the dimensions of profitability and growth; AVE score of .51 and CR of .69 fulfils the psychometric requirements and can be considered sufficient for the measurement of the latent construct of archival business performance.

Thus, all the scales evaluated above are found to be reliable, valid and fit for further analysis.

## **CHAPTER V**

### **ASSOCIATION OF ENTREPRENEURIAL ORIENTATION WITH ORGANIZATIONAL DEMOGRAPHICS**

The purpose of this chapter is to assess the association of entrepreneurial orientation with the diverse characteristics of a firm. Section 5.1 presents the results of data analysis regarding the association of aggregated measure of entrepreneurial orientation (uni-dimensional view) with the diverse characteristics of a firm (i.e. age, size, type and nature). Section 5.2 presents the association between the multi-dimensional view of entrepreneurial orientation and organizational demographics.

#### **5.1: Entrepreneurial Orientation (Uni-dimensional) and Organizational Demographics**

To test the association of aggregated measure of entrepreneurial orientation with diverse characteristic of a firm (i.e. age, size, type and nature), Chi-square test of independence has been applied. The Chi-square test of independence is a non parametric test, which assesses the degree of association between the two categorical variables. Chi-square test has been used to test following hypotheses:

H<sub>1</sub>: Age of firm is not significantly associated with the degree of entrepreneurial orientation.

H<sub>2</sub>: Size of firm (based on annual turnover) is not significantly associated with the degree of entrepreneurial orientation.

H<sub>3</sub>: Size of firm (based on number of employees) is not significantly associated with the degree of entrepreneurial orientation.

H<sub>4</sub>: Nature of firm is not significantly associated with the degree of entrepreneurial orientation.

H<sub>5</sub>: Type of organization is not significantly associated with the degree of entrepreneurial orientation.



To assess the degree of entrepreneurial orientation, summated score of validated entrepreneurial orientation construct has been classified into three unique categories i.e. low degree of entrepreneurial orientation, moderate degree of entrepreneurial orientation and high degree of entrepreneurial orientation (Table 5.1). A high degree of entrepreneurial orientation indicates the proclivity of the firm towards entrepreneurial behaviour i.e. a strong inclination of the firm towards innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy. Low degree indicates the adoption of conservative behaviour i.e. propensity of a firm to engage in relatively low levels of innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy. Moderate score of entrepreneurial orientation reveals a moderate approach of the organization in adoption of entrepreneurial behaviour.

**Table 5.1 Classification of Entrepreneurial Orientation into different Categories**

Parameter	Degree of Entrepreneurial Orientation	Score	Theoretical Possible Range
Entrepreneurial Orientation	Low	Up to 58	23 to 161
	Moderate	58 to 104	
	High	More than 104	

To see how diverse characteristics of a firm (age, size, type and nature) are associated with its entrepreneurial orientation, a cross tabulation has been compiled (Table 5.2) and examined for the extent of difference between the expected and observed frequencies.

The result of Chi-square test of independence regarding association between the age of a firm and degree of entrepreneurial orientation produces a Chi-square statistic of 1.259 with a p-value of 0.53. Inspection of Chi-square critical value table at 5 percent level of significance with 2 degrees of freedom reveals a cut off of 5.99 for the rejection of null hypothesis of independent relationship. Since the Chi-square statistic of 1.259 with a p-value of .53 does not fall under the critical region of rejection so the null hypothesis of no association between the age of a firm and the degree of entrepreneurial orientation cannot be rejected at 5 percent level of significance. The evidence produced by the data suggests that the age of a firm and the degree of entrepreneurial orientation, are independent of each other i.e. the age of a firm is not significantly associated with the

degree of entrepreneurial orientation. Thus, null hypothesis  $H_1$  i.e. *Age of firm is not significantly associated with the degree of entrepreneurial orientation* is accepted.

**Table 5.2 Association between Organizational Demographics and Degree of Entrepreneurial Orientation**

<b>Association between Age of Firm and Degree of Entrepreneurial Orientation</b>										
Parameter	Classification	Degree of Entrepreneurial Orientation			Total	Chi-square statistics	Degree of freedom	Critical value of Chi-square	p-value	Cramer's V Statistic
		Low	Mode rate	High						
Age	More than 15 Years	22	138	208	368	1.259	2	5.99	.533	.052
	Up to 15 Years	4	29	56	89					
Total		26	167	264	457					
<b>Association between Size of Firm (based on annual turnover) and Degree of Entrepreneurial Orientation</b>										
Annual Turnover	More than Rs. 500 Crore	1	49	105	155	16.08	2	5.99	.000*	.188
	Between Rs. 50-500 Crore	25	118	159	302					
Total		26	167	264	457					
<b>Association between Size of Firm (based on number of employees) and Degree of Entrepreneurial Orientation</b>										
No. of Employees	More than 250	12	123	207	342	13.27	2	5.99	.001*	.170
	Up to 250	14	44	57	115					
Total		26	167	264	457					
<b>Association between Nature of Industry and Degree of Entrepreneurial Orientation</b>										
Nature of Industry	Manufacturing	17	116	179	312	0.236	2	5.99	.889	.023
	Service	9	51	85	145					
Total		26	167	264	457					
<b>Association between Type of Organization and Degree of Entrepreneurial Orientation</b>										
Type of Organization	Listed	18	76	107	201	8.16	2	5.99	.017*	.134
	Non-listed	8	91	157	256					
Total		26	167	264	457					

\*Significant at 5% level

The cross tabulation for the association between size of firm (based on annual turnover) and degree of entrepreneurial orientation, reveals a Chi-square statistic of 16.08, which was large enough to reject the null hypothesis of independent relationship at 5 percent level of significance. The p-value of .000 also affirms the above claim and provides evidence to reject the hypothesis of independent relationship. Although the Chi-square test of independence sufficiently assesses the significance of the association between two categorical variables but it does not reflect the strength of the association. To generate further insight regarding the extent of association, *Cramer's V* statistics has been assessed. Cramer's V is a statistical measure to assess the strength of association of two categorical variables. An index of .188 for Cramer's V implies a weak form of association between size of firm (based on annual turnover) and the degree of entrepreneurial orientation. Thus, H<sub>2</sub> i.e. *Size of firm (in terms of annual turnover) is not significantly associated with the degree of entrepreneurial orientation* is not accepted.

The result of Chi-square test of independence regarding size of firm (based on number of employees) and degree of entrepreneurial orientation suggest significant association between these variables. The data yields a Chi-square statistic of 13.27 with a p-value of .001. However, Cramer's V statistic of .17 reveals a weak form of association. Thus, H<sub>3</sub> i.e. *Size of firm (based on number of employees) is not significantly associated with the degree of entrepreneurial orientation* is not accepted.

Cross Tabulation for the association between the nature of industry and degree of entrepreneurial orientation reveals a Chi-square statistic of .236 with a p-value of .889. The low value of Chi-square statistic does not produce sufficient evidence to reject the claim made in the null hypothesis. Thus, H<sub>4</sub> i.e. *Nature of firm is not significantly associated with the degree of entrepreneurial orientation* is accepted.

The Chi-square test of independence regarding association between the type of organization (i.e. listed and non-listed firms) and degree of entrepreneurial orientation produces a Chi-square statistic of 8.16 with p value of .017, indicating a significant association between type of organization and degree of entrepreneurial orientation. However, the Cramer's V statistics of .134 reveal a weak association between these

variables. Thus, H<sub>5</sub> i.e. *Type of organization is not significantly associated with the degree of entrepreneurial orientation* is not accepted.

The above discussion reveals that the extent of entrepreneurial posture adopted by a firm is not significantly associated with the age of firm and nature of the industry. So, firms of any age group can adopt a strategic posture, which is highly entrepreneurial. In addition, their decision to adopt an entrepreneurial posture remains independent of the nature of industry, that a firm belongs to. However, significant degree of association between the type of organization and size of organization with the degree of entrepreneurial orientation has been found. But the strength of these associations is not very strong.

## **5.2: Entrepreneurial Orientation (Multi-dimensional) and Organizational Demographics**

The conception of the multi-dimensional view of entrepreneurial orientation is based upon the belief that each dimension of entrepreneurial orientation is unique and has a distinct contribution towards the success of an organization. Aggregated measures of entrepreneurial orientation may conceal the true nature of the relationship that exists between organizational success and various dimensions of entrepreneurial orientation. The literature suggest that all five dimensions of entrepreneurial orientation viz. innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy are important for firm's success, but it is also suggested that only a sub-set of these dimensions may be relevant for a particular context in which a firm operates. There is a strong possibility that some dimensions might have carried the other dimensions along which may have limited or insignificant influence, or even negative influence, on firm's growth while viewing entrepreneurial orientation as a uni-dimensional construct. In the light of these arguments, it becomes pertinent to explore the association of each dimension of entrepreneurial orientation with demographics of a firm.

To study the association of each dimension of entrepreneurial orientation (i.e. innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy) with the diverse characteristics of a firm (age, size, type and nature), various dimensions

of entrepreneurial orientation, based upon their theoretical possible score, have been categorised into sub-groups (Table 5.3). A low score indicates a conservative approach, by an organization, towards the given dimension say innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy i.e. low inclination of firm toward that dimension of entrepreneurial orientation. Moderate score reveals a moderate approach of the organization in adoption of entrepreneurial behaviour with respect to given dimension; whereas a high score indicates a strong inclination towards the given dimension of entrepreneurial orientation.

**Table 5.3 Classification of sub-dimensions of Entrepreneurial Orientation into different Categories**

Parameter	Degree	Score	Theoretical Possible Range
Innovativeness	Low	Up to 15	6 to 42
	Moderate	15 to 27	
	High	More than 27	
Proactiveness	Low	Up to 13	5 to 35
	Moderate	13 to 23	
	High	More than 23	
Risk- Taking	Low	Up to 10	4 to 28
	Moderate	10 to 18	
	High	More than 18	
Competitive- Aggressiveness	Low	Up to 13	5 to 35
	Moderate	13 to 23	
	High	More than 23	
Autonomy	Low	Up to 8	3 to 21
	Moderate	8 to 14	
	High	More than 14	

### **5.2.1: Association of Age of Firm with Dimensions of Entrepreneurial Orientation**

To assess the association of the age of firm with dimensions of entrepreneurial orientation (i.e. innovativeness, proactiveness, risk- taking, competitive aggressiveness and autonomy), Chi-square test of independence has been applied. Table 5.4 shows insignificant association of age of firm with all dimensions of entrepreneurial orientation at 5% level of significance.

**Table 5.4 Association of Age of Firm  
with Dimensions of Entrepreneurial Orientation**

Parameter and Classification		Age		Total	Chi-square statistics	Degree of freedom	Critical value of Chi-square	p-value	Cramer's V Statistic
		Up to 15 Years	More than 15 Years						
Degree of Autonomy	Low	13	94	107	4.89	2	5.99	0.089	0.103
	Moderate	14	54	68					
	High	62	220	282					
Total		89	368	457					
Degree of Competitive Aggressiveness	Low	7	26	33	0.068	2	5.99	0.966	0.012
	Moderate	17	71	88					
	High	65	271	336					
Total		89	368	457					
Degree of Innovativeness	Low	8	41	49	0.579	2	5.99	0.749	0.036
	Moderate	17	61	78					
	High	64	266	330					
Total		89	368	457					
Degree of Proactiveness	Low	2	10	12	0.084	2	5.99	0.959	0.014
	Moderate	9	39	48					
	High	78	319	397					
Total		89	368	457					
Degree of Risk-Taking	Low	30	158	188	2.526	2	5.99	0.283	0.074
	Moderate	18	63	81					
	High	41	147	188					
Total		89	368	457					

**5.2.2: Association of Size of Firm (based on Annual Turnover) with Dimensions of Entrepreneurial Orientation**

To see how the size of firm (based on annual turnover) is associated with each dimension of entrepreneurial orientation, Chi-square test of independence has been applied.

The results of Chi-square test of independence between the size of firm (based on annual turnover) with each dimensions of entrepreneurial orientation reveal that, at 5 percent level of significance, the difference between the observed and expected pattern of frequencies cannot be attributed to the chance factor.

**Table 5.5 Association of Size of Firm (based on Annual Turnover)  
with Dimensions of Entrepreneurial Orientation**

Parameter and Classification		Turnover		Total	Chi-square statistics	Degree of freedom	Critical Value of Chi-square	p-value	Cramer's V Statistic
		Between Rs. 50-500 Crore	More than Rs. 500 Crore						
Degree of Autonomy	Low	76	31	107	9.817	2	5.99	0.007*	0.147
	Moderate	54	14	68					
	High	172	110	282					
Total		302	155	457					
Degree of Competitive Aggressiveness	Low	29	4	33	11.998	2	5.99	0.002*	0.162
	Moderate	65	23	88					
	High	208	128	336					
Total		302	155	457					
Degree of Innovativeness	Low	40	9	49	9.299	2	5.99	0.010*	0.143
	Moderate	57	21	78					
	High	205	125	330					
Total		302	155	457					
Degree of Proactiveness	Low	11	1	12	15.33	2	5.99	0.000*	0.183
	Moderate	42	6	48					
	High	249	148	397					
Total		302	155	457					
Degree of Risk-Taking	Low	139	49	188	13.729	2	5.99	0.001*	0.173
	Moderate	57	24	81					
	High	106	82	188					
Total		302	155	457					

\*Significant at 5% level

The Chi-square test of independence produces a statistics of 9.817 for the association between annual turnover and degree of autonomy, 11.998 for the association between annual turnover and degree of competitive aggressiveness, 9.299 for the association between annual turnover and degree of innovativeness, 15.33 for the association between annual turnover and degree of proactiveness and 13.729 for the association between annual turnover and degree of risk taking. All these statistics exceed the critical value of 5.99 (alpha = 0.05 and df = 2) and are significant at 5% level. However, Cramer's V statistic (Table 5.5) reflects a weak form of association between these variables. There is a significant but not strong association between the size of firm (based on annual turnover) and the dimensions of entrepreneurial orientation.

### 5.2.3: Association of Size of Firm (based on Number of Employees) with Dimensions of Entrepreneurial Orientation

To study the association of the size of a firm (based on number of employees) with each dimension of entrepreneurial orientation, Chi-square test of independence has been applied and examined for its significance (Table 5.6).

**Table 5.6 Association of Size of Firm (based on Number of Employees) with Dimensions of Entrepreneurial Orientation**

Parameter and Classification		No. of Employees		Total	Chi-square statistics	Degree of freedom	Critical Value of Chi-square	p-value	Cramer's V Statistic
		Up to 250 Employees	More than 250 Employees						
Degree of Autonomy	Low	34	73	107	3.398	2	5.99	0.183	0.086
	Moderate	17	51	68					
	High	64	218	282					
Total		115	342	457					
Degree of Competitive Aggressiveness	Low	17	16	33	13.124	2	5.99	0.001*	0.169
	Moderate	20	68	88					
	High	78	258	336					
Total		115	342	457					
Degree of Innovativeness	Low	23	26	49	14.798	2	5.99	0.001*	0.18
	Moderate	21	57	78					
	High	71	259	330					
Total		115	342	457					
Degree of Proactiveness	Low	9	3	12	16.987	2	5.99	0.000*	0.193
	Moderate	9	39	48					
	High	97	300	397					
Total		115	342	457					
Degree of Risk- Taking	Low	58	130	188	5.612	2	5.99	0.060	0.111
	Moderate	16	65	81					
	High	41	147	188					
Total		115	342	457					

\*Significant at 5% level

Table 5.6 reveals that among the various dimensions of entrepreneurial orientation, the dimensions of autonomy and risk taking are not significantly associated with the size of firm (based on number of employees), at 5 percent level of significance. The Chi-square statistics of 13.124, 14.798 and 16.987 respectively for the association of the degree of



competitive aggressiveness, innovativeness and proactiveness with size of firm (based on number of employees) suggest significant association of these dimensions with size of firm (based on number of employees). However, Cramer's V statistic shows that these associations are weak in nature.

#### 5.2.4: Association of Nature of Industry with Dimensions of Entrepreneurial Orientation

The association of the nature of industry with each of the dimension of entrepreneurial orientation have been examined through Chi-square test of independence.

**Table 5.7 Association of Nature of Industry with Dimensions of Entrepreneurial Orientation**

Parameter and Classification		Nature of Industry		Total	Chi-square statistics	Degree of Freedom	Critical Value of Chi-square	p-value	Cramer's V Statistic
		Service	Manufacturing						
Degree of Autonomy	Low	27	80	107	8.014	2	5.99	0.018*	0.132
	Moderate	15	53	68					
	High	103	179	282					
Total		145	312	457					
Degree of Competitive Aggressiveness	Low	10	23	33	1.083	2	5.99	0.582	0.049
	Moderate	32	56	88					
	High	103	233	336					
Total		145	312	457					
Degree of Innovativeness	Low	21	28	49	5.189	2	5.99	0.075	0.107
	Moderate	29	49	78					
	High	95	235	330					
Total		145	312	457					
Degree of Proactiveness	Low	5	7	12	1.599	2	5.99	0.450	0.059
	Moderate	12	36	48					
	High	128	269	397					
Total		145	312	457					
Degree of Risk- Taking	Low	48	140	188	6.834	2	5.99	0.033*	0.122
	Moderate	33	48	81					
	High	64	124	188					
Total		145	312	457					

\*Significant at 5% level

Table 5.7 reveals that the dimension of autonomy (Chi-square statistics of 8.014 with p-value of 0.018), and risk-taking (Chi-square statistics of 6.834 with p-value of 0.033), are significantly associated with nature of industry. The dimension of innovativeness (Chi-square statistics of 5.189 with p-value of 0.075) proactiveness (Chi-square statistics of 1.599 with p-value of 0.450) and competitive aggressiveness (Chi-square statistics of 1.083 with p-value of 0.582) are not significantly associated with nature of industry. The evidence generated by sample data proves that manufacturing firms differ significantly from service firms with respect to the extent of autonomy and risk-taking, but at the same time the Cramer's V statistic (Table 5.7) reveals that the strength of these associations is low.

#### **5.2.5: Association of Type of Organization with Dimensions of Entrepreneurial Orientation**

The cross classification table for the association of the type of organization with each dimension of entrepreneurial orientation reveals that, at 5 percent level of significance, autonomy (Chi-square statistics of 2.826 with p-value of 0.243) and risk taking (Chi-square statistics of 5.062 with p-value of 0.080), are not significantly associated with the type of organization. The association of the dimension of competitive aggressiveness, innovativeness and proactiveness with the type of organization (listed and non listed firms) produces a Chi-square statistics of 6.348, 12.211 and 8.84 respectively. These statistics suggest significant association of these dimensions with the type of organization. However, the strength of these associations is not very strong, as indicated by the Cramer's V statistic (Table 5.8).

**Table 5.8 Association of Type of Organization  
with Dimension of Entrepreneurial Orientation**

Parameter and Classification		Type of Organization		Total	Chi-square statistics	Degree of Freedom	Critical Value of Chi-square	p-value	Cramer's V Statistic
		Listed	Non-listed						
Degree of Autonomy	Low	54	53	107	2.826	2	5.99	0.243	0.079
	Moderate	31	37	68					
	High	116	166	282					
Total		201	256	457					
Degree of Competitive Aggressiveness	Low	21	12	33	6.348	2	5.99	0.042*	0.118
	Moderate	41	47	88					
	High	139	197	336					
Total		201	256	457					
Degree of Innovativeness	Low	33	16	49	12.211	2	5.99	0.002*	0.163
	Moderate	33	45	78					
	High	135	195	330					
Total		201	256	457					
Degree of Proactiveness	Low	10	2	12	8.84	2	5.99	0.012*	0.139
	Moderate	24	24	48					
	High	167	230	397					
Total		201	256	457					
Degree of Risk- Taking	Low	90	98	188	5.062	2	5.99	0.080	0.105
	Moderate	40	41	81					
	High	71	117	188					
Total		201	256	457					

\*Significant at 5% level

The results of the present chapter reveal that there is no significant association between age of a firm and the kind of strategic posture (entrepreneurial orientation) adopted by a firm. Firms of any age group can adopt a strategic posture which is highly entrepreneurial. But as far as the size of a firm is concerned, the findings suggest that there is a significant association between the size of a firm and the extent of entrepreneurial behaviour demonstrated by a firm. Large firms, both in terms of annual turnover and number of employees differ significantly from small firms, while introducing new products and services, adopting novel practices, undertaking risky alternatives, adopting a forward looking perspective and demonstrating an aggressive behaviour towards their rivals. However, the findings suggest that the degree of

autonomy provided to employees is not significantly associated with the size of firm (based on number of employees). Firms with a larger number of employees can be conservative in their approach while granting autonomy to their employees whereas a firm with smaller number of employees can provide sufficient autonomy to their employees and vice versa. The association between the nature of industry and entrepreneurial orientation was not significant. However, the deconstruction of entrepreneurial orientation construct reveals that the nature of firm is not significantly associated with some of the dimensions of entrepreneurial orientation (i.e. innovativeness, proactiveness and competitive aggressiveness). The degree of autonomy and risk-taking are significantly associated with nature of firm, however the extent of association is not very high. As far as type of organization and the degree of entrepreneurial orientation is concerned, study reveals a significant but weak form of association. However, the deconstruction of entrepreneurial orientation construct reveals that only some of the dimensions of entrepreneurial orientation (i.e. innovativeness, proactiveness and competitive aggressiveness) are significantly associated with the type of organization.

## **CHAPTER VI**

### **ENTREPRENEURIAL ORIENTATION - BUSINESS PERFORMANCE RELATIONSHIP**

The purpose of this chapter is to measure the impact of entrepreneurial orientation on business performance. Section 6.1 discloses the procedure followed for the assessment of entrepreneurial orientation - business performance relationship. Section 6.2 presents six proposed models of entrepreneurial orientation - business performance relationship. The comparison of the various competing models of entrepreneurial orientation - business performance relationship has been presented in section 6.3.

#### **6.1: Entrepreneurial Orientation and Business Performance Relationship**

To assess entrepreneurial orientation - business performance relationship, two-stage procedure has been adopted. Firstly a measurement model has been assessed and then the structural model has been examined.

Measurement model is a model which examines: (i) how systematically measured variables represent the underlying theoretical constructs - specified in measurement model and (ii) how logically various latent constructs are related with each other (Joreskog, 1971; Joreskog and Sorbom, 1993). In measurement model, all the constructs are assumed as exogenous and non causal bidirectional relationships (reflected through double headed arrows) are to be studied among them. All the manifest variables are allowed to load only on their prescribed construct with no cross loadings i.e. the measures of two different constructs are not allowed to correlate with each other. However, the different constructs could be correlated with each other.

Structural model is a model which examines the causal relationship among constructs under investigation (Joreskog and Sorbom, 1993; Ullman, 2001). It measures the degree of dependency of the endogenous variable on the exogenous variables and assesses the significance of various hypothesized casual relationships (i.e. structural parameter estimates or path estimates). Any structural parameter estimates or path

coefficient with a critical value of more than 1.96 at five percent level of significance or more than 2.58 at one percent level of significance, specifies the significance of causal relationship i.e. causal relationship between hypothesized constructs significantly differ from zero. A positive index of structural parameter estimate implies positive impact of exogenous variable on endogenous variables, whereas a structural parameter estimate with negative value highlights the inverse nature of the relationship between exogenous and endogenous variables.

Though the causal relationships between exogenous and endogenous variables can be accessed through regression analysis, SEM is a superior technique compared to the regression analysis. Regression analysis treats variables and constructs identically and does not take into account any of the measurement properties that go along with forming a multiple-item construct. Whereas, in case of SEM all the properties of measurement model are duly taken into consideration while assessing the causal relationship between two or more constructs. To assess the degree of model fit CFA/ SEM, rather than concentrating on a single index, often rely upon numerous fit indices like: Normed Chi-square, Goodness-of-fit Index (GFI), Adjusted goodness-of-fit Index (AGFI), Root Mean Square Residual (RMR), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Normed Fit Index (NFI) etc. In contrast, these fit statistics are generally not available in regression analysis. A careful consideration is that assessing a model fit through numerous fit indices is more parsimony approach than one with absolute or single criteria (Hair *et al.*, 1998).

## **6.2: Models of Entrepreneurial Orientation - Business Performance Relationship**

To assess the impact of entrepreneurial orientation on business performance, six unique models of entrepreneurial orientation - business performance relationship have been conceptualized and examined for model fit and significance of structural parameter estimates. In Model 1, the effect of uni-dimensional view of entrepreneurial orientation on subjective business performance relative to competitors has been assessed. Model 2 assesses the relationship between the uni-dimensional conceptualization of

entrepreneurial orientation on the subjective business performance relative to industry. In Model 3, archival business performance has been taken as an endogenous variable and uni-dimensional view of entrepreneurial orientation has been considered as an exogenous variable. Model 4 reflects the multi-dimensional view of entrepreneurial orientation, where the independent effect of innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy has been assessed on subjective business performance relative to competitors. In Model 5, subjective business performance relative to industry has been considered as an endogenous construct, where as the construct of innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy play the role of exogenous variables. Model 6 assesses the relationship between archival measure of performance and multi-dimensional view of entrepreneurial orientation.

Model 1: Entrepreneurial Orientation (Uni- dimensional) → Subjective Business Performance Relative to Competitors

Model 2: Entrepreneurial Orientation (Uni- dimensional) → Subjective Business Performance Relative to Industry

Model 3: Entrepreneurial Orientation (Uni- dimensional) → Archival Business Performance

Model 4: Entrepreneurial Orientation (Multi-dimensional) → Subjective Business Performance Relative to Competitors

Model 5: Entrepreneurial Orientation (Multi-dimensional) → Subjective Business Performance Relative to Industry

Model 6: Entrepreneurial Orientation (Multi-dimensional) → Archival business Performance

The model fit of both measurement model and structural model has been assessed through the criteria suggested by Hair *et al.*, 2008 i.e.: (i) Normed Chi-square should be less than 3.0; (ii) GFI, AGFI, NFI, and CFI should be nearer or higher than .90; (iii) RMR and RMSEA should be less than .08; (iv) the standardized residuals should be less than 2.5; (v) the critical values for standardized factor loading should be more than 1.96; (vi) AVE should be 0.5 or more; (vii) CR should exceed 0.7; and (8) the squared inter construct correlation must be less than the minimum of AVE of respective constructs.

### **6.2.1: Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Competitors**

To assess the relationship between the uni-dimensional construct of entrepreneurial orientation and subjective business performance relative to competitors, firstly measurement model of these constructs has been examined for measurement adequacy and inter construct correlation (Figure 6.1).

The measurement model reveals a Normed Chi-square of 1.69 (815.51/481); GFI = 0.901; AGFI = 0.884; NFI = 0.936; CFI = 0.973; RMR = 0.061; and RMSEA = 0.039. Normed Chi-square meets the conservative cut off of 3.0. GFI, NFI and CFI exceed the threshold of .90. RMR and RMSEA fall below the cut off of .08. AGFI of .884 was very nearer to the conservative cut off of .90 (Joreskog and Sorbom, 1993; Hair *et al.*, 2008; Hooper *et al.*, 2008) but much beyond the progressive cut off of .80 (Brett and Drasgow, 2002; Kanste *et al.*, 2007; Horzum and Cakir, 2009; Herzog, 2011). Given the complexities of the present model, the AGFI of .884 was quite adequate for the study. The standardized residuals fall below the cut off of 2.5 (Table 6.1). Table 6.2 reveals that standardized factor loadings range from 51 percent for the dimension of risk taking to 92.5 percent for the dimension of innovation. All exceed the 50 percent rule of thumb. High score of AVE for the construct of entrepreneurial orientation and subjective business performance (Table 6.2) affirms the convergent validity of respective constructs. CR of .872 for entrepreneurial orientation construct, and .829 for the construct of subjective business performance relative to competitors, exceeds the cut off of .70 and suggests adequate internal consistency of the scale items.

The inter-relatedness of entrepreneurial orientation and subjective business performance has been assessed through the significance of the covariance arrow. Measurement model reveals a critical ratio of 9.39 and correlation coefficient of .909 between entrepreneurial orientation and subjective business performance. These indices were significant at 1 percent level and indicate a high degree of inter-relatedness between the underlying constructs of entrepreneurial orientation and subjective business performance.



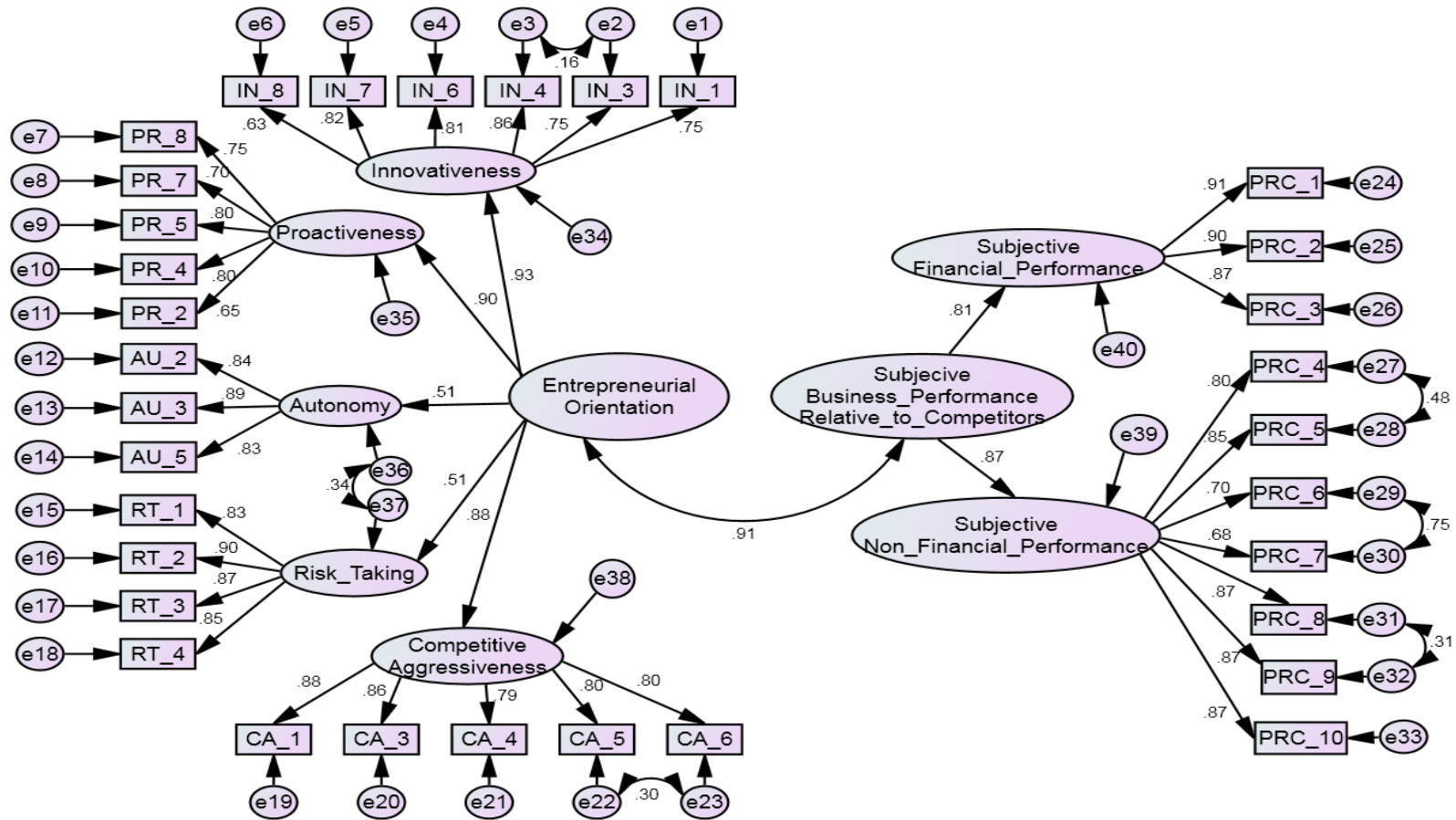


Figure 6.1 Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Competitors



**Table 6.2 Psychometric Properties of Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Competitors**

Parameter	Index	Construct	Dimension	Std. Factor Loadings	AVE	CR
Chi-square	815.51	Entrepreneurial Orientation (Uni-dimensional)	Innovativeness	.925	.593	.872
Degree of Freedom	481		Proactiveness	.901		
Normed Chi-square (Chi-square/ df)	1.69		Risk Taking	.510		
GFI	.901		Competitive Aggressiveness	.880		
AGFI	.884		Autonomy	.514		
NFI	.936					
CFI	.973	Subjective Business Performance Relative to Competitors	Subjective Financial Performance	.808	.708	.829
RMR	.061		Subjective Non-Financial Performance	.874		
REMSA	.039					

The causal relationship between exogenous construct of entrepreneurial orientation and endogenous construct of subjective business performance relative to competitors has been assessed by employing structural equation modeling with path analysis. In the path diagram (Figure 6.2), entrepreneurial orientation has been considered as an exogenous variable (predictor), subjective business performance relative to competitors acts as an endogenous variable (dependent) and the structural relationship between these two constructs has been reflected through a single headed arrow on path diagram (i.e. Entrepreneurial Orientation → Subjective Business Performance Relative to Competitors). Structural relationship has been examined for three issues: (i) overall and relative model fit - as a measure of acceptance of the proposed model; (ii) significance of structural parameter estimates i.e. the relevance of the predictive variables in the model;

and (iii) R square i.e. the degree of variance of the endogenous variables, which can be explained by the latent constructs that predict it. Table 6.3 reveals that the model fit indices of structural model of Entrepreneurial Orientation→Subjective Business Performance Relative to Competitors were not only significant but also remain same as in the measurement model. The critical ratio of 11.86 for the specified path (Entrepreneurial Orientation→Subjective Business Performance Relative to Competitors) and R square of 0.826 affirm the claim that the performance of a business is significantly dependent upon the strategic posture of a firm.

**Table 6.3 Model Fit Indices and Path Coefficients of Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Competitors**

Parameter	Measurement Model	Structural Model
Chi-square	815.51	815.51
Degree of Freedom	481	481
Normed Chi-square (Chi-square/ df)	1.69	1.69
GFI	.901	.901
AGFI	.884	.884
NFI	.936	.936
CFI	.973	.973
RMR	.061	.061
REMSA	.039	.039
Critical Ratio of Path (Entrepreneurial Orientation→Subjective Business Performance Relative to Competitors)		11.86**
Structural Parameter Estimates or Path Coefficients		0.909**
R- Square		0.826

\*\* Significant at .01 level

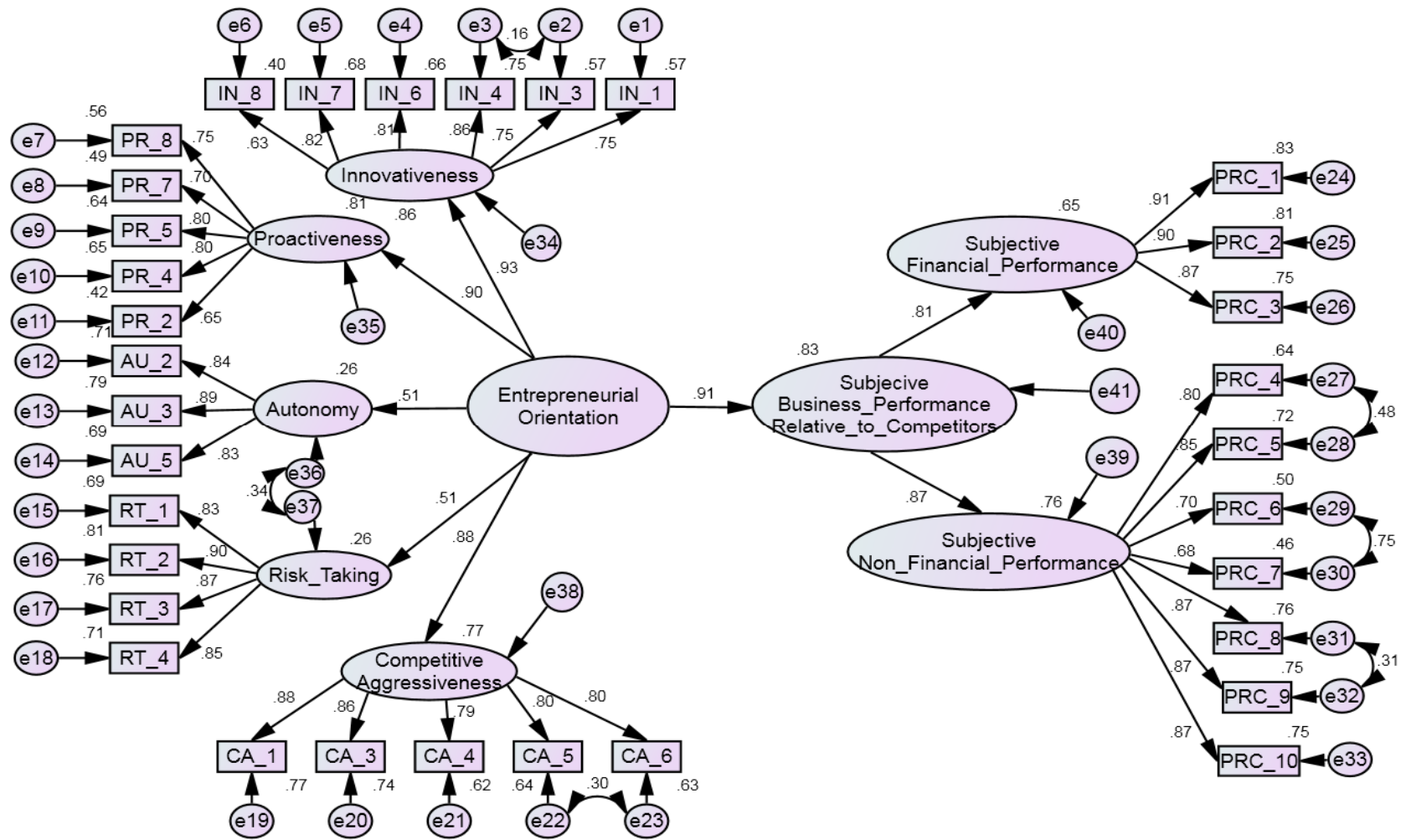


Figure 6.2 Structural Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Competitors

### **6.2.2: Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry**

To assess the measurement adequacy and inter relatedness of the latent construct of entrepreneurial orientation (uni-dimensional) and subjective business performance relative to industry, a measurement model (Figure 6.3) has been assessed. The measurement model has been examined for its fit, psychometric properties and inter-construct correlation.

The measurement model reveals a Normed Chi-square of 1.74 (786.36/450); GFI = 0.901; AGFI = 0.884; NFI = 0.934; CFI = .971; RMR = 0.061; RMSEA = 0.040, which were significant and reveal a good fit. Further low standardized residuals (Table 6.4) affirm the claim that the pattern of relationships stated in the specified model was similar to the pattern of relationships expressed by the data. Standardized factor loadings for all the scale items and latent constructs range from .517 to .923 (Table 6.4 and table 6.5), which meet the cut off of .50. An AVE score of .595 for entrepreneurial orientation and .698 for subjective business performance relative to industry affirms the convergent validity of these constructs. CR of 0.873 for entrepreneurial orientation and 0.822 for subjective business performance relative to industry confirm the internal consistency of the scale items.

The inter-relatedness of entrepreneurial orientation and subjective business performance relative to industry has been assessed through the significance of the covariance arrow. Measurement model reveals a critical ratio of 9.55 and correlation coefficient of 0.96 between entrepreneurial orientation and the subjective business performance relative to industry. These indices were significant ( $\alpha = 0.01$ ) and indicate high degree of positive correlation between these constructs.

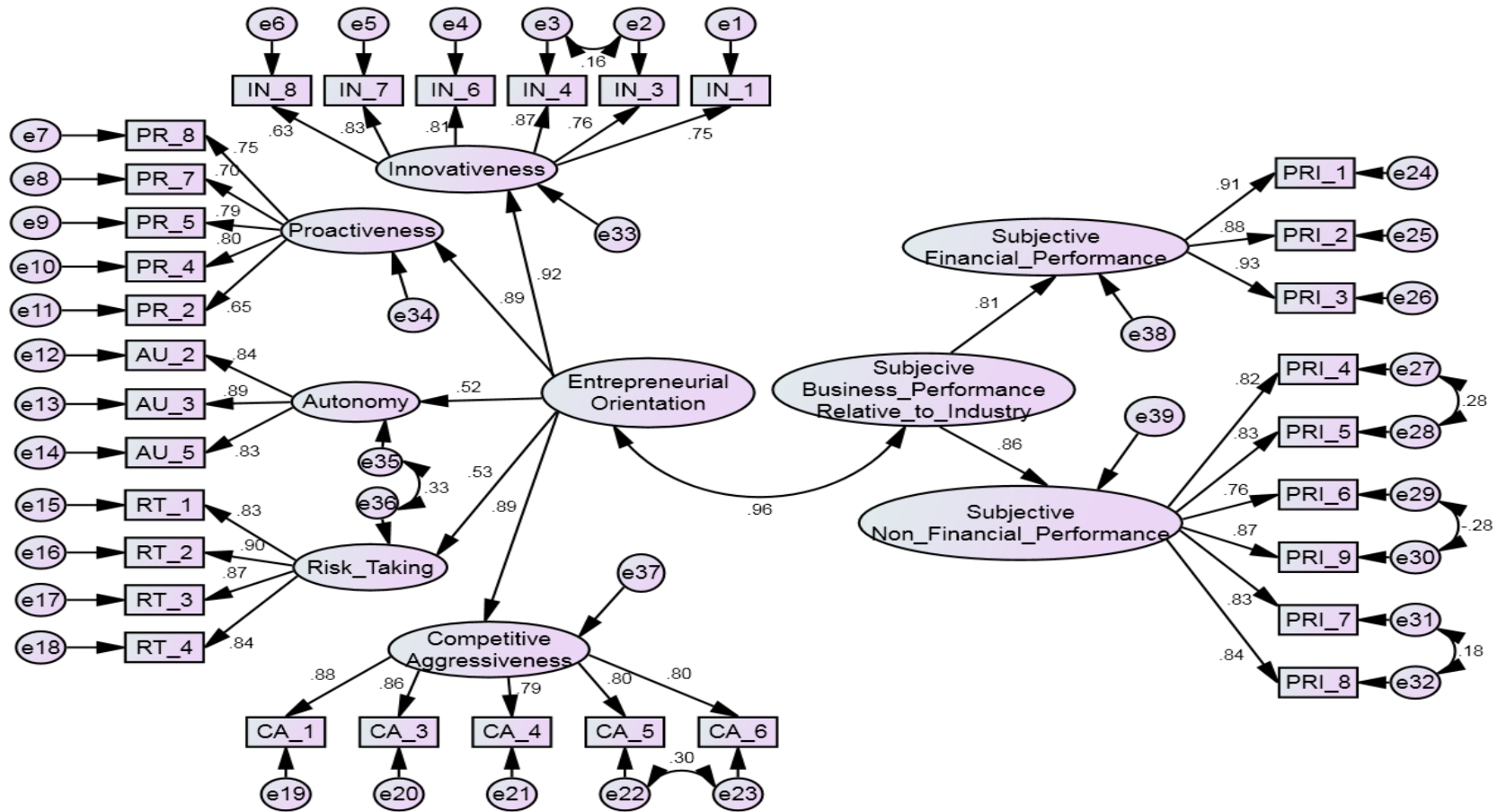


Figure 6.3 Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry

**Table 6.4 Standardized Factor Loadings and Residuals of Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry**

Item Code	SFL	Standardized Residual Covariances																																	
		PRI_8	PRI_7	PRI_9	PRI_6	PRI_5	PRI_4	PRI_3	PRI_2	PRI_1	AU_2	AU_3	AU_5	RT_1	RT_2	RT_3	RT_4	CA_1	CA_3	CA_4	CA_5	CA_6	PR_8	PR_7	PR_5	PR_4	PR_2	IN_1	IN_3	IN_4	IN_6	IN_7	IN_8		
PRI_8	0.841	0.0																																	
PRI_7	0.834	0.0	0.0																																
PRI_9	0.869	0.1	-0.4	0.0																															
PRI_6	0.756	0.1	-0.1	0.0	0.0																														
PRI_5	0.833	-0.5	-0.6	0.8	0.1	0.0																													
PRI_4	0.817	-0.3	0.1	0.4	-0.6	0.0	0.0																												
PRI_3	0.931	-0.3	1.4	-0.6	0.0	-0.5	0.5	0.0																											
PRI_2	0.883	-0.5	0.8	-0.9	-0.2	-0.2	0.6	0.0	0.0																										
PRI_1	0.91	0.2	1.0	-0.3	0.0	0.0	0.8	-0.1	0.1	0.0																									
AU_2	0.844	0.3	0.3	0.0	-0.4	1.0	0.9	0.2	0.2	0.3	0.0																								
AU_3	0.892	0.7	0.5	-0.5	0.0	0.3	0.2	0.3	0.1	0.3	-0.1	0.0																							
AU_5	0.831	-0.1	-0.5	-0.9	-0.3	-0.6	-0.8	-1.3	-1.3	-1.6	0.1	0.0	0.0																						
RT_1	0.828	1.0	1.8	1.6	0.4	1.2	1.3	1.7	0.6	0.9	0.1	0.5	-0.5	0.0																					
RT_2	0.898	0.2	0.9	0.6	0.1	0.6	1.5	1.2	0.7	0.9	-0.7	0.3	-0.4	0.0	0.0																				
RT_3	0.869	0.6	1.6	1.1	0.3	1.6	1.9	0.7	0.7	0.7	1.1	0.2	-0.4	0.3	-0.3	0.0																			
RT_4	0.845	-1.2	0.1	-1.2	-1.4	-0.5	0.4	0.7	0.2	0.4	-0.1	-0.1	-0.4	0.3	0.4	0.0	0.0																		
CA_1	0.881	0.1	1.1	-0.5	0.3	-0.1	0.3	1.0	0.3	0.4	0.4	0.4	-0.8	0.2	-0.4	-0.1	-0.9	0.0																	
CA_3	0.86	0.1	1.0	-1.0	-0.1	-1.7	-1.0	0.7	-0.1	-0.4	0.2	0.3	-0.2	0.1	-1.3	-0.9	-1.9	0.0	0.0																
CA_4	0.785	-0.8	0.0	-2.1	-0.5	-1.9	-1.5	-0.1	-0.3	-0.1	-1.0	0.1	-1.2	-1.1	-1.6	-0.9	-2.0	-0.2	-0.1	0.0															
CA_5	0.802	-1.0	0.4	-1.5	-0.5	-1.4	-0.9	0.4	0.5	0.2	0.1	0.1	-0.6	0.4	0.3	0.1	-0.8	-0.2	0.3	0.5	0.0														
CA_6	0.797	-0.9	0.1	-1.2	-0.3	-1.2	-0.9	0.4	-0.1	0.0	-0.4	0.0	-0.6	0.3	-0.4	-0.6	-1.6	-0.3	0.0	0.8	0.0	0.0													
PR_8	0.746	1.7	1.3	-1.0	0.9	0.1	-0.1	-1.2	-1.5	-1.5	-0.2	0.3	-0.1	0.4	-0.6	0.4	-1.6	0.5	-0.1	0.2	-0.6	-0.6	0.0												
PR_7	0.701	0.7	0.2	-1.3	1.0	-0.7	-0.2	-1.0	-0.7	-0.3	-0.8	-0.4	-1.5	0.3	-0.2	0.0	-1.2	0.4	-0.7	0.6	0.2	0.7	0.8	0.0											
PR_5	0.794	0.9	1.2	-0.2	0.3	0.8	0.9	-1.3	-1.4	-0.6	-1.4	-1.2	-2.2	-0.1	-0.6	0.5	-1.4	0.3	-0.3	0.3	-0.9	-0.2	0.4	0.4	0.0										
PR_4	0.804	1.9	2.1	0.1	2.5	1.1	0.9	0.3	-0.5	0.2	0.1	-0.1	-0.6	0.8	0.4	1.2	-0.4	0.9	-0.1	0.4	0.2	-0.1	-0.5	-0.2	0.2	0.0									
PR_2	0.651	1.6	1.8	0.3	0.6	0.1	0.4	0.9	-0.2	1.2	1.8	1.7	0.8	0.6	-0.3	0.3	-0.8	0.8	0.6	0.2	0.3	0.4	0.2	-0.5	-0.2	-0.8	0.0								
IN_1	0.752	0.3	1.3	-0.6	0.0	-0.8	-0.1	0.5	-0.5	-0.3	0.3	0.3	-0.4	2.1	1.2	1.7	1.3	-0.2	-0.3	-1.5	-0.7	-0.8	-1.7	-1.5	-0.8	-0.2	1.2	0.0							
IN_3	0.756	-0.6	1.8	-1.1	-0.5	-1.3	-1.2	0.7	-0.2	0.2	0.2	0.8	0.1	1.8	0.6	1.1	-0.8	0.4	1.2	-0.3	0.3	1.0	-0.1	0.2	-0.4	-0.4	1.4	0.5	0.0						
IN_4	0.867	0.5	2.2	-0.7	0.3	-0.7	-0.5	1.0	0.1	0.0	0.1	0.1	-0.5	0.5	-0.5	0.3	-1.2	0.5	0.5	-0.2	-0.6	0.2	-0.7	-0.2	-0.6	0.6	0.5	0.3	0.0	0.0					
IN_6	0.808	0.6	1.3	-0.5	-0.6	-1.3	-0.3	-0.4	-0.7	-1.0	0.4	0.3	0.7	0.4	-1.1	-0.4	-1.7	0.1	-0.2	0.5	-0.8	0.3	0.1	-0.3	-0.6	-0.1	0.3	0.5	-0.6	-0.3	0.0				
IN_7	0.825	0.4	0.9	-0.4	1.0	-0.5	-0.8	0.8	0.4	0.1	0.9	0.7	0.0	0.6	-0.6	0.5	-1.8	0.6	0.2	0.4	0.0	1.0	0.1	-0.2	-0.8	0.2	0.9	-0.6	-0.1	-0.1	0.3	0.0			
IN_8	0.63	0.1	1.9	-2.0	0.8	-1.4	-0.9	-0.2	-1.0	-0.3	1.6	2.0	1.4	-0.4	0.1	-0.1	-0.1	0.1	0.4	-0.2	-0.5	-0.6	-0.2	-1.3	-0.4	0.3	0.2	0.0	0.0	-0.2	0.8	-0.2	0.0		



**Table 6.5 Psychometric Properties of the Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry**

Parameter	Index	Construct	Dimension	Std. Factor Loading	AVE	CR
Chi-square	786.36	Entrepreneurial Orientation (Uni-dimensional)	Innovativeness	.923	.595	.873
Degree of Freedom	450		Proactiveness	.893		
Normed Chi-square (Chi-square/ df)	1.74		Risk Taking	.525		
GFI	.901		Competitive Aggressiveness	.886		
AGFI	.884		Autonomy	.517		
NFI	.934					
CFI	.971	Subjective Business Performance Relative to Industry	Subjective Financial Performance	.814	.698	.822
RMR	.061		Subjective Non-financial Performance	.857		
REMSA	.040					

The structural relationship between entrepreneurial orientation and subjective business performance relative to industry (Figure 6.4) has been assessed through a structural model. Entrepreneurial orientation has been considered as an exogenous variable and subjective business performance relative to industry has been defined as endogenous variable. The causal relationship between these constructs has been disclosed through a single headed arrow. The model fit indices have been assessed to examine the goodness of fit of the structural model. R square has been assessed to measure the degree of explained variance. Structural parameter estimate has been referred to measure the extent and significance of the contribution of the predictive variable towards the explained variance of the endogenous variable.

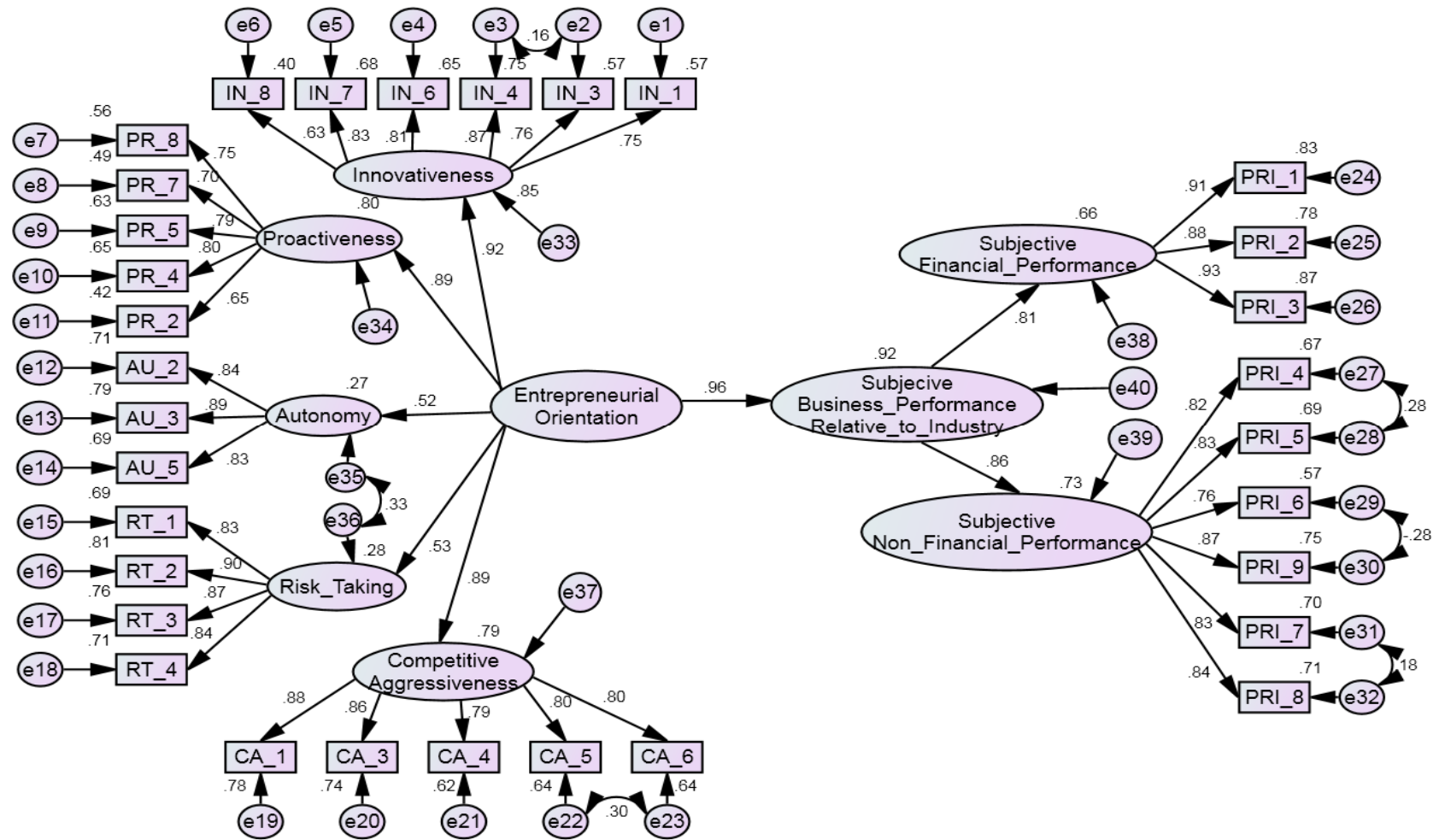


Figure 6.4 Structural Model for Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry

Structural model reveals a good model fit. All the indicators of model fit fall within the acceptance region. The ratio of Chi-square to df (786.36/450) = 1.74; GFI = 0.901; AGFI = 0.884; NFI = 0.934; CFI = 0.971; RMR = 0.061; and RMSEA = 0.040, were all significant and in line with the measurement model (Table 6.6). The assessment of the structural parameter estimate of the specified path (i.e. Entrepreneurial Orientation → Subjective Business Performance Relative to Industry) reveals a critical ratio of 12.19, which was much beyond the cut off of 1.96. The significant beta coefficient of the specified path affirms the positive and significant affect of the entrepreneurial orientation on the business performance. R square index of .921 affirms the significant role of entrepreneurial orientation in predicting business success.

**Table 6.6 Model Fit Indices and Path Coefficients of Entrepreneurial Orientation (Uni-dimensional) and Subjective Business Performance Relative to Industry**

Parameter	Measurement Model	Structural Model
Chi-square	786.36	786.36
Degree of Freedom	450	450
Normed Chi-square (Chi-square/ df)	1.74	1.74
GFI	.901	.901
AGFI	.884	.884
NFI	.934	.934
CFI	.971	.971
RMR	.061	.061
REMSA	.040	.040
Critical Ratio of Path (Entrepreneurial Orientation → Subjective Business Performance relative to Industry)		12.19**
Structural Parameter Estimates or Path Coefficients		0.961**
R- Square		0.92

\*\* Significant at .01 level

### **6.2.3: Entrepreneurial Orientation (Uni-dimensional) and Archival Business Performance**

To assess the measurement adequacy and inter relatedness of the latent construct of entrepreneurial orientation and archival business performance, a measurement model of these constructs has been assessed (Figure 6.5). Both constructs i.e. entrepreneurial orientation and archival business performance have been assumed as exogenous and non causal bidirectional relationships between these constructs have been studied by drawing

a double headed arrow between these construct.

The measurement model reveals a Chi-square statistic of 489.76 with 340 degrees of freedom i.e. a Normed Chi-square index of 1.44, which was much below the threshold of 3.0 and indicates a good fit. The values of RMR and RMSEA, badness of fit indices, have been observed as .075 and 0.041 respectively. These indices were well below the threshold of .08. GFI of 0.883 and AGFI of .860 were near to the conservative cut off of .90 (Joreskog and Sorbom, 1993; Hair *et al.*, 2008; Hooper *et al.*, 2008) but much beyond the progressive cut off of .80 (Brett and Drasgow, 2002; Kanste *et al.*, 2007; Horzum and Cakir, 2009; Herzog, 2011). Moving to the incremental fit indices, CFI of 0.965 and NFI 0.90 meet the criteria of .90. All these indices were adequate for the model fit. Further low standardized residuals (Table 6.7) indicate that the model specified in theory reproduces itself through observed data and there is no significant difference between the estimated covariance matrix and observed covariance matrix.

Convergent Validity of the constructs of entrepreneurial orientation and archival business performance has been assessed through standardized factor loadings, AVE and CR. Table 6.8 reveals that all the standardized factor loadings for all the constructs were above the threshold of .50. High score of AVE for entrepreneurial orientation (i.e. 0.59) and archival business performance (i.e. 0.54) support the measurement adequacy and convergence of scale items towards their latent constructs. CR of .87 for entrepreneurial orientation and 0.70 for archival business performance meets the criteria of .70, suggesting adequate internal reliability.

The inter-relatedness of the constructs of entrepreneurial orientation and archival business performance has been examined through the critical ratio and the degree of coefficient of correlation. Measurement model has produced a critical ratio of 3.068 and correlation coefficient of .403 between entrepreneurial orientation and archival business performance. Both of these indices remain significant at 1% level and support the inter-relatedness of the underlying constructs.

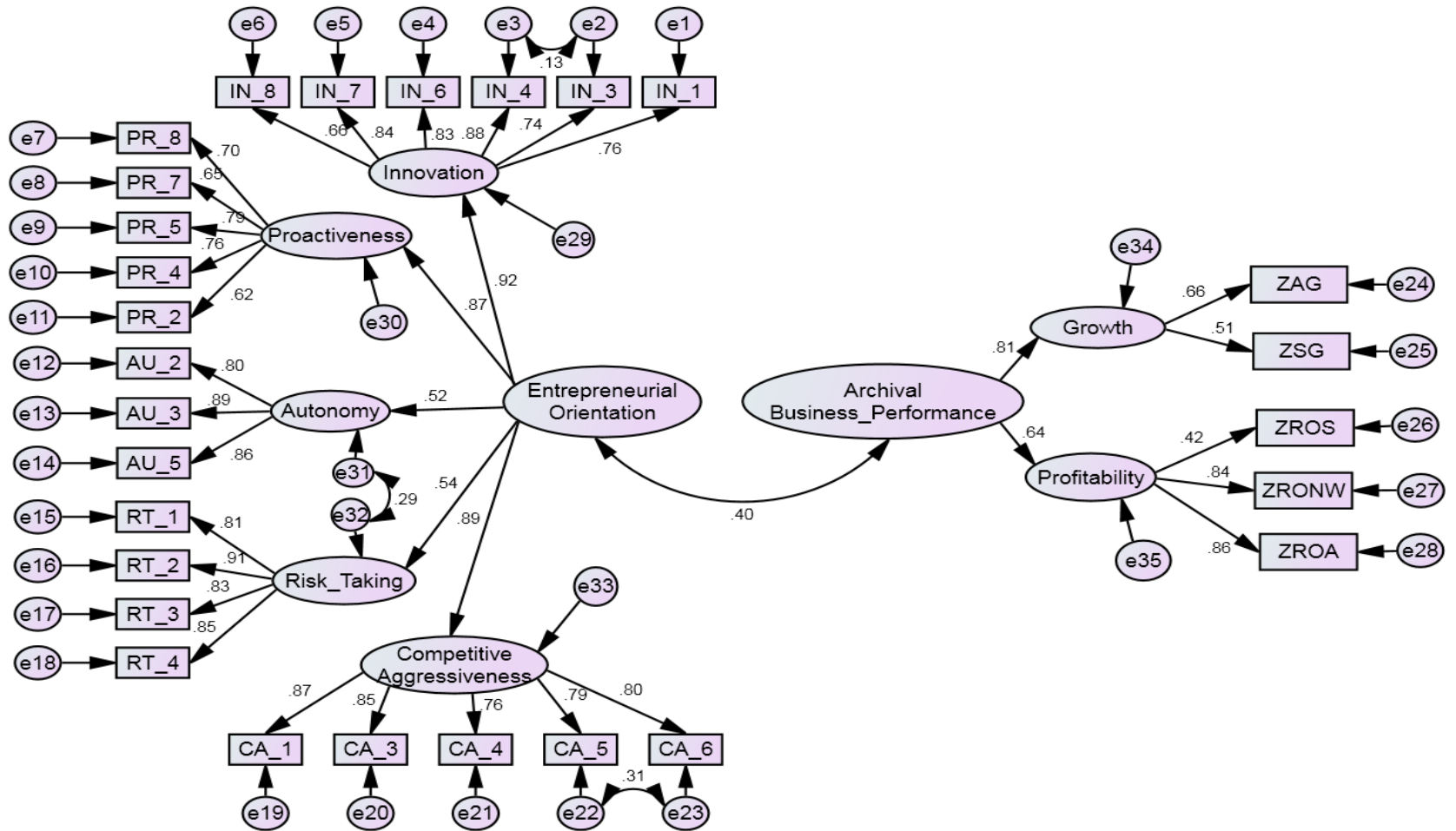


Figure 6.5 Measurement Model for Entrepreneurial Orientation (Uni-dimensional) and Archival Business Performance

**Table 6.7 Standardized Factor Loadings and Residuals of Measurement Model of Entrepreneurial Orientation (Uni-dimensional) and Archival Business Performance**

Item Code	SFL	Standardized Residual Covariances																											
		ZROA	ZRONW	ZROS	ZSG	ZAG	AU_2	AU_3	AU_5	RT_1	RT_2	RT_3	RT_4	CA_1	CA_3	CA_4	CA_5	CA_6	PR_8	PR_7	PR_5	PR_4	PR_2	IN_1	IN_3	IN_4	IN_6	IN_7	IN_8
ZROA	0.858	0.0																											
ZRONW	0.839	0.0	0.0																										
ZROS	0.419	-0.2	0.3	0.0																									
ZSG	0.513	-0.7	-0.5	0.7	0.0																								
ZAG	0.656	0.7	0.0	-0.9	0.0	0.0																							
AU_2	0.804	0.6	0.5	1.4	0.7	0.0	0.0																						
AU_3	0.888	1.3	1.2	1.6	0.6	-0.9	-0.1	0.0																					
AU_5	0.863	0.7	0.8	2.1	1.0	-0.2	0.1	0.0	0.0																				
RT_1	0.806	2.2	1.4	0.5	0.7	-0.5	0.3	1.6	0.3	0.0																			
RT_2	0.907	1.2	0.7	0.4	0.0	-0.5	-0.2	0.1	-1.0	-0.1	0.0																		
RT_3	0.834	1.4	0.3	0.7	-0.3	-0.8	0.8	0.1	0.6	0.4	-0.2	0.0																	
RT_4	0.848	1.0	0.6	0.2	0.1	-0.8	-0.7	-0.1	-0.8	-0.4	0.3	0.0	0.0																
CA_1	0.874	0.0	-0.2	-1.3	1.5	-1.1	0.0	-0.3	-0.8	0.9	0.1	-0.4	-0.3	0.0															
CA_3	0.846	-0.4	-0.5	-2.0	2.1	0.1	0.2	0.3	0.1	0.6	-1.2	-1.0	-1.4	0.0	0.0														
CA_4	0.759	-0.3	-0.7	-0.5	0.8	0.3	-1.3	-0.7	-0.6	-0.2	-1.0	-0.8	-1.2	-0.3	-0.1	0.0													
CA_5	0.789	-0.2	-0.4	-2.1	0.8	-1.0	0.7	-0.3	-0.1	0.7	0.3	-0.1	-0.3	-0.1	0.4	0.1	0.0												
CA_6	0.798	-0.9	-0.4	-1.9	0.9	-1.0	-0.4	-0.1	-0.2	0.9	0.0	-0.5	-0.5	-0.1	0.0	0.3	0.0	0.0											
PR_8	0.698	-0.4	-1.5	-2.2	-0.1	-0.6	-0.5	-0.2	0.0	0.1	-0.9	-0.1	-1.7	-0.1	-0.3	0.4	-0.7	-0.3	0.0										
PR_7	0.65	0.2	0.8	-0.5	-0.2	0.3	-0.2	-0.9	-0.7	0.2	-0.1	-0.4	-1.1	-0.1	-0.9	0.5	0.5	1.1	0.9	0.0									
PR_5	0.788	-1.3	-0.9	-1.7	0.7	-1.5	-1.5	-1.4	-1.5	0.7	0.0	0.6	-0.6	0.3	-0.3	0.5	-0.8	-0.1	0.6	0.0	0.0								
PR_4	0.764	0.3	-0.1	0.2	0.8	-1.5	0.3	-0.1	-0.3	1.2	0.9	1.7	0.7	1.1	-0.1	1.3	0.1	-0.1	-0.8	0.0	0.2	0.0							
PR_2	0.619	1.3	1.3	0.4	0.8	-0.5	0.8	1.0	0.7	1.0	0.2	0.7	0.5	0.8	1.0	0.8	0.7	0.0	0.4	-0.3	-0.2	-0.9	0.0						
IN_1	0.756	0.4	-0.1	-1.1	1.3	-0.9	0.2	-0.3	-0.7	1.8	0.3	0.8	0.9	-0.2	-0.5	-1.4	-0.7	-1.0	-1.3	-1.5	-0.6	0.6	1.1	0.0					
IN_3	0.742	1.5	1.5	-0.2	0.8	0.6	0.9	1.0	0.4	2.2	1.0	1.2	0.0	0.1	0.7	-0.4	0.3	0.5	-0.4	-0.7	-0.3	-0.6	2.0	0.6	0.0				
IN_4	0.875	1.0	0.5	-0.6	1.3	-0.5	0.8	0.6	0.9	1.2	0.5	0.2	-0.1	0.3	-0.2	-0.2	-0.7	-0.1	-0.9	-0.4	-0.2	1.1	0.2	0.5	0.0	0.0			
IN_6	0.826	0.1	0.1	-0.6	0.7	1.2	-0.1	0.0	0.5	0.5	-1.1	-0.8	-1.4	0.2	-0.5	0.7	-0.6	0.0	-0.2	-0.2	-0.6	0.1	0.0	0.2	-0.6	-0.2	0.0		
IN_7	0.836	-0.8	-0.5	-1.9	0.7	-1.0	0.5	0.3	0.3	0.7	-0.2	0.1	-1.1	0.6	0.0	0.8	0.1	0.5	0.3	0.1	-0.3	0.4	0.6	-0.5	-0.2	-0.2	0.4	0.0	
IN_8	0.663	1.0	1.1	0.2	-0.8	-0.7	0.8	1.3	0.3	-0.2	0.1	-0.2	0.1	0.0	-0.2	0.2	-0.9	-0.8	-0.9	-1.2	-0.9	0.7	0.3	-0.5	0.2	0.1	0.3	0.0	0.0

**Table 6.8 Psychometric Properties of the Measurement Model for Entrepreneurial orientation (Uni-dimensional) and Archival Business Performance**

Parameter	Index	Construct	Dimension	Std. Factor Loading	AVE	CR
Chi-square	489.76	Entrepreneurial Orientation (Uni-dimensional)	Innovativeness	.916	.59	.87
Degree of Freedom	340		Proactiveness	.872		
Normed Chi-square (Chi-square/ df)	1.44		Risk Taking	.541		
GFI	.883		Competitive Aggressiveness	.889		
AGFI	.860		Autonomy	.520		
NFI	.90					
CFI	.965	Archival Business Performance	Growth	.811	.54	.70
RMR	.074		Profitability	.645		
REMSA	.041					

The causal relationship between exogenous construct of entrepreneurial orientation and endogenous construct of archival business performance has been studied by employing structural equation modeling with path analysis (Figure 6.6). In the path diagram the structural relationship between the exogenous construct of entrepreneurial orientation and endogenous construct of archival business performance has been reflected through a single headed arrow (i.e. Entrepreneurial Orientation → Archival Business Performance). Structural relationship has been examined for model fit, the extent of the explained variance and the significance of the predictor in the observed relationship.

The result of structural model reveals a good fit. All the fit indices were not only significant but also in line with the measurement model (Table 6.9). The critical ratio of 3.21 for the path Entrepreneurial Orientation → Archival Business Performance was significant at  $\alpha = 0.01$  and support the positive impact of entrepreneurial orientation on the performance of a firm (Table 6.9). The strength of the dependency relationship between Entrepreneurial Orientation → Archival Business Performances (R square of .163) has been observed as significant but low.

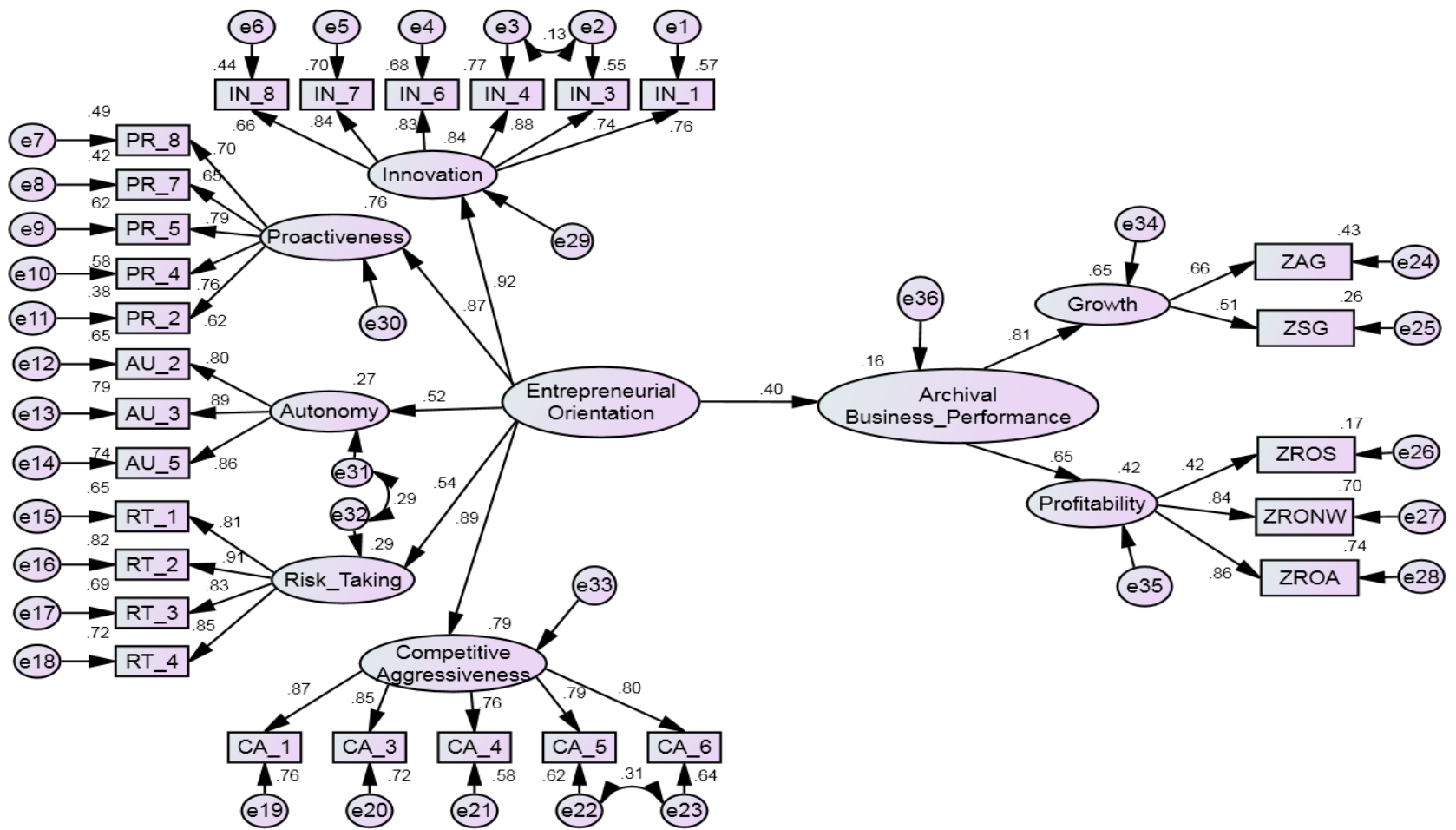


Figure 6.6 Structural Model for Entrepreneurial Orientation (Uni-dimensional) and Archival Business Performance



**Table 6.9 Model Fit Indices and Path Coefficients of Entrepreneurial Orientation (Uni-dimensional) and Archival Business Performance**

Parameter	Measurement Model	Structural Model
Chi-square	489.76	489.76
Degree of Freedom	340	340
Normed Chi-square (Chi-square/ df)	1.44	1.44
GFI	.883	.883
AGFI	.860	.860
NFI	.90	.90
CFI	.965	.965
RMR	.074	.075
REMSA	.041	.041
Critical Ratio of Path (Entrepreneurial Orientation → Archival Business Performance)		3.21**
Structural Parameter Estimates or Path Coefficients		0.404**
R- Square		0.163

\*\* Significant at .01 level

#### **6.2.4: Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors**

To assess the measurement adequacy and inter relatedness of the latent construct of entrepreneurial orientation (multi-dimensional) and subjective business performance relative to competitors, a measurement model (Figure 6.7) has been assessed.

The measurement model reveals a Normed Chi-square index of 1.69, GFI = 0.903, AGFI = 0.884, CFI = 0.973, NFI = 0.937, RMR = 0.059, RMSEA = 0.039 and standardized residuals of less than 2.5 (Table 6.10). All these indices were significant and specify a good model fit. Standardized factor loadings for all the scale items exceed the 50 percent rule of thumb (Table 6.10) and remain significant at 1% level. The high indices of standardized factor loadings prove the appropriateness and representativeness of the manifest variables in measuring the underlying constructs. High score of AVE and CR (Table 6.11) proves the convergent validity of these constructs and affirms the positive correlation among the scale items of respective constructs.

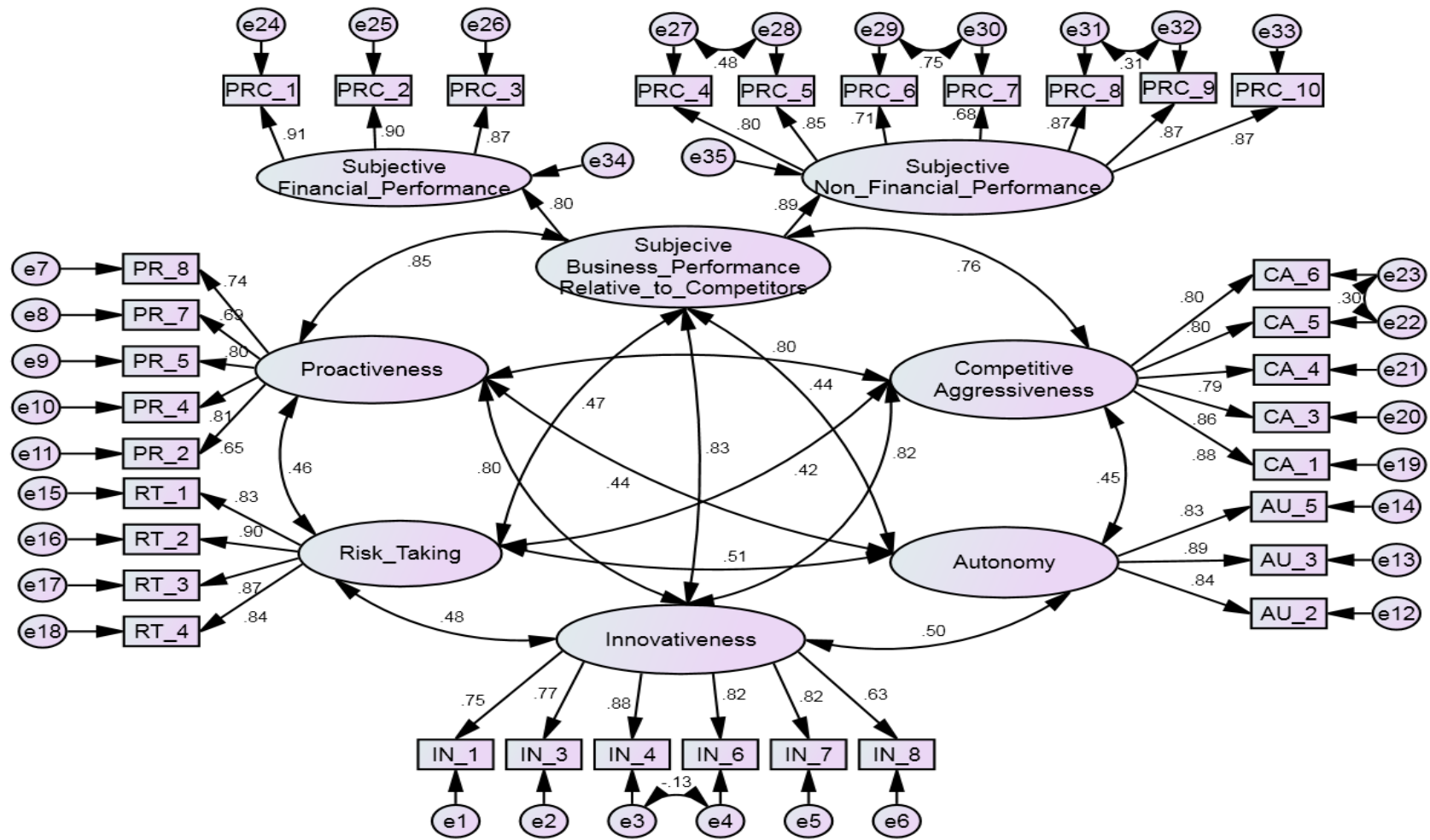


Figure 6.7 Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors

**Table 6.10 Standardized Factor Loadings and Residuals of Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors**

Item Code	SFL	Standardized Residual Covariances																																				
		PRC_10	PRC_9	PRC_8	PRC_7	PRC_6	PRC_5	PRC_4	PRC_3	PRC_2	PRC_1	AU_2	AU_3	AU_5	RT_1	RT_2	RT_3	RT_4	CA_1	CA_3	CA_4	CA_5	CA_6	PR_8	PR_7	PR_5	PR_4	PR_2	IN_1	IN_3	IN_4	IN_6	IN_7	IN_8				
PRC_10	0.86	0.0																																				
PRC_9	0.87	0.0	0.0																																			
PRC_8	0.87	0.2	0.0	0.0																																		
PRC_7	0.68	-1.0	0.3	0.1	0.0																																	
PRC_6	0.70	-1.1	0.0	-0.2	0.0	0.0																																
PRC_5	0.85	0.6	-0.2	-0.4	-0.1	0.5	0.0																															
PRC_4	0.80	0.6	-0.3	-0.3	-0.2	0.1	0.0	0.0																														
PRC_3	0.86	0.0	0.1	0.1	1.0	1.2	0.4	1.1	0.0																													
PRC_2	0.89	-1.1	-0.5	-0.5	0.8	1.2	-0.3	0.4	0.1	0.0																												
PRC_1	0.91	-0.5	0.1	-0.1	0.8	1.7	0.1	0.7	-0.1	0.1	0.0																											
AU_2	0.84	-0.3	0.3	0.9	0.3	0.4	0.3	1.4	0.8	0.4	0.7	0.0																										
AU_3	0.89	-0.5	0.0	0.4	0.9	0.6	-0.8	-0.1	0.0	0.2	0.5	-0.1	0.0																									
AU_5	0.83	-0.7	-0.3	0.0	0.0	-0.3	-1.4	-0.5	-0.3	-0.9	-0.3	0.1	0.0	0.0																								
RT_1	0.82	0.2	0.5	1.1	1.4	0.9	-0.4	0.6	0.4	0.9	0.6	0.1	0.5	-0.5	0.0																							
RT_2	0.89	-0.5	-0.5	-0.3	-0.8	-0.5	-1.2	-0.5	0.2	0.3	0.6	-0.7	0.3	-0.4	0.0	0.0																						
RT_3	0.87	0.7	0.7	1.2	1.1	1.1	0.5	1.1	0.1	0.2	0.5	1.1	0.2	-0.4	0.3	-0.3	0.0																					
RT_4	0.84	-1.7	-1.9	-1.0	-0.8	-1.0	-1.9	-1.2	-0.6	0.5	0.6	-0.1	-0.1	-0.4	-0.5	0.4	0.0	0.0																				
CA_1	0.87	-0.1	0.8	0.8	1.3	1.2	-0.3	-0.7	1.1	0.6	1.7	0.6	0.5	-0.7	0.9	0.4	0.7	-0.2	0.0																			
CA_3	0.86	0.0	0.1	0.5	0.5	0.4	-1.4	-1.1	1.1	0.5	0.9	0.2	0.4	-0.2	0.7	-0.6	-0.2	-1.3	0.0	0.0																		
CA_4	0.78	-1.4	-0.9	-1.0	0.3	0.2	-2.0	-2.0	0.7	0.3	0.1	-1.0	0.2	-1.2	-0.5	-0.9	-0.3	-1.5	-0.2	-0.2	0.0																	
CA_5	0.79	-1.2	-0.9	-0.4	-0.5	-0.6	-1.5	-1.4	0.5	0.0	0.6	0.2	0.2	-0.5	1.1	1.0	0.8	-0.1	-0.1	0.3	0.5	0.0																
CA_6	0.79	-0.5	-0.8	-0.9	0.7	0.0	-1.8	-1.7	0.8	0.2	0.3	-0.4	0.1	-0.5	0.9	0.3	0.0	-1.0	-0.3	0.0	0.7	0.0	0.0															
PR_8	0.74	-1.4	0.6	-0.1	1.1	1.1	-0.5	-0.8	-1.0	-1.8	-1.0	0.2	0.7	0.3	0.5	-0.5	0.5	-1.5	0.4	-0.2	0.0	-0.7	-0.7	0.0														
PR_7	0.69	-1.9	-0.5	-1.4	0.6	0.9	-1.0	-1.7	-1.3	-1.1	-0.9	-0.4	0.0	-1.1	0.5	0.0	0.2	-1.1	0.3	-0.8	0.5	0.2	0.7	1.0	0.0													
PR_5	0.80	0.2	1.3	0.4	1.3	1.2	0.9	0.4	-1.0	-1.4	-0.7	-1.1	-0.8	-1.9	-0.1	-0.5	0.5	-1.3	0.1	-0.5	0.1	-1.1	-0.4	0.4	0.4	0.0												
PR_4	0.80	0.3	1.5	1.2	2.1	2.6	0.7	0.0	0.0	-0.2	0.3	0.5	0.3	-0.2	0.9	0.4	1.2	-0.3	0.7	-0.4	0.2	0.0	-0.2	-0.4	-0.1	0.0	0.0											
PR_2	0.64	-0.2	1.1	0.6	1.5	0.9	0.4	0.4	1.1	0.6	1.0	2.1	2.0	1.1	0.7	-0.2	0.4	-0.7	0.7	0.5	0.0	0.2	0.3	0.3	-0.4	-0.3	-0.8	0.0										
IN_1	0.75	0.1	-0.1	1.2	0.2	0.7	-0.8	-0.1	0.4	0.5	0.4	0.0	0.0	-0.7	2.2	1.2	1.8	1.4	-0.2	-0.4	-1.6	-0.7	-0.9	-1.4	-1.2	-0.7	0.0	1.4	0.0									
IN_3	0.76	-1.1	-0.9	0.9	0.6	0.0	-1.8	-1.4	0.4	0.3	0.2	-0.2	0.4	-0.3	1.8	0.5	1.1	-0.8	0.2	0.9	-0.5	0.2	0.8	0.0	0.3	-0.4	-0.4	1.5	0.3	0.0								
IN_4	0.88	-0.5	-0.2	0.6	0.7	0.5	-1.1	-1.0	0.6	0.0	0.5	-0.3	-0.3	-0.9	0.5	-0.5	0.3	-1.2	0.3	0.2	-0.4	-0.8	-0.1	-0.5	0.0	-0.5	0.7	0.6	0.1	0.5	0.0							
IN_6	0.81	0.1	0.3	0.8	1.0	0.7	-0.6	-0.4	0.6	-0.5	-0.4	0.0	-0.1	0.3	0.4	-1.1	-0.4	-1.7	0.0	-0.3	0.3	-1.0	0.1	0.3	-0.1	-0.5	0.0	0.5	0.4	-0.9	0.0	0.0						
IN_7	0.81	-0.8	0.1	-0.1	1.1	1.7	-0.9	-0.9	1.6	0.8	1.1	0.7	0.4	-0.2	0.8	-0.5	0.6	-1.7	0.7	0.2	0.4	0.0	1.1	0.5	0.2	-0.5	0.5	1.2	-0.5	-0.2	-0.2	0.3	0.0					
IN_8	0.62	-1.0	0.2	1.2	0.8	1.0	-1.7	-1.1	-1.0	-0.7	-0.6	1.4	1.8	1.1	-0.3	0.2	0.0	0.0	0.1	0.4	-0.3	-0.5	-0.6	0.1	-1.0	-0.2	0.5	0.4	0.0	-0.2	-0.3	0.7	-0.1	0.0				

**Table 6.11 Psychometric Properties of the Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors**

Parameter	Index	Construct	Dimension	AVE	CR
Chi-square	800.66	Entrepreneurial Orientation (Multi-dimensional)	Innovativeness	.61	.90
Degree of Freedom	473				
Normed Chi-square (Chi-square/ df)	1.69		Proactiveness	.55	.86
GFI	.903		Risk Taking	.74	.92
AGFI	.884		Competitive Aggressiveness	.68	.91
NFI	.937		Autonomy	.73	.89
CFI	.973		Subjective Business Performance Relative to Competitors	Subjective Financial Performance	.71
RMR	.059	Subjective Non-financial Performance			
REMSA	.039				

Divergent validity of different dimensions of entrepreneurial orientation i.e. innovativeness, proactiveness, risk taking, autonomy and competitive aggressiveness has been assessed by comparing the shared variance (squared correlation) between each pair of constructs against the minimum of the AVEs for the respective constructs (Fornell and Larcker, 1981; Hair *et al.*, 2008). The inter-construct correlation has been computed by considering the summated score of the validated constructs of innovativeness, proactiveness, risk taking, autonomy and competitive aggressiveness. Table 6.12 reveals that AVE for all the constructs was higher than their squared correlation, which affirms the uniqueness of the each dimension of entrepreneurial orientation.

**Table 6.12 Assessment of Divergent Validity**

	<b>Autonomy</b>	<b>Competitive Aggressiveness</b>	<b>Innovativeness</b>	<b>Proactiveness</b>	<b>Risk Taking</b>
<b>AVE</b>	.73	.68	.61	.55	.74
<b>Squared Correlation</b>					
<b>Autonomy</b>	1.00	0.16	0.21	0.15	0.21
<b>Competitive Aggressiveness</b>	0.16	1.00	0.54	0.50	0.15
<b>Innovativeness</b>	0.21	0.54	1.00	0.51	0.20
<b>Proactiveness</b>	0.15	0.50	0.51	1.00	0.17
<b>Risk Taking</b>	0.21	0.15	0.20	0.17	1.00

Though Figure 6.7 reveals a high degree of inter-relatedness among the different constructs of interest but the significance of the inter-relatedness of these constructs has been assessed through the critical ratios (of the coefficient of correlation). Table 6.13 reveals that all the statistics of the critical ratios for correlation coefficients were much beyond the cut-off of 2.58, at 1% level of significance. These high indices of critical ratios affirm the significance of the inter construct correlation.

**Table 6.13 Critical ratios for the Coefficients of Correlation**

<b>Constructs</b>	<b>Autonomy</b>	<b>Competitive Aggressiveness</b>	<b>Innovativeness</b>	<b>Proactiveness</b>	<b>Risk Taking</b>	<b>Subjective Business Performance</b>
<b>Autonomy</b>	1	7.62**	7.60**	6.84**	8.50**	7.05**
<b>Competitive Aggressiveness</b>	7.62**	1	9.69**	9.64**	7.29**	10.05**
<b>Innovativeness</b>	7.60**	9.69**	1	8.75**	7.52**	9.39**
<b>Proactiveness</b>	6.84**	9.64**	8.75**	1	7.29**	9.40**
<b>Risk Taking</b>	8.50**	7.29**	7.52**	7.29**	1	7.52**
<b>Subjective Business Performance</b>	7.05**	10.05**	9.39**	9.40**	7.52**	1

\*\* Significant at 1% level

To measure the importance and impact of multi-dimensional view of entrepreneurial orientation on subjective business performance, structure equation modeling has been employed. The dimensions of innovativeness, proactiveness, risk taking, autonomy and competitive aggressiveness have been assumed as exogenous variables and their impact

on the endogenous variable i.e. subjective business performance relative to competitors has been examined by drawing single headed arrows from exogenous variables to endogenous variable (Figure 6.8). Structural model has been examined for model fit, statistical significance of path coefficients and the amount of explained variance.

The structural model reveals a Normed Chi-square of 1.68; GFI = 0.903; AGFI = 0.885; NFI = 0.937; CFI = 0.973; RMR = 0.059; and RMSEA = 0.039. Table 6.14 reveals that all the model fit indices for structural model were not only significant but remain same as in the measurement model. High index of R square (i.e. 0.79) justifies the underlying theoretical model and affirms the claim that the performance of a business is significantly impacted by the kind of strategic posture adopted by a firm. Path coefficients are significant for innovativeness (critical ratio of 4.68) and proactiveness (critical ratio of 5.32). The contribution of the other dimensions of entrepreneurial orientation, as drivers of business performance, is not significant (Table 6.22).

**Table 6.14 Model Fit Indices and Path Coefficients of Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors**

Parameter	Measurement Model	Structural Model
Chi-square	800.66	796.19
Degree of Freedom	473	473
Normed Chi-square (Chi-square/ df)	1.69	1.68
GFI	.903	.903
AGFI	.884	.885
NFI	.937	.937
CFI	.973	.973
RMR	.059	.059
REMSA	.039	.039
Path Analysis		
R- Square	0.79	
Path Details	Critical Ratio	Path Coefficients
Innovativeness→ Subjective Business Performance Relative to Competitors	4.68**	.43**
Proactiveness→ Subjective Business Performance Relative to Competitors	5.32**	.49**
Risk Taking→ Subjective Business Performance Relative to Competitors	.97	.04
Competitive Aggressiveness→ Subjective Business Performance Relative to Competitors	-.10	-.01
Autonomy→ Subjective Business Performance Relative to Competitors	-.22	-.01

\*\* Significant at .01 level

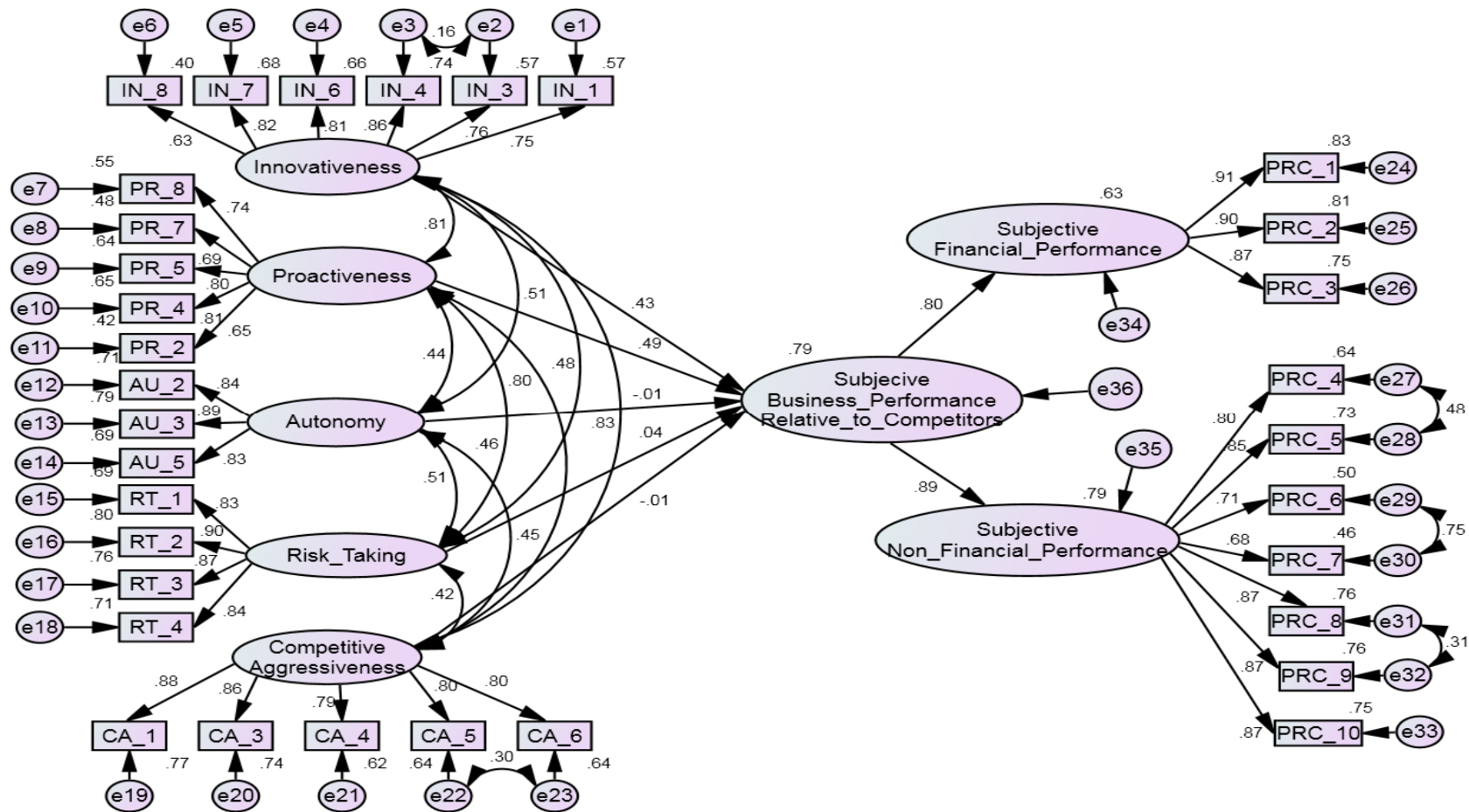


Figure 6.8 Structural Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Competitors

### **6.2.5: Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry**

To assess the impact of innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy on the subjective business performance relative to industry, structural equation modeling has been employed and a measurement model of these constructs has been assessed. Figure 6.9 reveals that reflective indicators has been used for the measurement of latent constructs and non-causal relationship has been studied among different constructs, by drawing double headed arrows.

The measurement model reveals a Normed Chi-square of 1.75; GFI = 0.903; AGFI = 0.884; NFI = 0.935; CFI = 0.971; RMR = 0.057; and RMSEA = 0.031, which were all significant. Standardized residuals were much below the threshold of 2.5 (Table 6.23) and affirms the claim that the pattern of relationships stated in the specified model was similar to the pattern of relationships expressed by the data. The convergent validity of the various constructs has been assessed through standardized factor loadings, AVE and CR. The standardized factor loadings for all the scale items were not only significant at 1% level (Table 6.15) but these high indices of standardized factor loadings also confirm the convergence of the scale items toward the underlying theoretical constructs. AVE scores for all the constructs range from 55 percent to 74 percent, which indicate that the measures were not contaminated with error variance. CR for all the constructs has been observed high and meets the cut-off of 70 percent (Table 6.16).



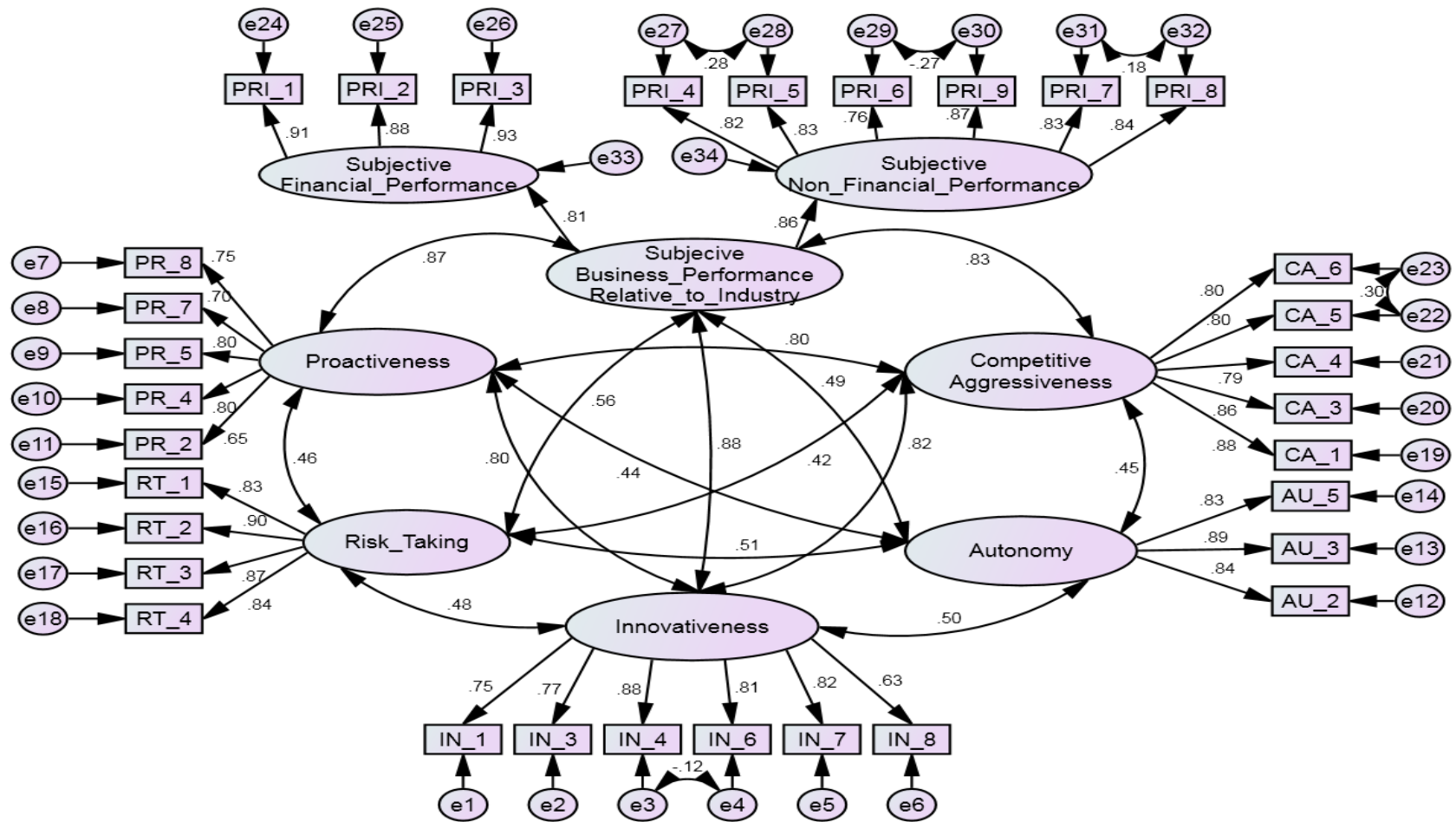


Figure 6.9 Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry



**Table 6.16 Psychometric Properties of the Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry**

Parameter	Index	Construct	Dimension	AVE	CR	
Chi-square	774.17	Entrepreneurial Orientation (Multi-dimensional)	Innovativeness	.61	.90	
Degree of Freedom	442		Proactiveness	.55	.86	
Normed Chi-square (Chi-square/ df)	1.75		Risk Taking	.74	.92	
GFI	.903		Competitive Aggressiveness	.68	.91	
AGFI	.884		Autonomy	.73	.89	
NFI	.935		Subjective Business Performance relative to Industry	Subjective Financial Performance	.70	.82
CFI	.971			Subjective Non- financial Performance		
RMR	.057					
REMSA	.041					

The divergent validity of the different dimensions of entrepreneurial orientation has been assessed by comparing the AVE values with the squared correlation. Squared correlation between the different dimensions of entrepreneurial orientation i.e. innovativeness, risk taking, proactiveness, autonomy and competitive aggressiveness have been calculated by considering the summated score of these constructs. Table 6.17 reveals that AVE scores for each construct have a value higher than the squared correlation (for each pair of constructs), which affirms the divergent validity of different constructs.

**Table 6.17 Assessment of Divergent Validity**

	<b>Autonomy</b>	<b>Competitive Aggressiveness</b>	<b>Innovativeness</b>	<b>Proactiveness</b>	<b>Risk Taking</b>
<b>AVE</b>	.73	.68	.61	.55	.74
<b>Squared Correlation</b>					
<b>Autonomy</b>	1.00	0.16	0.21	0.15	0.21
<b>Competitive Aggressiveness</b>	0.16	1.00	0.54	0.50	0.15
<b>Innovativeness</b>	0.21	0.54	1.00	0.51	0.20
<b>Proactiveness</b>	0.15	0.50	0.51	1.00	0.17
<b>Risk Taking</b>	0.21	0.15	0.20	0.17	1.00

The significance of inter-relatedness of the various constructs has been assessed through the critical ratios of the correlation coefficients. Table 6.18 reveals that all the indices of the critical ratios of correlation coefficients meet the cut off of 2.58 and were significant at 1% level.

**Table 6.18 Critical ratios for the Coefficients of Correlation**

<b>Constructs</b>	<b>Autonomy</b>	<b>Competitive Aggressiveness</b>	<b>Innovativeness</b>	<b>Proactiveness</b>	<b>Risk Taking</b>	<b>Subjective Business Performance</b>
<b>Autonomy</b>	1	7.62**	7.60**	6.85**	8.50**	7.56**
<b>Competitive Aggressiveness</b>	7.62**	1	9.68**	9.63**	7.29**	10.45**
<b>Innovativeness</b>	7.60**	9.68**	1	8.74**	7.52**	9.52**
<b>Proactiveness</b>	6.85**	9.63**	8.74**	1	7.28**	9.41**
<b>Risk Taking</b>	8.50**	7.29**	7.52**	7.28**	1	8.43**
<b>Subjective Business Performance</b>	7.56**	10.45**	9.52**	9.41**	8.43**	1

\*\* Significant at 1% level

After the assessment of the different facets of measurement model, structural model has been assessed for the dependency relationship. Figure 6.10 shows that in the structural model, the construct of innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy have been taken as exogenous variables, whereas

subjective business performance relative to industry has been considered as endogenous variable. The causal relationship between the exogenous and endogenous variables has been reflected through one headed arrows in path diagram.

The structural model reveals a good model fit (Table 6.19). All model fit indices were significant and remain very close to the model fit indices of measurement model. The path coefficients of the dimensions of innovativeness, proactiveness, risk taking and competitive aggressiveness turn significant (Table 6.19). The causal relationship between Autonomy→Subjective Business Performances Relative to Industry is insignificant. The explained variance of 87 percent in endogenous variables by the all exogenous variables affirms the goodness of model and confirms the significant effect of entrepreneurial orientation on business performance.

**Table 6.19 Model Fit Indices and Path Coefficients of Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry**

Parameter	Measurement Model	Structural Model
Chi-square	774.17	770.13
Degree of Freedom	442	442
Normed Chi-square (Chi-square/ df)	1.75	1.74
GFI	.903	.903
AGFI	.884	.884
NFI	.935	.936
CFI	.971	.971
RMR	.057	.057
REMSA	.041	.040
Path Analysis		
R- Square	0.87	
Path Details	Critical Ratio	Path Coefficients
Innovativeness→Subjective Business Performance Relative to Industry	4.73**	.40**
Proactiveness→ Subjective Business Performance Relative to Industry	4.26**	.35**
Risk Taking→ Subjective Business Performance Relative to Industry	3.29**	.14**
Competitive Aggressiveness→ Subjective Business Performance Relative to Industry	2.15*	.17*
Autonomy→ Subjective Business Performance Relative to Industry	-.34	-.01

\*\* Significant at .01 level, \* Significant at .05 level

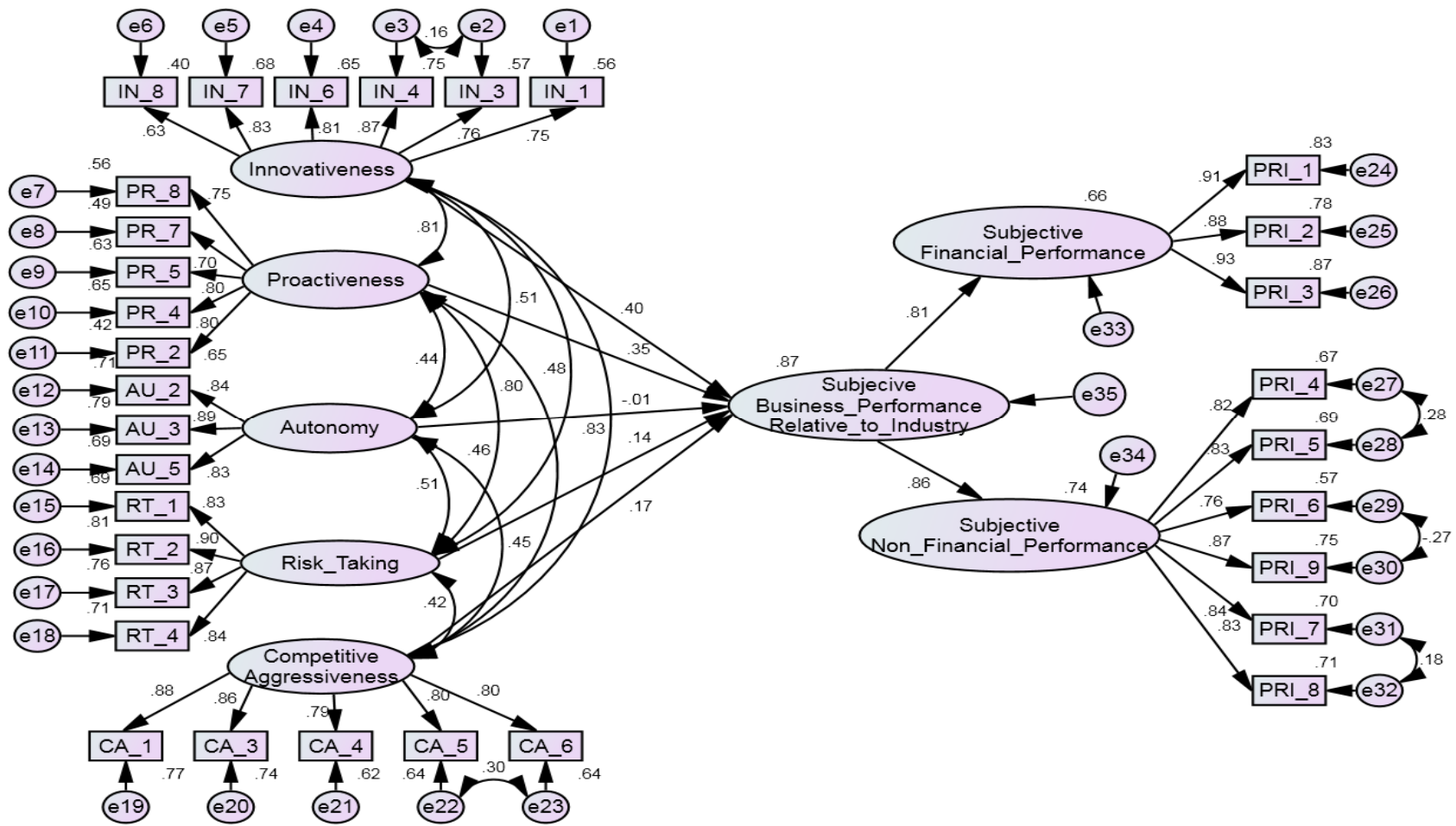


Figure 6.10 Structural Model for Entrepreneurial Orientation (Multi-dimensional) and Subjective Business Performance Relative to Industry

### **6.2.6: Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance**

To assess the measurement adequacy and inter construct correlation between the entrepreneurial orientation (multi-dimensional) and archival business performance, a measurement model has been assessed. In measurement model, the constructs of innovativeness, risk taking, proactiveness, competitive aggressiveness, autonomy, and archival business performance have been assumed as exogenous variables. The inter relatedness of these constructs have been assessed through bidirectional arrows. The measurement model has been examined for its fit, psychometric properties and significance of the inter construct correlations.

The measurement model reveals a Normed Chi-square index of 1.45; GFI = 0.885; AGFI = 0.859; CFI = 0.965; NFI = 0.90; RMSEA = 0.042; RMR = 0.07. The index of Normed Chi-square meets the guidelines of 3.0. CFI and NFI meet the threshold of .90. The indices for GFI and AGFI were quite close to the conservative cut off of .90 (Joreskog and Sorbom, 1993; Hair *et al.*, 2008; Hooper *et al.*, 2008) but much beyond the progressive cut off of .80 (Brett and Drasgow, 2002; Kanste *et al.*, 2007; Horzum and Cakir, 2009; Herzog, 2011). Moving to the badness of fit indices, RMR and RMSEA falls much below the cut-off of .08. Standardized residuals do not exceed the cut off of 2.5 (Table 6.20). All these indices were significant and reveal a good fit. Standardized factor loadings for all reflective indicators has been found significant (Table 6.20 and 6.21) and reasonably high. AVE score ranges from 50 percent to 73 percent (Table 6.21), which was satisfactory and acknowledges the adequacy and appropriateness of the empirical indicators in capturing the true meaning of the underlying constructs. CR for all the constructs exceeds the threshold of .70 (Table 6.21) and affirms the inter consistency. High indices of standardized factor loading, AVE and CR provide sufficient evidence in the support of the convergent validity of the different constructs.

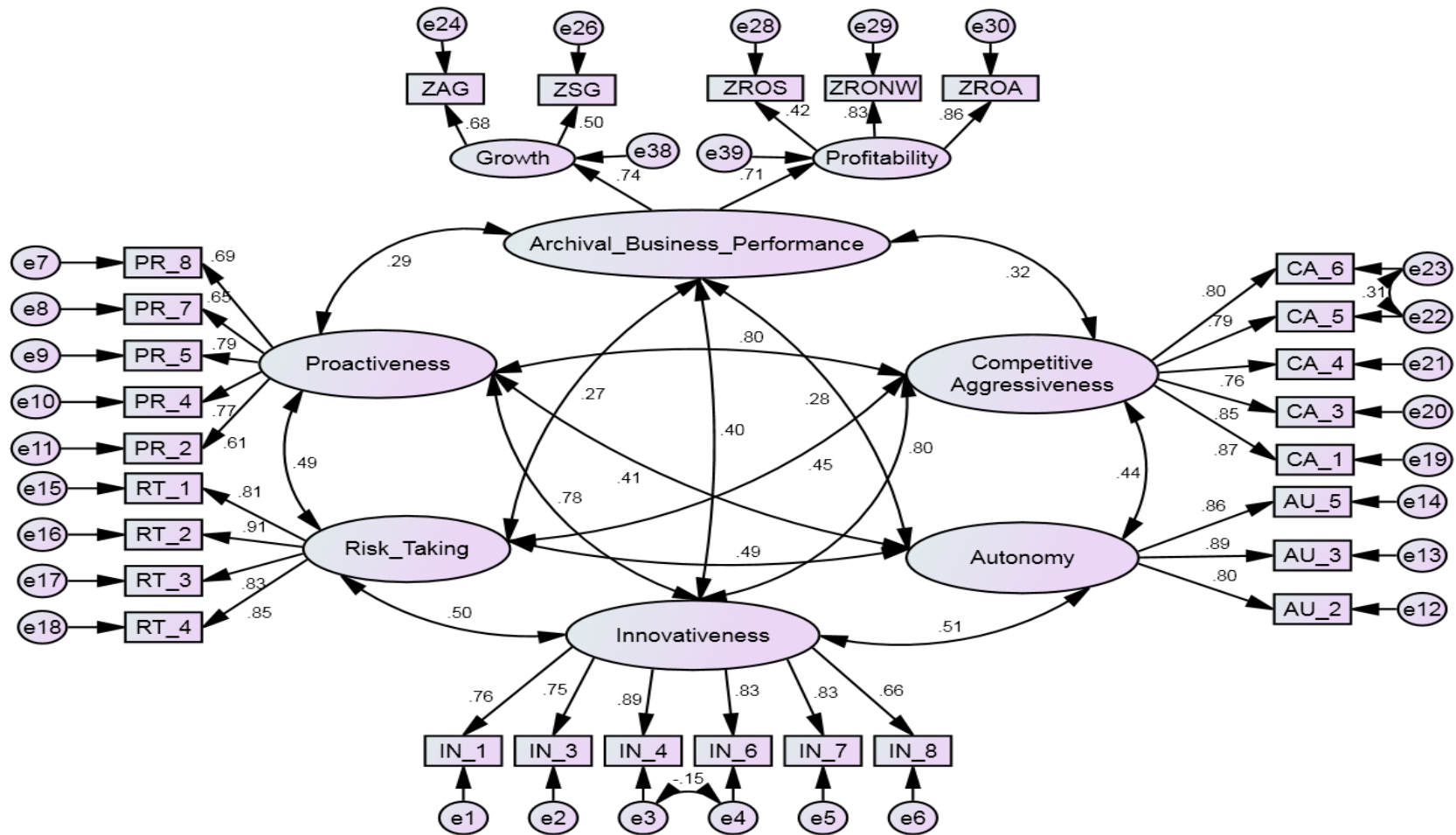


Figure 6.11 Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance



**Table 6.20: Standardized Factor Loadings and Residuals of Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance**

Item Code	SFL	Standardized Residual Covariances																											
		ZROA	ZRONW	ZROS	ZSG	ZAG	AU_2	AU_3	AU_5	RT_1	RT_2	RT_3	RT_4	CA_1	CA_3	CA_4	CA_5	CA_6	PR_8	PR_7	PR_5	PR_4	PR_2	IN_1	IN_3	IN_4	IN_6	IN_7	IN_8
ZROA	0.86	0.0																											
ZRONW	0.83	0.0	0.0																										
ZROS	0.42	-0.2	0.3	0.0																									
ZSG	0.50	-0.6	-0.3	0.8	0.0																								
ZAG	0.68	0.6	-0.1	-1.0	0.0	0.0																							
AU_2	0.80	-0.1	-0.2	1.1	0.5	-0.3	0.0																						
AU_3	0.89	0.5	0.5	1.2	0.4	-1.3	-0.1	0.0																					
AU_5	0.86	-0.1	0.0	1.8	0.8	-0.6	0.1	0.0	0.0																				
RT_1	0.81	1.6	0.8	0.2	0.6	-0.8	0.3	1.6	0.3	0.0																			
RT_2	0.91	0.5	0.1	0.1	-0.1	-0.8	-0.2	0.1	-1.0	-0.1	0.0																		
RT_3	0.84	0.7	-0.3	0.4	-0.4	-1.0	0.7	0.1	0.6	0.3	-0.2	0.0																	
RT_4	0.85	0.4	0.0	-0.1	-0.1	-1.1	-0.7	-0.1	-0.8	-0.4	0.3	0.0	0.0																
CA_1	0.87	0.1	-0.1	-1.2	1.9	-0.7	0.2	0.0	-0.6	1.2	0.5	0.0	0.1	0.0															
CA_3	0.85	-0.3	-0.4	-2.0	2.5	0.6	0.4	0.5	0.4	0.9	-0.9	-0.7	-1.1	0.0	0.0														
CA_4	0.76	-0.3	-0.6	-0.5	1.2	0.7	-1.1	-0.4	-0.4	0.1	-0.7	-0.5	-0.9	-0.3	-0.1	0.0													
CA_5	0.79	-0.2	-0.3	-2.0	1.2	-0.6	0.9	0.0	0.1	1.0	0.7	0.2	0.0	-0.1	0.5	0.1	0.0												
CA_6	0.80	-0.9	-0.3	-1.9	1.4	-0.6	-0.2	0.1	0.0	1.2	0.4	-0.2	-0.2	-0.1	0.0	0.3	0.0	0.0											
PR_8	0.69	-0.1	-1.3	-2.1	0.4	-0.1	-0.1	0.3	0.5	-0.1	-1.1	-0.3	-1.8	-0.2	-0.5	0.3	-0.8	-0.4	0.0										
PR_7	0.65	0.4	1.0	-0.3	0.3	0.8	0.2	-0.5	-0.3	0.0	-0.2	-0.5	-1.2	-0.2	-1.0	0.3	0.3	0.9	1.0	0.0									
PR_5	0.79	-1.1	-0.7	-1.6	1.2	-0.9	-1.0	-0.9	-1.1	0.4	-0.2	0.3	-0.8	0.0	-0.5	0.3	-1.0	-0.4	0.6	-0.1	0.0								
PR_4	0.77	0.6	0.1	0.4	1.3	-1.0	0.8	0.4	0.2	1.1	0.6	1.5	0.5	0.8	-0.4	1.1	0.0	-0.3	-0.8	0.0	0.2	0.0							
PR_2	0.61	1.5	1.5	0.5	1.2	0.0	1.2	1.5	1.1	0.9	0.1	0.6	0.4	0.7	0.9	0.6	0.6	-0.1	0.5	-0.2	-0.2	-0.9	0.0						
IN_1	0.76	-0.1	-0.5	-1.4	1.4	-0.9	-0.1	-0.7	-1.1	1.7	0.2	0.7	0.8	-0.2	-0.4	-1.3	-0.6	-0.9	-1.2	-1.3	-0.5	0.7	1.3	0.0					
IN_3	0.75	1.0	1.1	-0.4	0.9	0.6	0.5	0.6	-0.1	2.0	0.8	1.0	-0.1	0.1	0.7	-0.4	0.3	0.5	-0.4	-0.6	-0.2	-0.5	2.1	0.5	0.0				
IN_4	0.89	0.4	-0.1	-0.8	1.3	-0.6	0.2	0.0	0.4	1.0	0.2	0.0	-0.3	0.2	-0.3	-0.3	-0.7	-0.2	-0.8	-0.4	-0.3	1.1	0.2	0.3	0.2	0.0			
IN_6	0.83	-0.4	-0.3	-0.9	0.8	1.2	-0.5	-0.5	0.0	0.4	-1.2	-1.0	-1.5	0.2	-0.4	0.7	-0.5	0.0	-0.1	-0.1	-0.5	0.2	0.1	0.2	-0.8	0.0	0.0		
IN_7	0.83	-1.2	-1.0	-2.1	0.8	-1.0	0.2	0.0	0.0	0.7	-0.2	0.1	-1.1	0.8	0.2	0.9	0.3	0.7	0.6	0.3	-0.1	0.7	0.8	-0.4	-0.2	-0.3	0.5	0.0	
IN_8	0.66	0.6	0.7	0.0	-0.7	-0.7	0.5	0.9	0.0	-0.2	0.0	-0.3	0.0	0.1	-0.1	0.2	-0.8	-0.7	-0.7	-1.1	-0.7	0.9	0.5	-0.5	0.1	-0.1	0.3	0.1	0.0

**Table 6.21 Psychometric Properties of the Measurement Model for Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance**

Parameter	Index	Construct	Dimension	AVE	CR
Chi-square	479.95	Entrepreneurial Orientation (Multi-dimensional)	Innovativeness	.62	.91
Degree of freedom	331				
Normed Chi-square (Chi-square/ df)	1.45		Proactiveness	.50	.83
GFI	.885		Risk Taking	.73	.91
AGFI	.859		Competitive Aggressiveness	.66	.91
NFI	.90		Autonomy	.72	.89
CFI	.965	Archival Business Performance	Growth	.52	.68
REMSA	.042				
RMR	.070		Profitability		

The divergent validity of various dimensions of entrepreneurial orientation has been examined by comparing the shared variance (i.e. squared correlation) of the two constructs with the AVE score of the respective constructs. The squared correlation among the different dimension of entrepreneurial orientation was calculated through the summated score of the validated constructs of innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy. The purpose was to acknowledge the uniqueness of the various dimensions of entrepreneurial orientation. Table 6.22 reveals that observed squared correlations (for each pair of constructs) were lower than the AVEs of respective constructs.

Though the figure 6.11 disclose a high degree of the inter-relatedness of the various constructs under investigation, but the significance of the inter-relatedness of the various constructs have been assessed through the critical ratios of the correlation coefficients. Table 6.23 reveals that all the critical ratios were not only significant at 1% level but were quite high against the cut-off of 2.58. These high indices of critical ratios affirm the significance of inter constructs correlations.

**Table 6.22 Assessment of Divergent Validity**

	<b>Autonomy</b>	<b>Competitive Aggressiveness</b>	<b>Innovativeness</b>	<b>Proactiveness</b>	<b>Risk Taking</b>
<b>AVE</b>	.72	.66	.62	.50	.73
<b>Squared Correlation</b>					
<b>Autonomy</b>	1.00	0.15	0.22	0.13	0.20
<b>Competitive Aggressiveness</b>	0.15	1.00	0.52	0.47	0.17
<b>Innovativeness</b>	0.22	0.52	1.00	0.46	0.22
<b>Proactiveness</b>	0.13	0.47	0.46	1.00	0.18
<b>Risk Taking</b>	0.20	0.17	0.22	0.18	1.00

**Table 6.23 Critical ratios for the Coefficients of Correlation**

<b>Constructs</b>	<b>Autonomy</b>	<b>Competitive Aggressiveness</b>	<b>Innovativeness</b>	<b>Proactiveness</b>	<b>Risk Taking</b>	<b>Archival Business Performance</b>
<b>Autonomy</b>	1	5.60**	5.97**	4.75**	6.14**	2.66**
<b>Competitive Aggressiveness</b>	5.60**	1	7.41**	6.90**	5.70**	3.29**
<b>Innovativeness</b>	5.97**	7.41**	1	6.42**	5.89**	3.70**
<b>Proactiveness</b>	4.75**	6.90**	6.42**	1	5.45**	2.72**
<b>Risk Taking</b>	6.14**	5.70**	5.89**	5.45**	1	2.59**
<b>Archival Business</b>	2.66**	3.29**	3.70**	2.72**	2.59**	1

\*\* Significant at 1% level

The causal relationship between exogenous constructs of innovativeness, proactiveness, risk taking, autonomy and competitive aggressiveness and endogenous construct of archival business performance has been studied by employing structural equation modeling with path analysis (Figure 6.12). The dependence relationship between the exogenous and endogenous variables has been reflected through single headed arrows in path diagram. The structural model has been examined for its fit, amount of explained variance and the strength and significance of the structural parameter estimates.

The structural model reveals a Normed Chi-square of 1.645 (480.2/331); GFI = 0.885; AGFI = 0.860; NFI = 0.898; CFI = 0.965; RMR = 0.070; and RMSEA = 0.042.

All these indices were not only significant but also remain almost same as in measurement model. R square turns to be significant but has a low weight of .17. The significance of path coefficients have not been supported by the data (Table 6.24), however path between Innovativeness→ Archival Business Performance was significant at 10 percent level of significance (p value = 0.08).

**Table 6.24 Model Fit Indices and Path coefficients of Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance**

Parameter	Measurement Model	Structural Model
Chi-square	479.95	480.2
Degree of Freedom	331	331
Normed Chi-square (Chi-square/ df)	1.45	1.45
GFI	.89	.89
AGFI	.86	.86
NFI	.90	.90
CFI	.97	.97
RMR	.07	.07
REMSA	.04	.04
Path Analysis		
R- Square	0.17	
Path Details	Critical Ratio	Path Coefficients
Innovativeness→ Archival Business Performance	1.73*	.36*
Proactiveness→ Archival Business Performance	-.46	-.09
Risk Taking→ Archival Business Performance	.70	.09
Competitive Aggressiveness→ Archival Business Performance	.12	.03
Autonomy→ Archival Business Performance	.72	.08

\* Significant at .10 level,

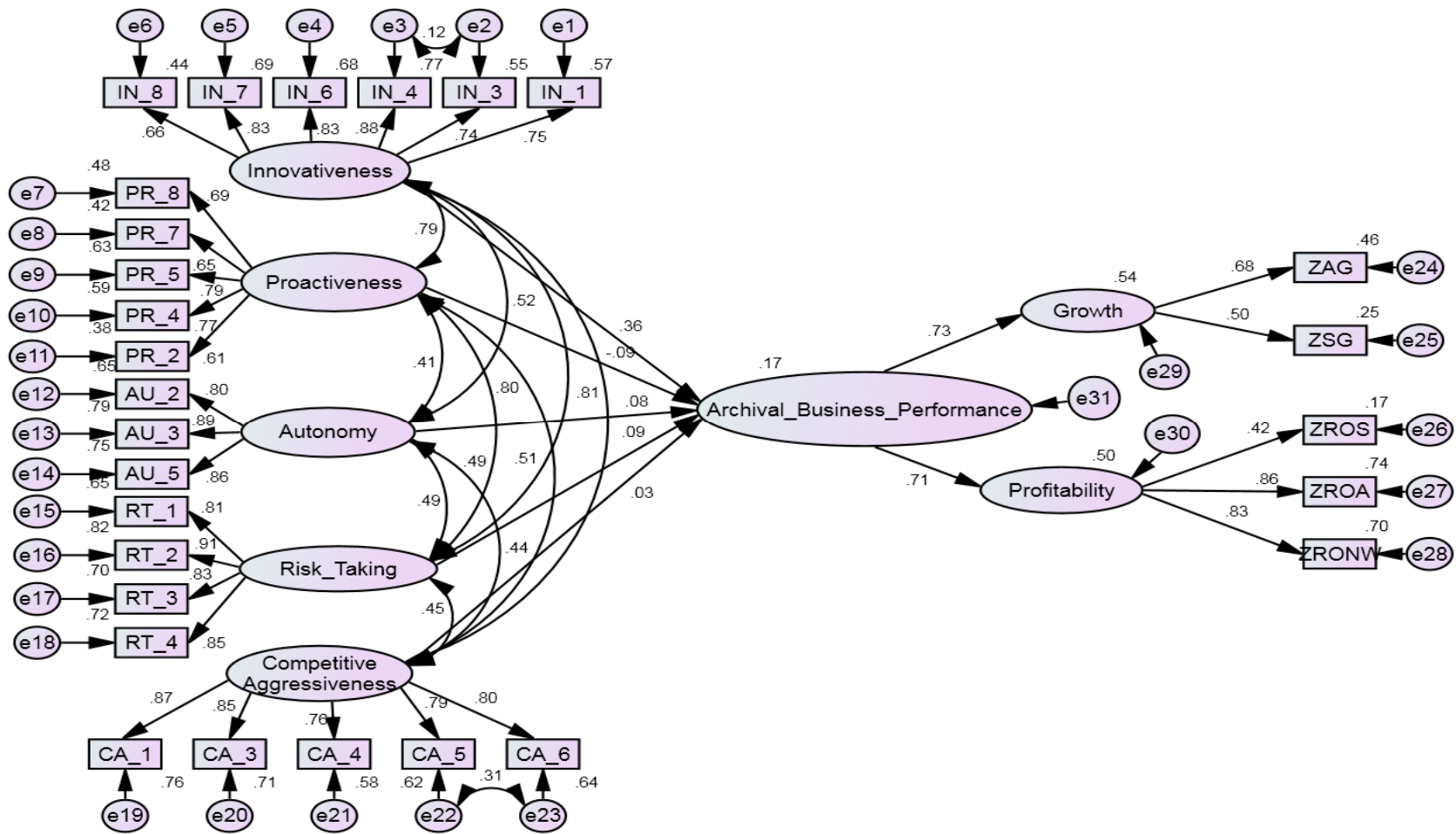


Figure 6.12 Structural Model for Entrepreneurial Orientation (Multi-dimensional) and Archival Business Performance

The results of various models of entrepreneurial orientation - business performance relationship reject hypothesis  $H_6$  i.e. *There is no significant impact of the entrepreneurial orientation on the business performance.* The result of the study suggests that firm-level entrepreneurial behaviour - a propensity to engage in relatively high levels of innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy - is positively associated with the performance of an organization. Firms which show higher inclination towards entrepreneurial behaviour perform better than the firms with low entrepreneurial orientation. Innovativeness and proactiveness equip entrepreneurial firms with the capabilities of introducing new products, processes, technologies and services ahead of their competition and acting in anticipation of future demand to create, change and shape the environment of a firm in its favour. Risk taking gives the necessary courage to break away from the tried-and-tested and venture into the projects where the outcomes are unknown. Ability to directly and intensely challenge its competitors, i.e. competitive aggressiveness, help these firms in protecting their current market share. Autonomy boosts the organizational members to go for opportunities which seem beyond the current capabilities of an organization. All these actions help an entrepreneurial firm in achieving long term sustainable performance rather than temporary high performance.

### **6.3: Model Comparison**

The generalization of any statistical inferences are normally affected by the accuracy or credibility of the statistical model i.e. the extent to which a model (i) fits well, (ii) approximates reality in as parsimonious fashion as possible, and (iii) can be used as a basis for prediction (Preacher and Merkle, 2012). With advancement of technology and research methodology, researchers are more interested in assessing a specific relationship from different perspective and then selecting a perspective which best describes the theoretical relationship. Model comparison is a process of comparing the predictive ability of different competing models and selecting of a model, which best explain the underlying phenomena. As far as the methodology of model comparison is concerned, literature acknowledges the prevalence of several methods of model comparison e.g. Chi-square difference test; Measures of goodness of fit like CFI, NFI etc.; Measures of error

variance like REMSA, SRMR etc.; and Information criteria like AIC (Akaike Information Criterion), BIC (Bayesian Information Criterion), and ECVI (Expected cross-validation index) etc. Each criterion has its own way of the selection of a model – which fits better compared to others.

The Chi-square difference test assesses the significance and magnitude of distance between the sample and fitted covariance matrices of different competing models as a basis of model comparison. Measures of goodness of fit compare the degree of comparative fit indices of various competing models for selecting a model which fits best with theory. Model with higher indices values are preferred over others. Measures of error variance consider the unexplained variance as a basis of model comparison and the model with lower error variances is preferred. Information criteria use information theory as a basis of selection among different competing models and often rely upon AIC, BIC, and ECVI criteria as a basis of model comparison. AIC, BIC and ECVI are lack of fit measure and assess the relative quality of a statistical model for a given set of data by estimating relative amount of the information lost in different competing models. Model with least indices for AIC, BIC and ECVI fits better over others. AIC, BIC and ECVI are more useful for ranking of non nested models (Preacher and Merkle, 2012).

Each criterion is important in one or other way and has its own relevance for a given situation. The use of Chi-square difference test, as a basis of model comparison, is more common (Busemeyer and Wang, 2000). Chi-square difference test examines the significance of the difference of two or more competing models under the assumption that there is no significant difference between the models under investigation. In Chi-square difference test, firstly the difference in the Chi-square values as well as in the degrees of freedom of the two competing models is to be calculated and then this difference is tested for its statistical significance.

Chi-square difference = Chi-square of S Model - Chi-square of L Model

Difference in  $df$  =  $df$  of S Model –  $df$  of L Model

S denotes the ‘smaller’ model with fewer parameters, whereas L denotes the ‘larger’ model with more parameters. A significant Chi-square difference implies a significant difference between two or more competing models and suggests that the larger model

with more freely estimated parameters fits the data better than the smaller model in which the parameters in question are fixed. Fixed parameters refer to the relationships, which are not be estimated by the SEM routine. These parameters are assumed to be (set at) zero and are not shown on a visual diagram. Free parameters refer to a relationship, which are to be estimated by a CFA/ SEM model. An insignificant Chi-square difference reveals that both models, statistically, fit equally well. So for the purpose of simplicity the parameters in question can be eliminated from the model (fixed to zero) and the smaller model can be preferred over larger model.

In the context of present study, to select the most appropriate model of 'entrepreneurial orientation – business performance relationship' a multi step comparison has been made between the various competing models of entrepreneurial orientation-business performance relationship. At first instance, comparison between the uni-dimensional and multi-dimensional view of entrepreneurial orientation has been made by employing Chi-square difference test.

Comparison of Model 1 (Uni-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Competitors) and Model 4 (Multi-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Competitors) reveals a significant difference between these models (Table 6.26). So, the model with more free parameters i.e. Model 4 has been preferred.

Comparison of Model 2 (Uni-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Industry) and Model 5 (Multi-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Industry) reveal a significant difference between these models (Table 6.26) and acknowledge the superiority of Model 5 over Model 2.

Comparison of Model 3 (Uni-dimensional view of Entrepreneurial Orientation → Archival Business Performance) and Model 6 (Multi-dimensional view of Entrepreneurial Orientation → Archival Business Performance) reveals that the difference in Chi-square statistic (Table 6.26) was not large enough to reject the null hypothesis of 'no significant model differences'. Though both of the models fit equally well, but insight of information criteria method of model comparison support the Model 6



over Model 3. AIC, BIC and ECVI (information criteria basis of model comparison) have been observed lower for Model 6 *viz-a-viz* Model 3 (Table 6.25). Hence, all these evidence generated by sample data affirm the superiority of multi- dimensional view of entrepreneurial orientation over the uni-dimensional view of entrepreneurial orientation.

As far as the comparison of archival and subjective measures of business performance is concerned, the result of Chi-square difference test reveals a significant difference (Table 6.26) between Model 4 (Multi-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Competitors) and Model 6 (Multi-dimensional view of Entrepreneurial Orientation → Archival Business Performance). Hence, Model 4 is preferred over Model 5.

The comparison of Model 5 (Multi-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Industry) and Model 6 (Multi - dimensional view of Entrepreneurial Orientation → Archival Business Performance) reveals a significant difference in the Chi-square values (Table 6.26) and proves the superiority of Model 5 over the Model 6.

Similarly, the significant Chi-square difference of Model 1(Uni-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Competitors) and Model 3 (Uni-dimensional view of Entrepreneurial Orientation → Archival Business Performance) supports Model 1 over Model 3.

The comparison of Model 2 (Uni-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Industry) and Model 3 (Uni-dimensional view of Entrepreneurial Orientation → Archival Business Performance) reveals a significant difference between these models (Table 6.26) and acknowledge the superiority of Model 2. Hence, the given data provide sufficient evidence in the support of subjective measures of business performance over the archival measures of business performance.

At last instance, among the subjective measures of performance, comparison has been made between the subjective measures relative to competitors and subjective measures relative to industry. The comparison of Model 4 (Multi-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to

Competitors) and Model 5 (Multi-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Industry) reveal an insignificant difference between these models (Table 6.26). An insignificant Chi-square difference reveals that both models fit equally well, but from the perspective of simplicity smaller model, with lesser number of freely estimated parameters i.e. Model 5 should be selected. To affirm the above claim, information criteria matrices (AIC, BIC and ECVI) of Model 4 and Model 5 have been assessed (Table 6.25). AIC, BIC and ECVI have been observed lower for Model 5. Hence, Model 5 has been preferred over Model 4.

An insignificant Chi-square difference of Model 1 (Uni-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Competitors) and Model 2 (Uni-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Industry) as well as the lesser indices of AIC, BIC and ECVI of Model 2 support the superiority of Model 2 over Model 1.

**Table 6.25: Model Fit Indices and Structural Parameters Estimates of various Models of Entrepreneurial Orientation - Business Performance Relationship**

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Chi-square	815.51	786.36	489.76	796.19	770.13	480.2
Degree of Freedom	481	450	340	473	442	331
Normed Chi-square (Chi-square/ df)	1.69	1.74	1.44	1.68	1.74	1.45
GFI	.901	.901	.883	.903	.903	.885
AGFI	.884	.884	.860	.885	.884	.860
NFI	.936	.934	.895	.937	.936	.898
CFI	.973	.971	.965	.973	.971	.965
RMR	.061	.061	.075	.059	.057	.070
REMSA	.039	.040	.041	.039	.040	.042
AIC	975.52	942.36	630.23	972.19	942.13	621.76
BIC	1305.49	1264.08	896.45	1335.16	1296.85	855.99
ECVI	2.139	2.067	2.462	2.132	2.066	2.429
Dimension	Path Coefficients					
Innovativeness	---	---	---	.43***	.40***	.36*
Proactiveness	---	---	---	.49***	.35***	-.09
Risk Taking	---	---	---	.04	.14***	.09
Competitive Aggressiveness	---	---	---	-.01	.17**	.03
Autonomy	---	---	---	-.01	-.01	.08
Entrepreneurial Orientation	.91***	.96***	.40***	---	---	---
R- Square	.82	.92	.16	.79	.87	0.17

\*\*\* Significant at .01 level, \*\* Significant at .05 level, \* Significant at .10 level

**Table 6.26 Chi- Square Difference Test among different Models of Entrepreneurial Orientation- Business Performance Relationship**

Parameters		Model1	Model2	Model3	Model4	Model5	Model6
<b>Model 1</b>	△ Chi-square	-	29.15	325.75	19.32	45.38	335.31
	△ df	-	31	141	8	39	150
	Critical Value	-	44.98	169.71	15.50	54.57	179.58
	P-value	-	0.56	0.00	0.01	0.22	0.00
<b>Model 2</b>	△ Chi-square	-29.15	-	296.6	-9.83	16.23	306.16
	△ df	-31	-	110	-23	8	119
	Critical Value	44.98	-	135.48	35.17	15.50	145.46
	P-value	0.56	-	0.00	0.99	0.04	0.00
<b>Model 3</b>	△ Chi-square	-325.75	-296.6	-	-306.43	-280.37	9.56
	△ df	-141	-110	-	-133	-102	9
	Critical Value	169.71	135.48	-	160.91	126.57	16.91
	P-value	0.00	0.00	-	0.00	0.00	0.39
<b>Model 4</b>	△ Chi-square	-19.32	9.83	306.43	-	26.06	315.99
	△ df	-8	23	133	-	31	142
	Critical Value	15.50	35.17	160.91	-	44.98	170.80
	P-value	0.01	0.99	0.00	-	0.72	0.00
<b>Model 5</b>	△ Chi-square	-45.38	-16.23	280.37	-26.06	-	289.93
	△ df	-39	-8	102	-31	-	111
	Critical Value	54.57	15.50	126.57	44.98	-	136.59
	P-value	0.22	0.04	0.00	0.72	-	0.00
<b>Model 6</b>	△ Chi-square	-335.31	-306.16	-9.56	-315.99	-289.93	-
	△ df	-150	-119	-9	-142	-111	-
	Critical Value	179.58	145.46	16.91	170.80	136.59	-
	P-value	0.00	0.00	0.39	0.00	0.00	-

N.B. Critical Values are at 5% level of Significance

The above discussion has important implications. The comparison of uni-dimensional view of entrepreneurial orientation (reflected through Models 1, 2 and 3) and multi dimensional view of entrepreneurial orientation (reflected through Models 4, 5 and 6) prove the superiority of multi dimensional view of entrepreneurial orientation i.e. Model 4, 5 and 6 better explain the entrepreneurial orientation – business performance relationship.

Among the archival and subjective measures of performance, the evidence generated by study supports the superiority of subjective assessment of business

performance i.e. Model 4 and 5 (Subjective assessment of Business Performance) has been preferred over Model 6 (Archival Business Performance).

The insignificant Chi-square difference of Model 4 (Multi-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Competitors) and Model 5 (Multi-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Industry) suggest that both models fit equally well, any of these measures could be taken for the purpose of investigation, but from the perspective of simplicity, a smaller model - with lesser number of freely estimated parameters i.e. Model 5 (Multi-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Industry) should be preferred. The insight of information lost criteria reflected through AIC, BIC and ECVI produce sufficient evidence in the favour of subjective business performance relative to industry and finally Model 5 (Multi-dimensional view of Entrepreneurial Orientation → Subjective Business Performance Relative to Industry) has been selected as best model for assessing entrepreneurial orientation- business performance relationship.

## CHAPTER VII

### MODERATION ANALYSIS

The purpose of this chapter is to explore the role played by environmental uncertainty and organizational structure in entrepreneurial orientation - business performance relationship. Section 7.2 describes moderation analysis. Section 7.2 reveals the moderating effect of environmental uncertainty on entrepreneurial orientation - business performance relationship. Section 7.3 presents the results of moderation analysis for effect of organizational structure on entrepreneurial orientation - business performance relationship.

#### **7.1: Moderation Analysis**

The behavioural science literature is replete with studies demonstrating the effect of independent variable on dependent variable. Undoubtedly, testing and understanding of the causal relationship between dependent and independent variable produce sufficient evidence about the descriptive nature of the relationship among variables under investigation. But such a descriptive knowledge cannot be considered sufficient to refine once understanding about functional relationship between variables under investigation. Testing of causal hypotheses only verifies researchers' substantive theories but such a descriptive knowledge actually does not explain the process of causality i.e. what bridges the causal relationship and what alters the magnitude or direction of the causal relationship (Frazier *et al.*, 2004; Rose *et al.*, 2004). For generating deeper insight, researchers have to go beyond the simple bivariate cause and effect relationship that merely describe a causal relationship, rather they have to test the advanced hypotheses related with why, how, and when. These advanced hypotheses actually explain the functional process of causality by incorporating a third variable into cause - effect relationship.

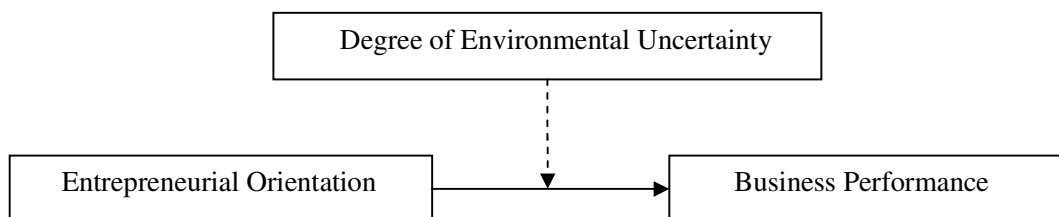
Moderation analysis is a kind of analysis which provides information about the circumstance under which the effect of independent variable on dependent variable holds good (Frazier *et al.*, 2004). It actually examines the contextual nature of a causal

relationship and specifies how the relation between independent and dependent variable changes as a function of a third variable (Aiken *et al.*, 1991; Baron and Kenny, 1986). It measures the effect of a third variable on the relationship between independent and dependent variable by looking at the strength and nature of the relationship between independent and dependent variable at different levels of third variable (Holmbeck, 1997; Rose *et al.*, 2004). Moderation occurs when the direction and/or strength of the relationship between independent and dependent variable varies at different levels of a third variable (James and Brett, 1984; Kraemer *et al.*, 2002).

The moderation analysis assess the equality of the measurement and structural parameter estimates across various groups of interest i.e. the extent to which the same pattern (or configuration) of fixed and freely estimated parameters hold across sub-populations (Joreskog, 1971). *Measurement equivalence* examines the extent to which parameters comprising the measurement portion of a CFA model remain invariant across groups. *Structural equivalence* involves the testing of equality of structural regression paths among the postulated latent constructs. It evaluates when an independent variable most strongly (or weakly) causes a dependent variable.

## 7.2: Moderating effect of Environment Uncertainty on Entrepreneurial Orientation - Business Performance Relationship

To assess the nature and magnitude of the relationship between entrepreneurial orientation and business performance in different kind of environmental settings, multi-group moderation analysis (within the frame work of SEM) has been applied.



**Figure 7.1 Conceptualized Model of Moderating Effect of Environmental Uncertainty on Entrepreneurial Orientation – Business Performance Relationship**

The degree of environmental uncertainty (continues variable) has been assessed by classifying the summated score of environmental uncertainty into two unique categories (James and Brett, 1984). A high score of environment uncertainty reflect unpredictability

of the actions of competitors and customers, high pace of change in technological advancements and a stressful environment. This category has been named as ‘Dynamic environment’. Low score of environment uncertainty reveals the slow pace of change in technological advancements, stability in the tastes and preferences of the customers, predictability of the actions of competitors and a relatively safer environment. This category has been classified as ‘Stable Environment’ (Table 7.1).

**Table 7.1 Classification of sample based upon the score of Environment Uncertainty**

Parameter	Classification	Score	Theoretical Possible Score
Environment Uncertainty	Stable Environment	Up to 32	8 to 56
	Dynamic Environment	More than 32	

Chi-square difference test is a fundamental test for measuring the differences between the two competing models, under the assumption that there is no significance difference between the models under investigation (Schumacker and Lomax, 2004; Kline, 2005; Hooper *et al.*, 2008; Byrne *et al.*, 2013). In the context of multi group moderation analysis, Chi-square difference test examines the hypotheses of group invariance i.e. measurement and structural parameter estimates are operating in exactly the same manner across competing models. A non significant index of Chi-square difference proves the invariant pattern of the factor loadings, whereas a Chi-square difference value which significantly differs from zero, rejects the hypothesis of group invariance i.e. the equality constraints do not hold good across sub populations.

Two runs i.e. constrained and unconstrained models of entrepreneurial orientation – business performance relationship have been applied to assess the moderation impact of environmental uncertainty. In constrained model, the pattern of factor loadings for each observed parameter as well as coefficients of structural parameter for latent constructs was constrained to be equal in different sub group settings. Whereas, in unconstrained model no equality constraints were imposed across sub population. The moderator effect was then statistically tested by taking the difference in the Chi-square values of these models. This difference was itself a Chi-square value with degrees of freedom equal to the difference in degrees of freedom of two models.

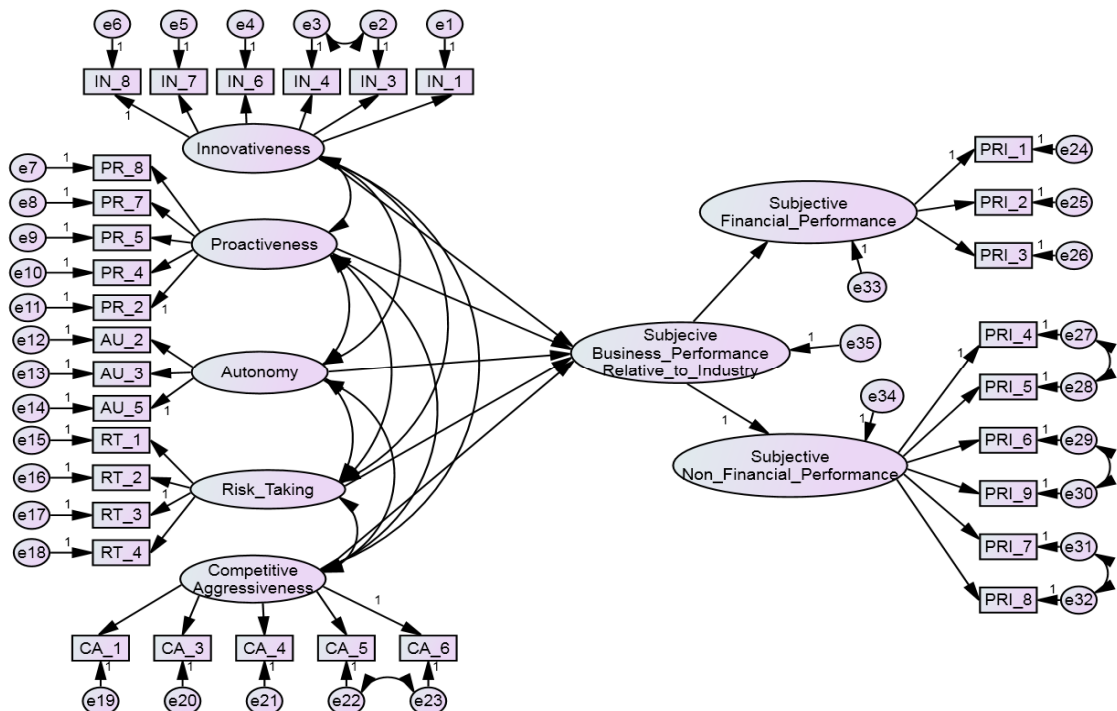


Figure 7.2 Unconstrained Model for Entrepreneurial Orientation - Business Performance Relationship for different Configurations of Environmental Uncertainty

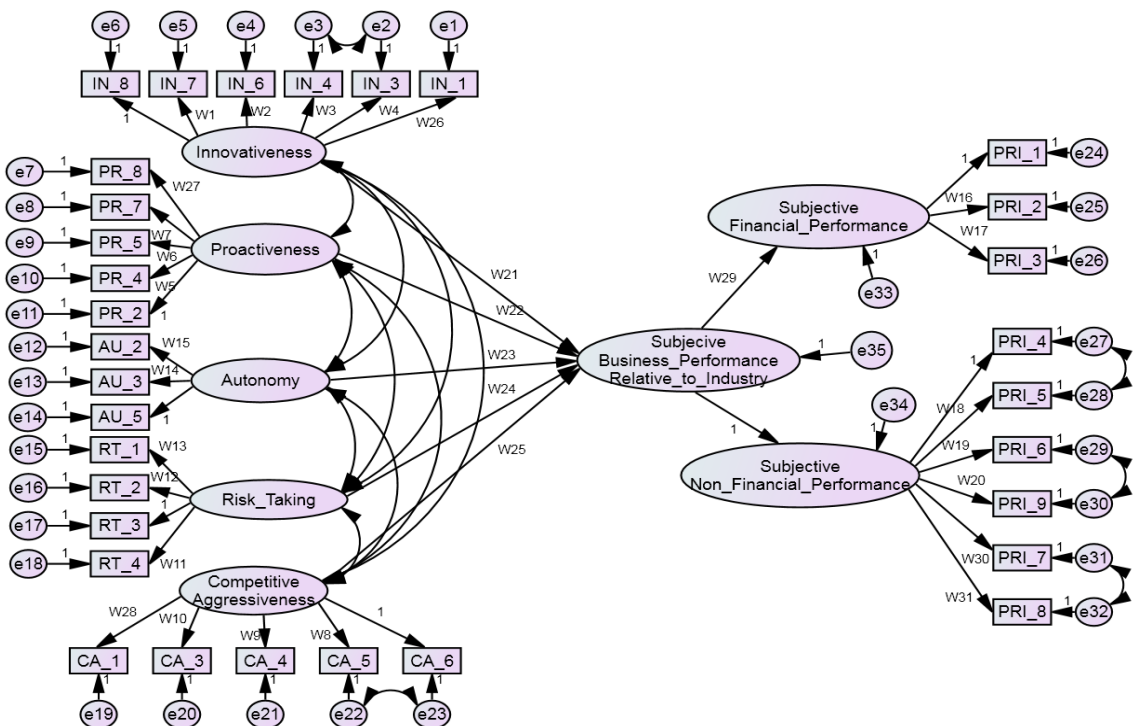


Figure 7.3 Constrained Model for Entrepreneurial Orientation - Business Performance Relationship for different Configurations of Environmental Uncertainty



The unconstrained model (Figure 7.2) reveals a Chi-square value of 1377.10, with 884 *df*. These statistics provides the baseline value for subsequent comparison for testing of group invariance. Comparative fit index (CFI) and root mean squared error of approximation (RMSEA) of unconstrained model have been observed as .953 and .035, which were significant and reflect good fit. The constrained model (Figure 7.3) produced an index of 1429.49 for Chi-square along with 915 *df*. The Comparative fit index (CFI) and root mean squared error of approximation (RMSEA) values of constrained model is at .951 and .035. Comparison of Chi-square value of 1429.49 (915 *df*) of constrained model with a Chi-square value of 1377.10 (884 *df*) of unconstrained model yields a Chi-square difference value of 52.39 (31 *df*) with a p-value of 0.01. At 0.05 significance with 31 degrees of freedom the region of rejection of null hypothesis is all Chi-square values of 44.98 or more. Since 52.39 > 44.98, the value of Chi-square difference falls in the region of rejection and produces strong evidence to reject the null hypothesis of group invariance. Evidence produced by the study indicates that some equality constraints do not hold across the different environmental settings. Thus, hypothesis H<sub>7</sub> i.e. *the entrepreneurial orientation – business performance relationship is not moderated by environmental uncertainty* has not been accepted.

**Table 7.2 Moderation effect of Environmental Uncertainty on Entrepreneurial Orientation - Business Performance Relationship**

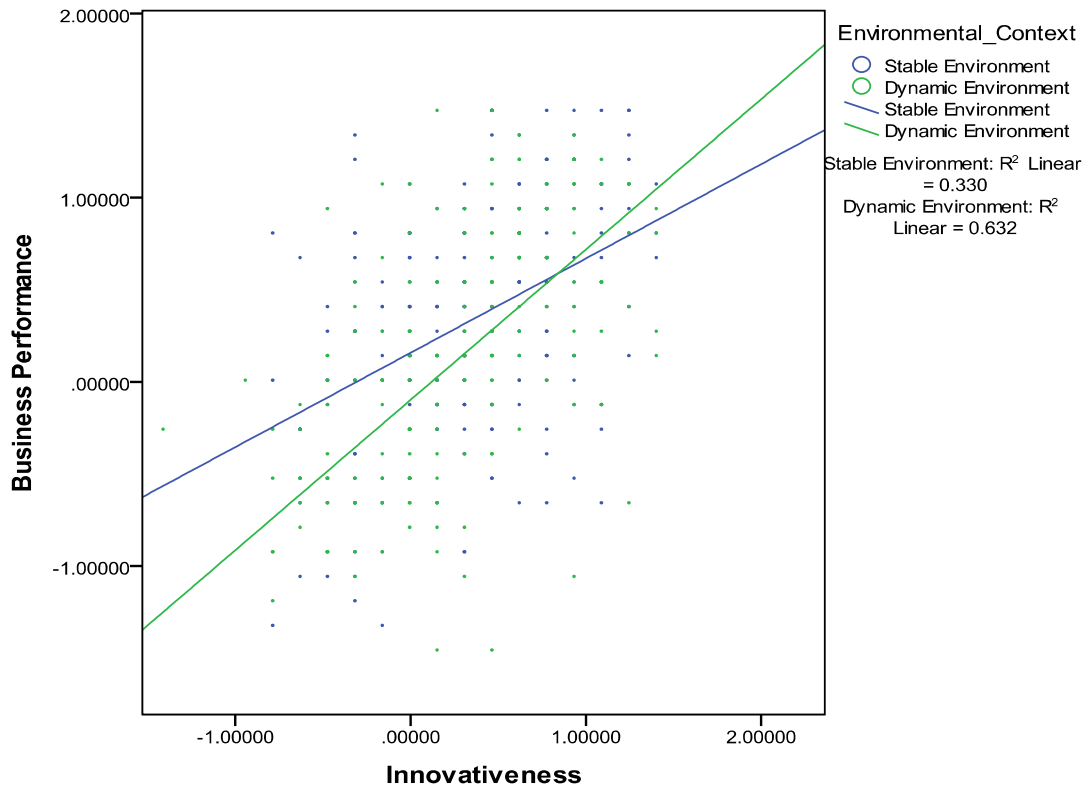
Model Fit Characteristics	Unconstrained Model (Entrepreneurial Orientation – Business Performance relationship)	Constrained Model (Entrepreneurial Orientation – Business Performance relationship)	Model Differences ( $\chi^2$ )
$\chi^2$	1377.10	1429.49	52.39*
Degrees of Freedom	884	915	31
CFI	0.953	0.951	0.002
RMSEA	0.035	0.035	–
*Significant at .05 level			

Though Chi-square difference test supports the moderation effect of environmental uncertainty in entrepreneurial orientation – business performance relationship but in order to see how the nature of the relationship between entrepreneurial orientation – business performance changes as a function of the moderating variable i.e. environmental uncertainty, a scatter plot has been plotted by regressing the business performance on the

different dimensions of entrepreneurial orientation (i.e. innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy) at varying levels of moderating variable. Plotting of the predicted relationship between independent and dependent variable, at varying levels of moderator, increase the interpretability of the moderation effect and better portray the nature of moderation (Aiken *et al.*, 1991).

### **7.2.1: Moderating effect of Environmental Uncertainty on Innovativeness – Business Performance Relationship**

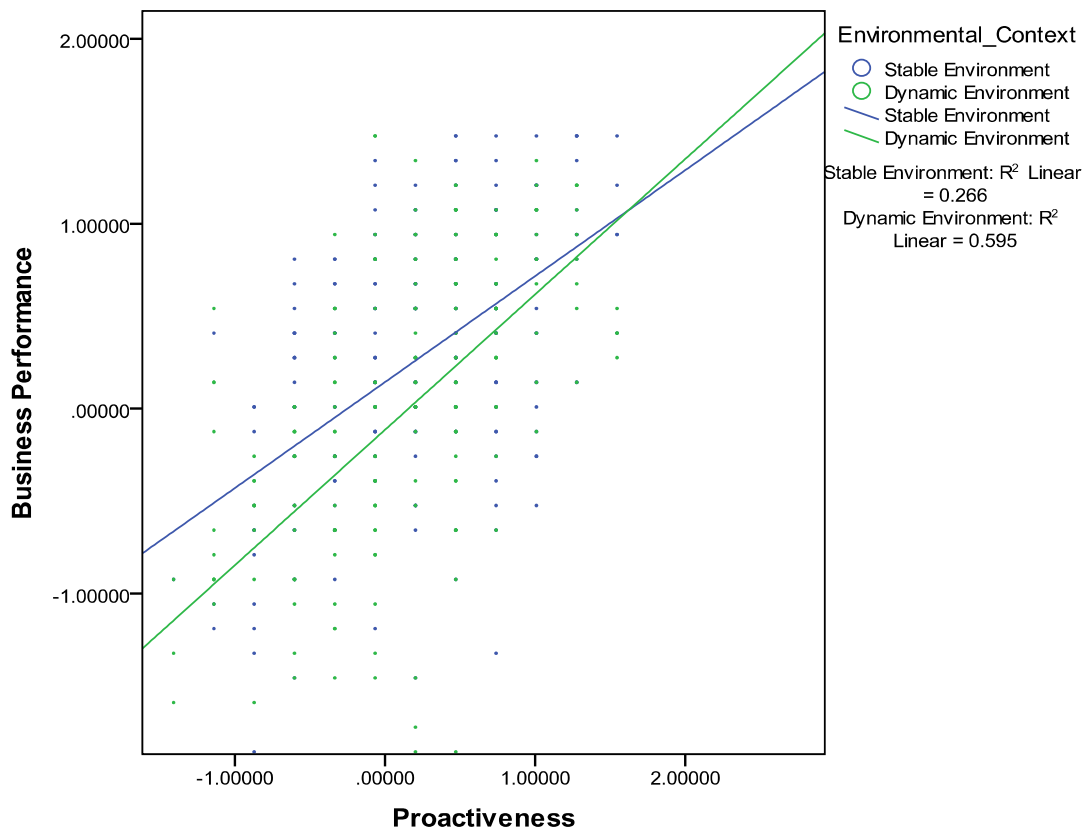
To see how environmental uncertainty impact innovativeness – business performance relationship, a scatter plot was plotted by regressing business performance upon the innovativeness in different environmental context (Figure 7.4). Scatter plot reveals that the slop of regression fit lines predicting business performance from innovativeness differs in different environmental context. The regression fit lines indicate that in stable environmental context, innovativeness influences the business performance ( $R^2$  Linear = 0.330) but not very strongly. There was a high degree of correlation between innovation and business performance for dynamic environment ( $R^2$  Linear = 0.632). It implies that in an environment, where new technologies emerge on regular basis, actions of competitor's are unpredictable, and tastes and preferences of customers change frequently, firms which introduce newness and novelty in existing systems, techniques, processes, products and services are in a better position to capture higher market share and ensure sustainable growth.



**Figure 7.4 Moderating effect of Environmental Uncertainty on Innovativeness- Business Performance Relationship**

### **7.2.2: Moderating effect of Environmental Uncertainty on Proactiveness – Business Performance Relationship**

To study the relationship between proactiveness and business performance at low and high scores of environmental uncertainty a scatter plot has been plotted and examined. The scatter plot diagram (predicting business performance from proactiveness at low and high scores of environmental uncertainty) affirms the claim that the strength of the relationship between proactiveness and business performance differ in different environmental settings. A high degree of correlation between proactiveness and business performance ( $R^2$  Linear = 0.595) has been found in dynamic environmental settings *viz-a-viz* stable environment ( $R^2$  Linear = 0.266). In dynamic business environment, an opportunity seeking and forward looking perspective involving introducing new products or services ahead of the competition, not only shapes the environment of a firm in its favour but also helps a firm in becoming market leader.

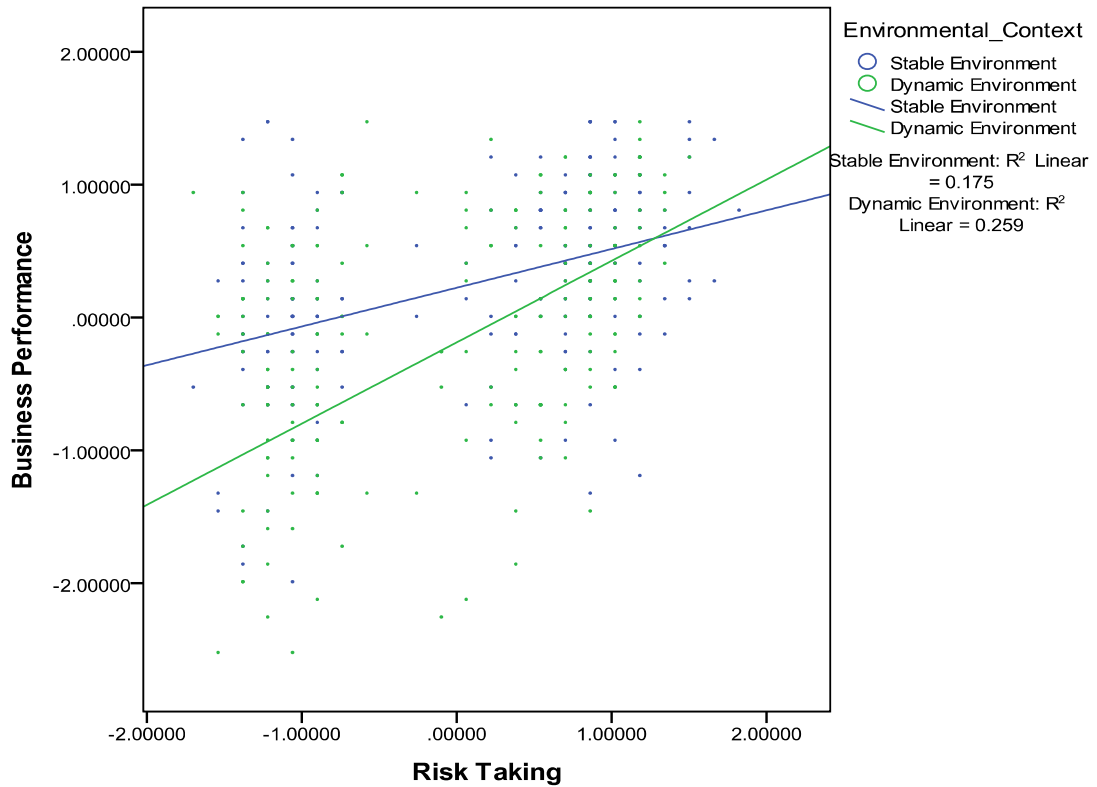


**Figure 7.5 Moderating effect of Environmental Uncertainty on Proactiveness- Business Performance Relationship**

### **7.2.3: Moderating effect of Environmental Uncertainty on Risk Taking – Business Performance Relationship**

To see how the relationship between criterion variable (business performance) and the predictor (risk taking) differ at varying levels of environmental uncertainty, a scatter plot has been plotted by regressing the business performance on risk taking at different degrees of moderator i.e. environmental uncertainty (Figure 7.6). The regression fit lines indicate that in dynamic business environment firm’s disposition to support projects, whose payoffs are uncertain, often leads to better business performance ( $R^2$  Linear = 0.295). However, in stable business environment, a positive relationship between risk taking propensity and business performance has been reconfirmed but the strength of this relationship was relatively lower ( $R^2$  Linear = 0.175). It implies that in dynamic business environment, where opportunities are numerous and emerge continuously – due to

changing market conditions, firms which venture into the unknown, take business-related chances, go beyond tried and tested and devote significant amount of resources in the face of uncertainties, are more likely to gain *viz-a-viz* risk-averse firms.

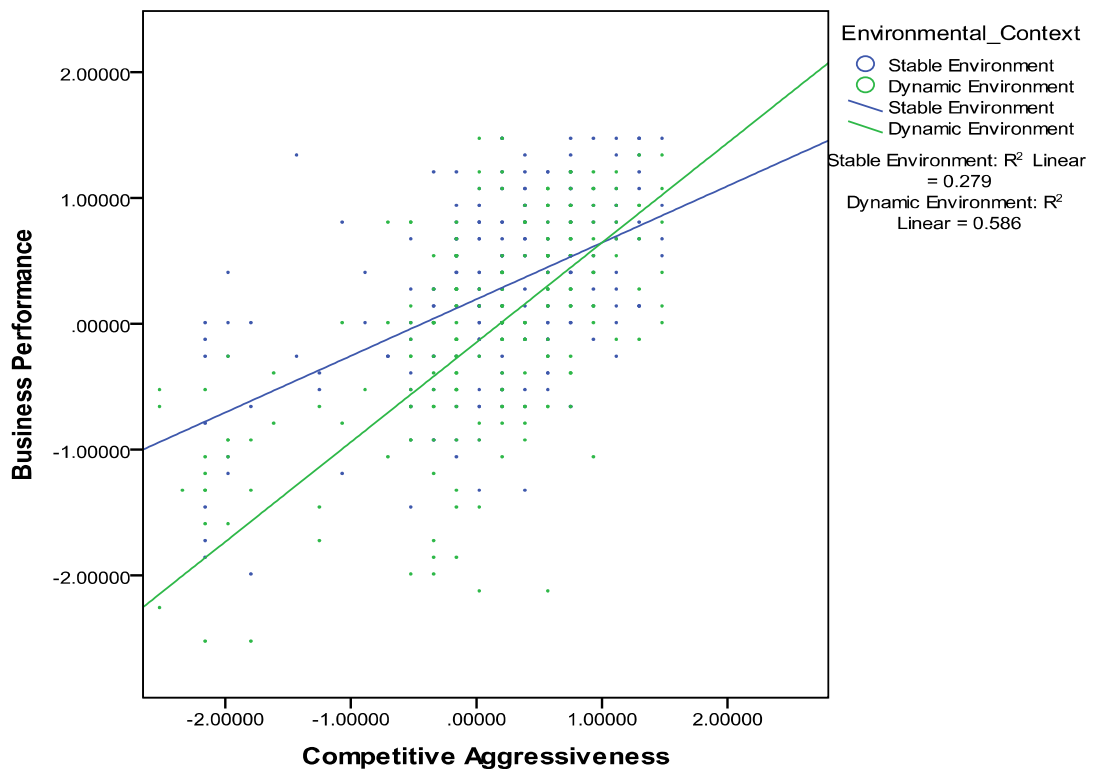


**Figure 7.6 Moderating effect of Environmental Uncertainty on Risk Taking - Business Performance Relationship**

**7.2.4: Moderating effect of Environmental Uncertainty on Competitive Aggressiveness – Business Performance Relationship**

To see how the nature of the relationship between the competitive aggressiveness and business performance changes as the score of environmental uncertainty change, a scatter plot was plotted (Figure 7.7). The slop of regression fit lines (predicting business performance from competitive aggressiveness in different environmental context) supports the moderating role of perceived environmental uncertainty on competitive aggressiveness →business performance relationship. The slop of regression fit lines reveals a strong relationship between competitive aggressiveness and business performance ( $R^2$  Linear = 0.586) in dynamic business environment *viz-a-viz* stable

environmental context ( $R^2$  Linear = 0.279). In an environment, where market conditions are stressful and actions of competitors are hard to predict, firms which rely upon competitive intelligence and adopt unconventional methods of competing often outperform the marketplace.

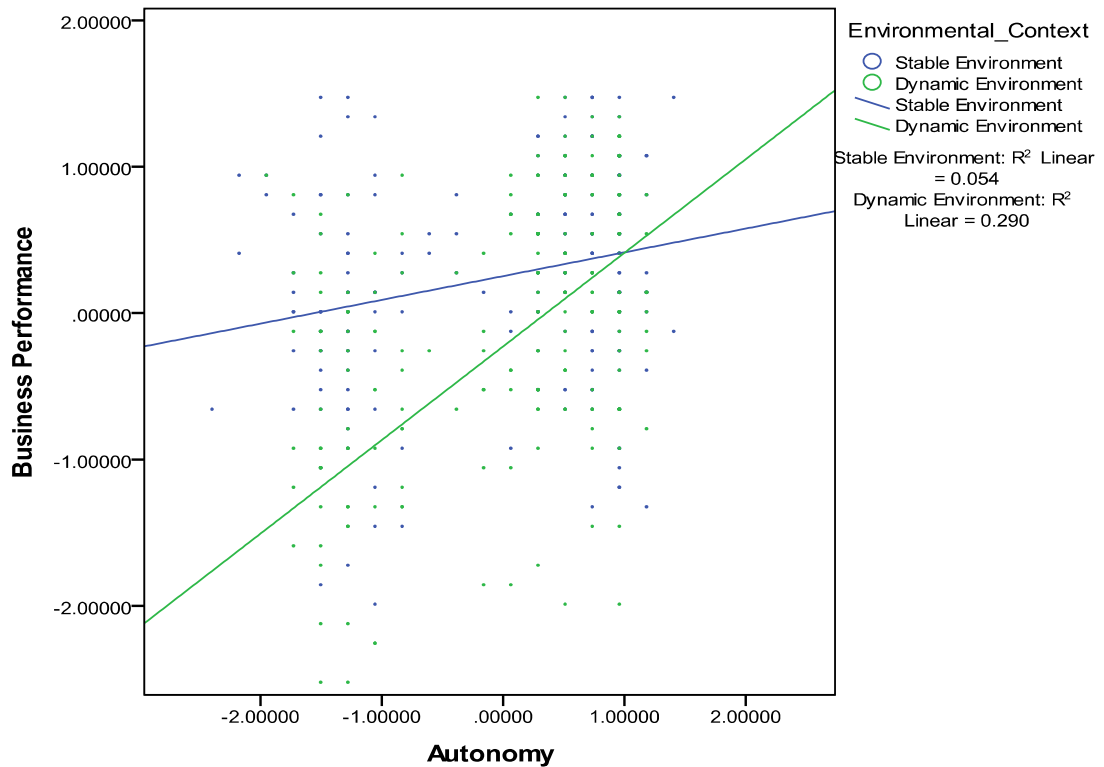


**Figure 7.7 Moderating effect of Environmental Uncertainty on Competitive Aggressiveness - Business Performance Relationship**

### **7.2.5: Moderating effect of Environmental Uncertainty on Autonomy – Business Performance Relationship**

To see the nature and strength of the relation between autonomy and business performance in different environmental context, a scatter plot (predicting business performance from autonomy at low and high score of environmental uncertainty) has been plotted and examined (Figure 7.8). The slope of regression fit lines affirms the claim that the strength of relationship between autonomy and business performance depends upon the score of environmental uncertainty. The regression fit lines indicate that in stable environmental context, autonomy abysmally influences the business performance

( $R^2$  Linear = 0.054). But there was a relatively high degree of correlation between autonomy and business performance, for dynamic environmental conditions ( $R^2$  Linear = 0.290).



**Figure 7.8 Moderating effect of Environmental Uncertainty on Autonomy - Business Performance Relationship**

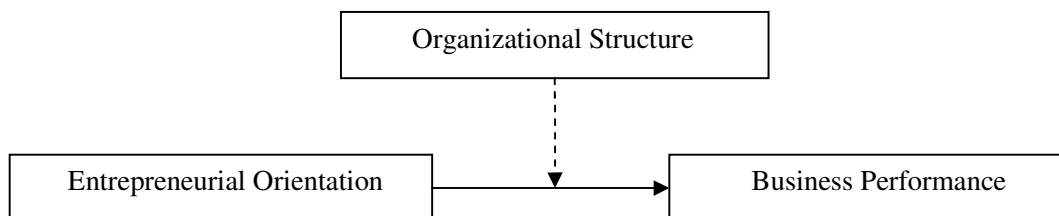
The above analysis has important implications. It implies that the perception of the manager/ entrepreneurs regarding various elements of firm's external environment has a significant impact upon the functioning of a business. Uncertainty and unpredictability of variables like: actions of competitors, tastes and preferences of customer, pace of technological developments, and the macro-economic conditions of an economy often erode the ability of managers to predict future events as well as their impact on the organization. Adoption of entrepreneurial posture is a conscious strategic response to environmental challenges. Entrepreneurial orientation equips firms with capabilities to monitor and scan firm's environment and to adjust the degree of innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy according to the needs of dynamism and complexities of the environment. Monitoring, evaluating and

disseminating information from the internal and external environment of a firm helps entrepreneurial organization in the adoption of the kind of strategic posture, which not only ensures the survival of a firm and but also produces higher market share and robust business performance.

Organizations operating in dynamic environment are more likely to be benefited from entrepreneurial behaviour than firms operating in stable environment. In dynamic environment, where conditions change rapidly and opportunities emerge on continuous basis, organizations which actively seek new opportunities, employ out of box thinking, use R&D strategies, encourage the development of radically new products and technologies, take business related chance, provide autonomy to their employees and adopt an aggressive posture, are more likely to gain over their rivals. Entrepreneurial behaviour benefits a firm by leveraging its core competencies for unique competitive advantage.

### **7.3: Moderating effect of Organizational Structure in Entrepreneurial Orientation - Business Performance relationship**

To examine the role played by organizational structure in entrepreneurial orientation - business performance relationship, multi-group moderation analysis has been applied. Organizational structure has been considered as a moderating variable and its impact on the nature and strength of entrepreneurial orientation - business performance relationship has been studied through Chi-square difference test - within the framework of structural equation modeling.



**Figure 7.9 Conceptualized Model of Moderating Effect of Organizational Structure on Entrepreneurial Orientation – Business Performance Relationship**

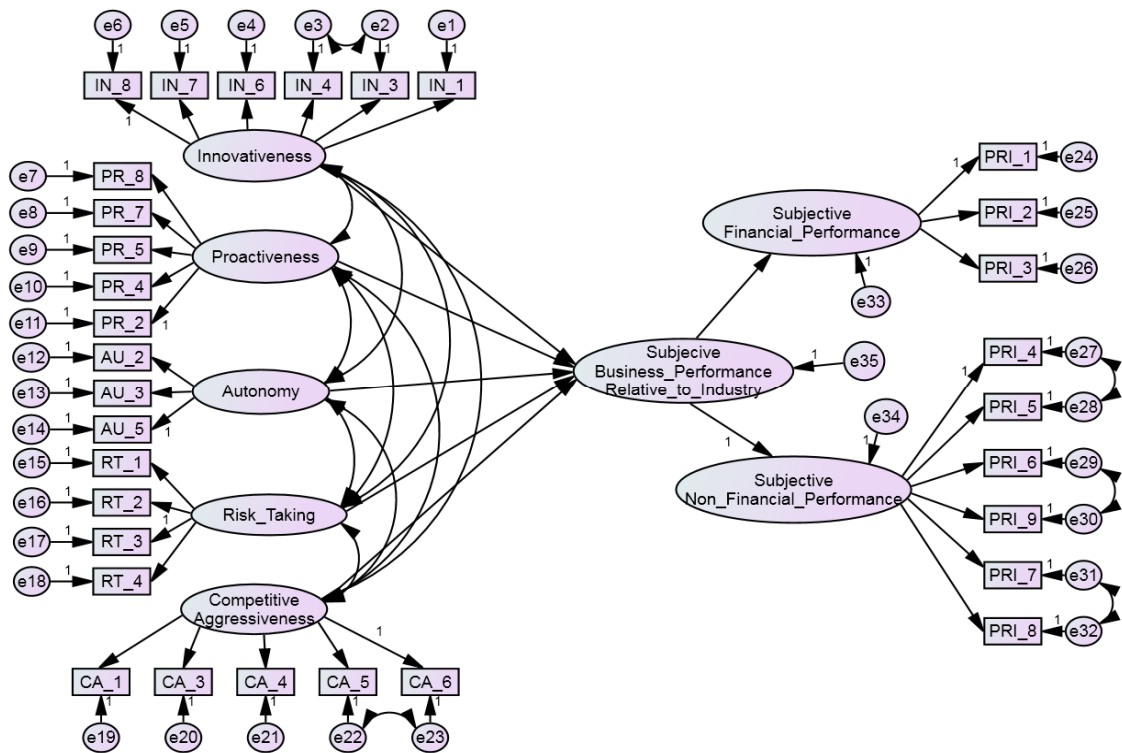


The summated score of organizational structure has been classified into two unique categories (Table 7.3). Low score reflects the inclination of a firm towards mechanistic form of organization - restricted channels of communication, centralized decision-making, a formalized planning system, tight systems of control, and a constrained level of flexibility. This category has been named as ‘Mechanistic firms’. ‘Organic firms’ on the contrary, portrays firm’s with open channels of communication, free flow of information across different layers of management, participative style of decision making, a culture of openness and trust, and less formalization.

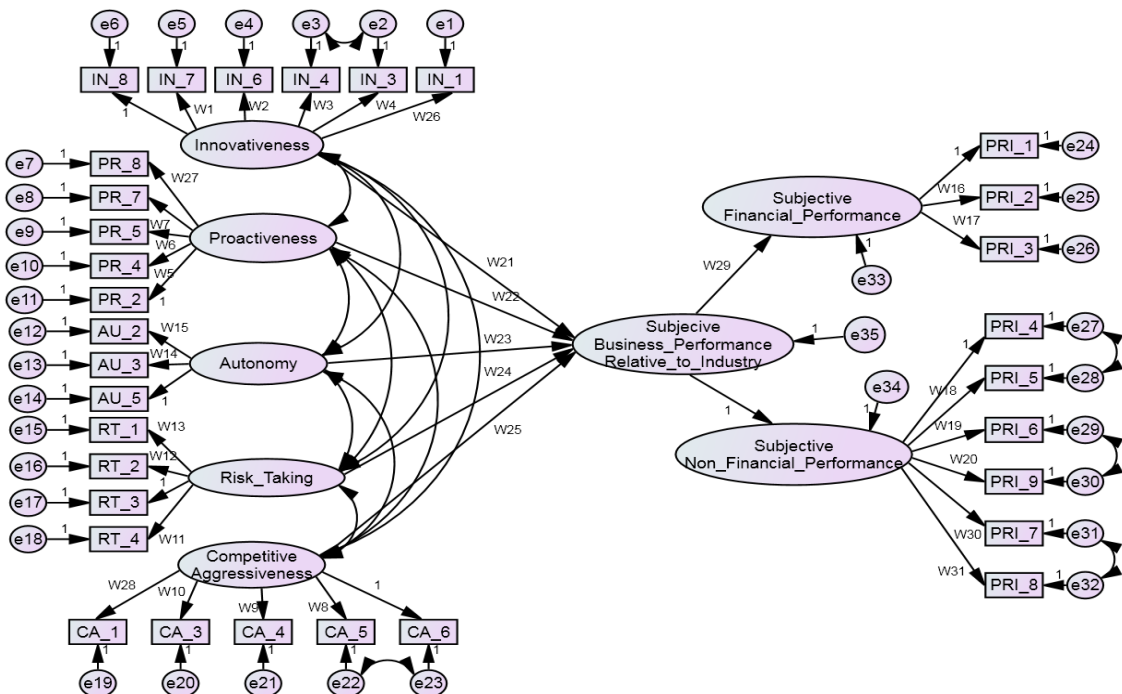
**Table 7.3 Classification of sample based upon the score of Organizational Structure**

Parameter	Classification	Score	Theoretical Possible Range
Organizational Structure	Mechanistic firms	Up to 24	6 to42
	Organic firms	More than 24	

Two runs i.e. constrained and unconstrained model of entrepreneurial orientation – business performance relationship has been under taken to explore the moderating effect of organizational structure on the relationship between entrepreneurial orientation and business performance. The purpose was to see how the pattern of measurement and structural parameter estimates vary across organic and mechanistic firms. In constrained model, the measurement and structural parameter estimates were constrained to be equal across groups (Figure 7.11), whereas in unconstrained model no equality constraints were imposed on all freely estimated parameters (Figure 7.10). The result of unconstrained model reveals a Chi-square value of 1424.687, with 884 *df*. CFI = .943 and RMSEA = .037 were significant and represents a good fit. In constrained model, Chi-square index is 1460.674 with 915 *df*. The CFI and RMSEA indices of constrained model have been observed as .943 and .036, which were significant.



**Figure 7.10 Unconstrained Model of Entrepreneurial Orientation - Business Performance Relationship for different Organizational Configurations**



**Figure 7.11 Constrained Model of Entrepreneurial Orientation- Business Performance Relationship for different Organizational Configurations**

Given the model fit indices of both constrained model and unconstrained model, the difference between these two models has been assessed through Chi-square difference test. Comparison of Chi-square value of 1460.674 (with 915 *df*) of constrained model with a Chi-square value of 1424.687 (with 884 *df*) of unconstrained model, where no equality constraints were imposed, yields a Chi-square difference value of 35.987 with 31 *df*. Inspection of Chi-square critical value table - at 5 percent level of significance with 31 degrees of freedom, reveals a cut off of 44.98 for the rejection of null hypothesis of group invariance. The Chi-square difference of 35.987 does not fall under the critical region of rejection i.e. evidence produced by model suggest that the difference in the pattern of measurement and structural parameter estimates across constrained and unconstrained model were not large enough to reject the null hypothesis of group invariance. A non significant Chi-square difference reveals that entrepreneurial orientation - business performance relationship remain group invariant and any inequality of parameters across the mechanistic and organic firm can be attributed to the chance factor. Hence, the hypothesis H<sub>8</sub> i.e. *The entrepreneurial orientation – business performance relationship is not moderated by organizational structure* has been accepted.

**Table 7.4 Moderation Effect of Organizational Structure on Entrepreneurial Orientation - Business Performance Relationship**

Model Fit Characteristics	Unconstrained Model (Entrepreneurial Orientation – Business Performance relationship)	Constrained Model (Entrepreneurial Orientation – Business Performance relationship)	Model Differences ( $\chi^2$ )
$\chi^2$	1424.687	1460.674	35.987
Degrees of Freedom	884	915	31
CFI	0.943	0.943	--
RMSEA	0.037	0.036	0.001

The above findings have important implications. Though, the literature suggests that organic structure has significant impact on entrepreneurial orientation - business performance relationship (Naman and Slevin, 1993; Kreiser and Davis 2010), yet the above results prove that entrepreneurial orientation - business performance relationship is not moderated by organizational structure. It implies that in Indian context, entrepreneurs can adopt either mechanistic or organic structure for achieving high business performance.

Mechanistic structure, reflected through high levels of bureaucracy, restricted channels of communication, centralized decision-making, formalized planning system, tight control, and a constrained level of flexibility, could be a tool for organizational effectiveness. Mechanistic approaches of organization rely upon the strict adherence of well defined rules and regulations and guide various members of an organization about ideal ways of handling routine problems. Due to its application and acceptance of impersonal rules - mechanistic structure may bring uniformity in individual behaviour and may reduce the possibility of unwanted outcomes by enhancing functional clarity. But at the same time literature affirms that high degree of formalization makes the structure bureaucratic and adversely affects the creativity and novelty of a firm. Mechanistic structure is more appropriate for reinforcing past behaviour but such a bureaucratic form of organization may not be an ideal alternative for handling situations, where a novel and rapid response is required from organization. However, in an environment where business conditions change significantly and rapidly, the tried and tested practices of past may become inappropriate.

Organic structure, characterized by open channels of communication, equal distribution of knowledge, participative style of decision making, lower vertical differentiation, lesser formalization and higher integration, presents an adaptive form of organization. It allows firm's to exhibit a rapid response to changing environmental conditions. It equips organizational members with the flexibility and necessary freedom to work outside the purview of organizational constraints. Organic structure promotes novelty and actually exercises autonomy (Quinn, 1985). It increases the morale of the employees and encourages them to go for the opportunities which seem beyond the current capabilities of the firm.

Both kinds of structure have their own significance, organic structure is needed to generate innovations, whereas mechanistic structure is required to implement them. Mechanistic structure, due to the strict adherence of rules and regulations, may produce better financial result for short run, but it may gradually lose its usefulness due to the higher needs for innovation and creativity especially in changing business environment.

## **CHAPTER VIII**

# **FINDINGS, IMPLICATIONS, CONCLUSION AND SUGGESTIONS**

This chapter concludes the study with key findings, their implications for management practitioners, entrepreneurs and future researchers.

### **8.1: Findings**

Based upon the analysis and interpretation of data, in the previous chapters, the study comes out with following prominent findings:

1. The results of the present study reveal that entrepreneurial orientation is a multi-dimensional construct, having innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy as its integral dimensions.
2. Though all five dimensions of entrepreneurial orientation are unique in nature but a high degree of positive correlation has been observed among these dimensions.
3. Study reveals that there is no significant association between age of a firm and the kind of strategic posture (entrepreneurial orientation) adopted by a firm. Firms of any age group can adopt any degree of entrepreneurial orientation. It means that younger as well as mature firms can be equally entrepreneurial.
4. There is a significant association between the size of a firm and the extent of entrepreneurial orientation demonstrated by a firm. Large firms, both in terms of annual turnover and number of employees, differ significantly from smaller firms while introducing new products and services, adopting novel practices, undertaking risky alternatives, adopting a forward looking perspective and demonstrating an aggressive behaviour towards their rivals.
5. The degree of autonomy provided to employees is not significantly associated with the size of firm (based on number of employees). Firms with a larger number of employees can be conservative in their approach while granting autonomy to

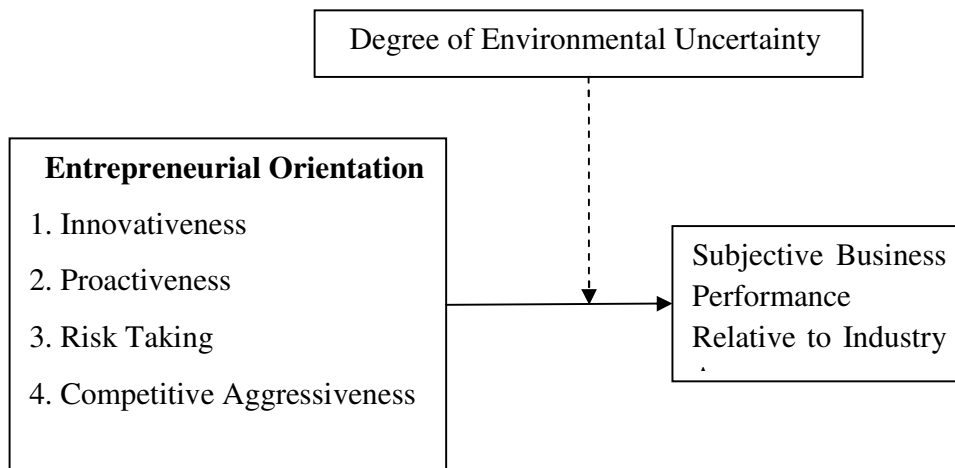
their employees whereas a firm with smaller number of employees can provide sufficient autonomy to their employees and vice versa.

6. There is no significant association between the nature of industry and degree of entrepreneurial orientation. The deconstruction of entrepreneurial orientation construct also reveals that the nature of firm is not significantly associated with three dimensions of entrepreneurial orientation (i.e. innovativeness, proactiveness and competitive aggressiveness). However, the degree of autonomy and risk-taking are significantly associated with nature of firm, though the extent of association is not very strong.
7. There is significant association between type of organization and degree of entrepreneurial orientation. The deconstruction of entrepreneurial orientation construct also reveals that type of organization is significantly associated with three dimensions of entrepreneurial orientation (i.e. innovativeness, proactiveness and competitive aggressiveness). However, the autonomy and risk taking are not significantly associated with the type of organization.
8. The study finds significant and positive relationship between entrepreneurial orientation and business performance. All of the six proposed models of entrepreneurial orientation - business performance relationship have demonstrated that higher entrepreneurial orientation results in better business performance.
9. The comparison of conceptualized models reveals that 'Entrepreneurial Orientation (Multi-dimensional) → Subjective Business Performance Relative to Industry' best describes the relationship between entrepreneurial orientation and business performance. Within this model, the study finds that except for autonomy, all other dimensions of entrepreneurial orientation i.e. innovativeness, proactiveness, risk taking and competitive aggressiveness significantly predict the business performance.
10. Environment uncertainty moderates the entrepreneurial orientation - business performance relationship. It has been found that the strength of entrepreneurial orientation- business performance relationship differs in different environmental contexts. In dynamic environmental settings, firms with higher entrepreneurial

orientation are in a better position to achieve robust business performance whereas in stable environmental conditions, higher entrepreneurial orientation does not help the business to gain much.

11. Organization structure does not moderate the entrepreneurial orientation - business performance relationship. The strength of entrepreneurial orientation - business performance relationship remains invariant for both organic and mechanistic organizational structures.

Based upon above finding, redefined model of entrepreneurial orientation - business performance relationship is presented below:



**Figure 8.1 Redefined Model of Entrepreneurial Orientation - Business Performance Relationship**

## **8.2: Implications**

The findings of the study have important implications for academicians, management practitioners and policy makers. The study reveals that entrepreneurial orientation is a multi-dimensional construct and various dimensions of entrepreneurial orientation presents unique aspects of the strategic posture of a firm. Therefore, deconstruction of the entrepreneurial orientation construct becomes necessary so that organizational decision makers may focus specifically on those dimensions which significantly influence business performance rather than focusing on all dimensions of entrepreneurial orientation.

Study implies that firms of all genres should consider being actively involved in entrepreneurial behaviour. The degree of entrepreneurial orientation is either not significantly associated or weakly associated with the diverse characteristics of a firm. The adoption of entrepreneurial posture is equally feasible for the firms of different age groups, different sizes, different types and different nature. The policy makers of any kind of firm should not feel constrained while adopting entrepreneurial posture.

The positive and significant impact of entrepreneurial orientation on business performance calls for adoption of entrepreneurial posture by all firms, to gain sustainable competitive advantage. The findings suggest that four dimensions of entrepreneurial orientation viz. innovativeness, proactiveness, risk taking and competitive aggressiveness significantly drive business performance in the Indian context.

The finding that innovativeness is positively related to business performance supports the extant literature (Lumpkin and Dess, 1996; Kreiser and Davis, 2010). Firms can gain competitive superiority by producing even very ordinary and standard products by highly innovative processes. Innovativeness equips a firm with the capabilities to quickly enter into new markets that might represent a better strategic fit for their innovation-based capabilities and are more attuned to current and emerging market needs (Morris *et al.*, 2011). Innovativeness revises the firm's knowledge base; allows it to generate new products, services, processes, technologies, techniques and organizational systems (Winterton, 1997; Hitt *et al.*, 2001; Bhuian *et al.*, 2005). Introduction of new products and services helps a firm in exploring new markets, realigning its offerings with the changing market conditions, and creating unique brand image for the products and services of the organization. New technology and techniques provide the advantage of low cost, rapid production, and improved quality. The process of innovation transforms a firm fundamentally by enhancing its internal capabilities, making it more flexible and adaptable to market pressures (Rosenbusch *et al.*, 2010).

Significant positive relation of proactiveness with business performance has implications for Indian firms. Proactiveness keeps a firm alert by exposing them to new technologies, making them aware of marketplace trends, and helping them in evaluating new possibilities. It helps the decision makers in reconfiguring the behaviour of its



members, and renewing its resources and capabilities according to industry changes. Proactive behaviour makes a firm more responsive toward market signals and provides a base for generation of new ideas, products or services (Kaplan 1998; O'Connor and Veryzer, 2001; McDermott and O'Connor, 2002; Tang *et al.*, 2008). Proactiveness creates a room for innovation by seeking the attention of firm on various future and hidden needs of customers. It helps a firm in finding an attractive niche for its future growth and development. By introducing new products/ services and entering into those segments which competitors have not yet recognized, an entrepreneurial firm can set the 'rules of the game' and can become the pioneer of industry.

The significant and positive relationship between risk taking propensity and business performance highlights the importance of risk taking behaviour for the survival and success of a firm. New products and services will not come into existence, unless a firm assumes risk. Risk taking propensity equips entrepreneurial firms with the ability to act quickly on emerging opportunities. It gives them necessary courage to break away from the tried-and-tested and to take business related chance. According to Covin and Slevin (1991), firms which do not take business related chance may not be able to maintain a strong industry standing relative to more aggressive competitors. By venturing into the unknown new projects, an entrepreneurial firm, if successful, can fuel its growth and might achieve a dominant position in the market.

The positive and significant contribution of competitive aggressiveness in business performance implies that managers of Indian firms should remain assertive in marketplace. Competitive aggressiveness increases causal ambiguity (Reed and DeFillippi, 1990) and might protect the firm's competitive advantage (Hamel and Prahalad, 1990; Prahalad and Hamel, 1994). Far and wide tracking of competitors' actions generate valuable foresight for strategy making and might help managers in identifying areas where a firm can differentiate itself from its rivals and explore ways to make it difficult for the rival to imitate firm's products and strategic moves.

However, one dimension of entrepreneurial orientation i.e. autonomy does not significantly predict business performance. Though the entrepreneurship literature

suggests the unique and significant contribution of autonomy towards business performance, yet the current study suggests otherwise.

The probable reason for this may be the current socio-cultural business environment in India, which promotes conservative approach towards autonomy. Autonomy involves freeing organizational members, both individuals and teams, from existing norms of organization, to develop and implement ideas that are innovative, unique and different from existing course of actions. Indian business culture promotes more of formal relationship and strict adherence of rules and regulations. However, the conservative approach towards autonomy may suit the existing business environment. It will not be feasible in the emerging corporate scenario and changing business environment in India.

The findings suggest that the entrepreneurial orientation - business performance relationship is moderated by degree of environmental uncertainty. Organizations operating in dynamic environment are more likely to be benefited from entrepreneurial behaviour than firms operating in stable environment. In dynamic environment, where conditions change rapidly and opportunities emerge on continuous basis, organizations which actively seek new opportunities, employ out of box thinking, use R&D strategies, encourage the development of radically new products and technologies, take business related chance, provide autonomy to their employees and adopt an aggressive posture, are more likely to gain over their rivals. Entrepreneurial behaviour benefits a firm by leveraging its core competencies for unique competitive advantage. Uncertainty and unpredictability of environmental elements force an organization to adopt less hierarchical and more entrepreneurial posture. Entrepreneurial posture enables organizations to monitor and evaluate information from firm's environment and to adjust the degree of innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy to prevailing environmental conditions.

Study finds that entrepreneurial orientation - business performance relationship is not moderated by organizational structure. It implies that in Indian context, entrepreneurs can adopt either mechanistic or organic structure for achieving high business performance.

Mechanistic structure, reflected through high levels of bureaucracy, restricted channels of communication, centralized decision-making, formalized planning system, tight control, and a constrained level of flexibility, could be a tool for organizational effectiveness. Mechanistic approaches of organization rely upon the strict adherence of well defined rules and regulations and guide various members of an organization about ideal ways of handling routine problems (Robbins, 1993; Lam and Lundvall, 2006). Due to its application and acceptance of impersonal rules - mechanistic structure may bring uniformity in individual behaviour and may reduce the possibility of unwanted outcomes by enhancing functional clarity. But at the same time literature affirms that high degree of formalization makes the structure bureaucratic and adversely affects the creativity and novelty of a firm (Lumpkin and Dess, 1996). Mechanistic structure is more appropriate for reinforcing past behaviour but such a bureaucratic form of organization may not be an ideal alternative for handling situations, where a novel and rapid response is required from organization. However, in an environment where business conditions change significantly and rapidly, the tried and tested practices of past may become inappropriate.

Organic structure, characterized by open channels of communication, equal distribution of knowledge, participative style of decision making, lower vertical differentiation, lesser formalization and higher integration, presents an adaptive form of organization. It allows firm's to exhibit a rapid response to changing environmental conditions. It equips organizational members with the flexibility and necessary freedom to work outside the purview of organizational constraints. Organic structure promotes novelty and actually exercises autonomy (Quinn, 1985). It increases the morale of the employees and encourages them to go for the opportunities which seem beyond the current capabilities of the firm.

Both kinds of structure have their own significance, organic structure is needed to generate innovations, whereas mechanistic structure is required to implement them (Dumaine, 1991). Mechanistic structure, due to the strict adherence of rules and regulations, may produce better financial result for short run, but it may gradually lose its usefulness due to the higher needs for innovation and creativity especially in changing business environment.

### **8.3: Conclusion and Suggestions**

The study significantly enhances the entrepreneurship literature. Though we do not claim the generalization of findings, the study has contributed in more than one ways. The study contributes to the literature by providing validated scales for entrepreneurial orientation and business performance. The results of the study extend the literature by producing empirical evidence in support of entrepreneurial orientation - business performance relationship in the Indian context. The study justifies the use of multi-dimensional view of entrepreneurial orientation. The comparison of the uni-dimensional and multi-dimensional conceptualization of entrepreneurial orientation not only advances theory but also highlights the uniqueness of each dimension of entrepreneurial orientation. The study justifies the use of subjective measures of business performance in measuring the performance of an organization. It contributes to the scholarly conversation about contextual nature of entrepreneurial orientation by providing valuable insights regarding the moderating role of environmental uncertainty in entrepreneurial orientation - business performance relationship.

The findings of the study are based on input from Indian firms. Future researchers may study the moderation effect of organizational and external environmental factors in the context of other emerging economies. The findings of the current study are based upon cross-sectional research design and give a static picture of the entrepreneurial orientation – business performance relationship. Future studies may assess the effect of change in the strategic posture of a firm on the business performance.

The homogeneity of the population is one of the significant factors which could affect the finding of any study. It is quite possible that relationship between entrepreneurial orientation and business performance varies from sector to sector and by restricting the scope of the study to a particular sector, industry specific inferences can be drawn. Therefore, future researchers may restrict their study to a specific industry to generate industry specific insights about entrepreneurial orientation - business performance relationship. The comparison of two or more industries could be another area of investigation. Similarly, the comparison of large, medium and small scale industry might provide additional insight about entrepreneurial orientation- business

performance relationship. Future studies may wish to conduct comparative studies on entrepreneurial orientation - business performance relationship, to study the cross-cultural impact. Future researchers can incorporate mediation analysis using other variables as mediators in entrepreneurial orientation - business performance relationship.

## BIBLIOGRAPHY

- Adcock, R., and Collier, D. (2001), "Measurement validity: A shared standard for qualitative and quantitative research", *The American Political Science Review*, Vol. 95, No. 3, pp. 529-546.
- Adegbite, S. A., Ilori, M. O., Irefin, I. A., Abereijo, I. O., and Aderem, H. A. (2008), "A study of entrepreneurial orientation of small-scale enterprise operators in Nigeria", *IFE Psychologia: An International Journal*, Vol. 16, No. 1, pp. 92-106.
- Ahmed, P. K. (1998), "Culture and climate for innovation", *European Journal of Innovation Management*, Vol. 1, No. 1, pp. 30-43.
- Aiken, L. S., West, S. G., and Reno, R. R. (1991), *Multiple Regression: Testing and Interpreting Interactions*, Newbury Park, CA: Sage.
- Alasadi, R., and Abdelrahim, A. (2008), "Analysis of small business performance in Syria", *Education, Business and Society: Contemporary Middle Eastern Issues*, Vol. 11, No. 1, pp. 50-62.
- Aldrich, H. E. (1979), *Organizations and Environments*, Englewood Cliffs, NJ: Prentice Hall.
- Aldrich, H. E. (1990), "Using an ecological perspective to study organizational founding rates", *Entrepreneurship Theory and Practice*, Vol. 14, No. 3, pp. 7-24.
- Alvarez, S. A., and Barney, J. B. (2007), "Discovery and creation: Alternative theories of entrepreneurial action", *Strategic Entrepreneurship Journal*, Vol. 1, No. 2, pp. 11-26.
- Analoui, F., and Karami, A. (2003), *Strategic Management in Small and Medium Enterprises*, London: Thomson Learning.
- Anastasi, A. (1976), *Psychological Testing*, Oxford, England: Macmillan.
- Antic, L., and Sekulic, V. (2006), "New paradigm of business performance measurement in contemporary business conditions", *Economics and Organization*, Vol. 3, No. 1, pp. 69-77.
- Antoncic, B., and Hisrich, R. D. (2004), "Corporate entrepreneurship contingencies and organizational wealth creation", *Journal of Management Development*, Vol. 23, No. 6, pp. 518-550.
- Armour, H. O. and Teece, D. J. (1978), "Organization structure and economic performance: A test of the multidivisional hypotheses", *Bell Journal of Economics*, Vol. 9, No. 1, pp. 106-122.
- Atuahene-Gima, K., and Ko, A. (2001), "An empirical investigation of the effect of market orientation and entrepreneurship orientation alignment on product innovation" *Organization Science*, Vol. 12, No. 1, pp. 54-74.
- Audretsch, D.B., Lehmann, E. E., and Plummer, L.A. (2009), "Agency and governance in strategic entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 33, No.1, pp. 149-166.

- Awang, A., Khalid, S. A., Kassim, K. M., Ismail, M., Zain, R. S., and Madar, A. R. S. (2009), "Entrepreneurial orientation and performance relations of Malaysian Bumiputera SMEs: The impact of some perceived environmental factors", *International Journal of Business and Management*, Vol. 4, No. 9, pp. 84-94.
- Aziz, S. A., and Mahmood, R. (2011), "The relationship between business model and performance of manufacturing small and medium enterprises in Malaysia", *African Journal of Business Management*, Vol. 5, No. 2, pp. 8918-8932.
- Bagozzi, R. P., Yi, Y., and Phillips, L. W. (1991), "Assessing construct validity in organizational research", *Administrative Science Quarterly*, Vol. 36, No. 3, pp. 421-458.
- Baird, I. S., and Thomas, H. (1985), "Toward a contingency model of strategic risk taking", *Academy of Management Review*, Vol. 10, No. 2, pp. 230-243.
- Baker, T., and Nelson, R. E. (2005), "Creating something from nothing: Resource construction through entrepreneurial bricolage", *Administrative Science Quarterly*, Vol. 50, No. 3, pp. 329-366.
- Baker, W. E., and Sinkula, J. M. (2009), "The complementary effects of market orientation and entrepreneurial orientation on profitability in small businesses", *Journal of Small Business Management*, Vol. 47, No. 4, pp. 443-464.
- Balabanis, G. I., and Katsikea, E. S. (2003), "Being an entrepreneurial exporter: does it pay?", *International Business Review*, Vol. 12, No. 1, pp. 233-252.
- Baron, R. M., and Kenny, D. A. (1986), "The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51, No. 6, pp. 1173-1189.
- Barrett, H., Balloun, J. L., and Weinstein, A. (2000), "Marketing mix factors as moderators of the corporate entrepreneurship-business performance relationship-a multistage, multivariate analysis", *Journal of Marketing Theory and Practice*, Vol. 8, No. 2, pp. 50-62.
- Barringer, B. R., and Bluedorn, A. C. (1999), "The relationship between corporate entrepreneurship and strategic management", *Strategic Management Journal*, Vol. 20, No. 5, pp. 421-444.
- Beamish, P. W., Karavis, L., Goerzen, A., and Lane, C. (1999), "The relationship between organizational structure and export performance" *Management International Review*, Vol. 39, No. 1, pp. 37-54.
- Bearse, P. J. (1982), "A study of entrepreneurship by region and SMSA size", *Frontiers of Entrepreneurship Research*, Vol. 2, No. 1, pp. 78-112.
- Becherer, R. C., and Maurer, J. G. (1997), "The moderating effect of environmental variables on the entrepreneurial and marketing orientation of entrepreneur-led firms", *Entrepreneurship Theory and Practice*, Vol. 22, No. 1, pp. 47-58.
- Beck, C. T., and Gable, R. K. (2001), "Ensuring content validity: An illustration of the process", *Journal of Nursing Measurement*, Vol. 9, No. 2, pp. 201-215.

- Begley, T. M., and Boyd, D. P. (1987), "Psychological characteristics associated with performance in entrepreneurial firms and smaller businesses", *Journal of Business Venturing*, Vol. 2, No. 1, pp. 79-93.
- Bell, C. G., and McNamara, J. E. (1991), *High-tech Ventures: The Guide for Entrepreneurial Success*, MA: Perseus Books Publishing.
- Bentler, P. M., and Bonett, D. G. (1980), "Significance tests and goodness of fit in the analysis of covariance structures", *Psychological Bulletin*, Vol. 98, No. 3, pp. 588-601.
- Bentler, P. M. (1990), "Comparative Fit Indexes in Structural Models", *Psychological Bulletin*, Vol. 107, No. 2, pp. 238-246.
- Bhuiyan, S. N., Menguc, B., and Bell, S. J. (2005), "Just entrepreneurial enough: The moderating effect of entrepreneurship on the relationship between market orientation and performance", *Journal of Business Research*, Vol. 58, No. 1, pp. 9-17.
- Birkinshaw, J. (1995), "Encouraging entrepreneurial activity in multinational corporations", *Business Horizons*, Vol. 38, No. 3, pp. 32-38.
- Birley, S. and Westhead, P. (1990), "Growth and Performance contrasts between 'Types' of small firms", *Strategic Management Journal*, Vol. 11, No. 7, pp. 535-557.
- Bititci, U. S., Carrie, A. S. and McDevitt, L. (1997), "Integrated performance measurement systems: a development guide", *International Journal of Operations and Production Management*, Vol. 17, No. 11, pp. 5-22.
- Bititci, U. S., Turner, T., and Begemann, C. (2000), "Dynamics of performance measurement systems", *International Journal of Operations and Production Management*, Vol. 20, No. 6, pp. 692-704.
- Bourgeois, L. J. (1980), "Strategy and environment: A conceptual integration", *Academy of Management Review*, Vol. 5, No. 1, pp. 25-39.
- Bourgeois, L. J. (1984), "Strategic management and determinism", *Academy of Management Review*, Vol. 9, No. 4, pp. 586-596.
- Bourgeois, L. J. (1985), "Strategic goals, perceived uncertainty, and economic performance in volatile environments", *Academy of Management Journal*, Vol. 28, No. 3, pp. 548-573.
- Bourne, M., Mills, J., Wilcox, M., Neely, A., and Platts, K. (2000), "Designing, implementing and updating performance measurement systems", *International Journal of Operations and Production Management*, Vol. 20, No. 7, pp. 754-71.
- Bourne, M., Neely, A., Mills, J. and Platts, K. (2003), "Implementing performance measurement systems: a literature review", *International Journal of Business Performance Management*, Vol. 5, No. 1, pp. 1-24.
- Bower, J. L. (1970), *Managing the Resource Allocation Process: A study of Corporate Planning and Investment*, Boston, MA: Harvard University Press.



- Bowman, E. H. (1980), "A risk/return paradox for strategic management", *Sloan Management Review*, Vol. 21, No. 3, pp. 17-31.
- Boyd, B. K., Dess, R., and Rasheed, A. M. A. (1993), "Divergence between archival and perceptual measures of the environment: causes and consequences", *Academy of Management Review*, Vol. 18, No. 2, pp. 204-226.
- Bradmore, D. (1996), *Competitive Advantage: Concepts and Cases*, Sydney: Prentice Hall.
- Breaugh, J. A. (1999), "Further investigation of the work autonomy scales: Two studies", *Journal of Business and Psychology*, Vol. 13, No. 3, pp. 357-373.
- Brett, J. M., and Drasgow, F. (Eds.). (2002), *The Psychology of Work: Theoretically based Empirical Research*, Mahwah, NJ: Lawrence Erlbaum Associates.
- Brickley, J., and Dark, F. (1987), "The choice of organizational form: The case of franchising", *Journal of Financial Economics*, Vol. 18, No. 1, pp. 401-420.
- Brock, D. M. (2003), "Autonomy of individuals and organizations: Towards a strategy research agenda", *International Journal of Business and Economics*, Vol. 2, No. 1, pp. 57-73.
- Brockhaus, R. H. (1980), "Risk taking propensity of entrepreneurs", *Academy of Management Journal*, Vol. 23, No. 3, pp. 509-520.
- Brockman, B. K., and Morgan, R. M. (2003), "The role of existing knowledge in new product innovativeness and performance", *Decision Science*, Vol. 34, No. 2, pp. 385-420.
- Brookshire, J. E. (2009), "Does the firm size matter on firm entrepreneurship and performance? US apparel import intermediary case", *Journal of Small Business and Enterprise Development*, Vol. 16, No. 1, pp. 132-146.
- Brown, M. G. (1996), *Keeping Score: Using the Right Metrics to Drive World-class Performance*, NY: Quality Resources.
- Brown, S. L., and Eisenhardt, K. M. (1998), *Competing on the edge: Strategy as structured chaos*, Boston, MA: Harvard Business Press.
- Brown, T. E., Davidsson, P., and Wiklund, J. (2001), "An operationalization of Stevenson's conceptualization of entrepreneurship as opportunity-based firm behaviour", *Strategic Management Journal*, Vol. 22, No.10, pp. 953-968.
- Brush, C., and Vanderwerf, P. (1992), "A comparison of methods and sources for obtaining estimates of new venture performance", *Journal of Business Venturing*, Vol. 7, No. 2, pp. 157-170.
- Brush, C. G., and Brush, C. G. (2006), *Growth-oriented women entrepreneurs and their businesses: A global research perspective*, London: Edward Elgar Publishing.
- Burgelman, R. A. (1983), "Corporate entrepreneurship and strategic management: Insights from a process study", *Management Science*, Vol. 29, No. 12, pp. 1349-1363.
- Burgelman, R. A., and Andrew, S. (2001), *Strategy is destiny: How strategy-making shapes a company's future*, NY: The Free Press.

- Burgelman, R. A., and Sayles, L. R. (1986), *Inside Corporate Innovation: Strategy, Structure and Managerial skills*, NY: The Free Press.
- Burns, T. and Stalker, G.M. (1961), *The Management of Innovation*, London: Tavistock.
- Burton, R. M. and Obel, B., (2004), *Strategic Organizational Diagnosis and Design: The Dynamics of Fit*, MA, USA: Springer/Kluwer Academic Publishers.
- Burton, R. M., DeSanctis, G. and Obel, B., (2006), *Organizational Design: A Step by Step Approach*, Cambridge, UK: Cambridge University Press.
- Busemeyer, J. R., and Wang, Y. M. (2000), "Model comparisons and model selections based on generalization criterion methodology", *Journal of Mathematical Psychology*, Vol. 44, No. 1, pp. 171-189.
- Bygrave, W. D., and Hofer, C. W. (1991), "Theorizing about entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 16, No. 2, pp. 13-22.
- Byrne, B. M. (2013), *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming*, NY: Routledge.
- Campbell, D. T., and Fiske, D. W. (1959), "Convergent and discriminant validation by the multitrait-multi method matrix", *Psychological Bulletin*, Vol. 56, No. 2, pp. 81-105.
- Campbell, J. P. (1990), "Modeling the performance prediction problem in industrial and organizational psychology", in Dunnette, M. D., and L. M. Hough, L. M. (2nd ed.), *Handbook of Industrial and Organizational Psychology* (271-326), CA: Consulting Psychologists Press.
- Cantillon, R. (1734), *Essai sur la nature du commerce en general, Essay on the Nature of General Commerce*, translated by Henry, H. (1892), London: Macmillan.
- Capon, N., Farley, J., and Hoenig, S. (1990), "Determinants of financial performance: A meta-analysis", *Management Science*, Vol. 36, No. 10, pp. 1143-1159.
- Cardinaels, E., and Veen-Dirks, P. M. V. (2010), "Financial versus non-financial information: The impact of information organization and presentation in a Balanced Scorecard", *Accounting, Organizations and Society*, Vol. 35, No. 6, pp. 565-578.
- Carland, J. C., Carland, J. W., and Stewart, W. H. (1999), "Is risk taking an attribute of entrepreneurship?: A comparative analysis", *Academy of Entrepreneurship Journal*, Vol. 5, No. 2, pp. 36-49.
- Carland, J. W., Hoy, F., Boulton, W. R., and Carland, J. A. C. (1984), "Differentiating entrepreneurs from small business owners: A conceptualization", *Academy of Management Review*, Vol. 9, No. 2, pp. 354-359.
- Carmines, E.G., and Zeller, R. A. (1979), *Reliability and Validity Assessment*, Beverly Hills, Calif: Sage.
- Carree, M., Van Stel, A., Thurik, R., and Wennekers, S. (2002), "Economic development and business ownership: an analysis using data of 23 OECD countries in the period 1976–1996", *Small Business Economics*, Vol. 19, No. 3, pp. 271-290.

- Certo, T. S., Moss, T. W., and Short, J. (2009), "Entrepreneurial orientation: An Applied Perspective", *Business Horizons*, Vol. 52, No. 1, pp. 319-324.
- Chadwick, K., Barnett, T., and Dwyer, S. (2008), "An empirical analysis of the entrepreneurial orientation scale", *Journal of Applied Management and Entrepreneurship*, Vol. 13, No. 4, pp. 64-85.
- Chandler, A. D. (1992), *Strategy and Structure*, Cambridge: M.I.T. Press.
- Chandler, G. N., and Hanks, S. H. (1993), "Measuring the performance of emerging businesses: A validation study", *Journal of Business Venturing*, Vol. 8, No. 5, pp. 391-408.
- Chang, H. J., Lin, S. J., Murray, L. W., Efendioglu, A. M., Khoshbakht, H., and Salteh, H. M. (2011), "Entrepreneurial intensity in catering Industry: A case study on wang group in Taiwan", *Business and Management Review*, Vol. 1, No. 9, pp. 1-12.
- Chattell, A. (1995), *Managing for the Future*, NY: St. Martin's Press.
- Chen, C. J., and Huang, J. W. (2007), "How organizational climate and structure affect knowledge management - The social interaction perspective", *International Journal of Information Management*, Vol. 27, No. 2, pp. 104-118.
- Chen, M. J., and Hambrick, D. C. (1995), "Speed, stealth, and selective attack: How small firms differ from large firms in competitive behaviour", *Academy of Management Journal*, Vol. 38, No. 2, pp. 453-482.
- Cherryholmes, C. H. (1988), "Construct validity and the discourses of research", *American Journal of Education*, Vol. 96, No. 3, pp. 421-457.
- Child, J., (1972), "Organizational structure and strategies of control: Replication of the aston study", *Administrative Science Quarterly*, Vol. 17, No. 2, pp. 163-177.
- Churchill Jr, G. A. (1979), "A paradigm for developing better measures of marketing constructs", *Journal of Marketing Research*, Vol. 16, No. 1, pp. 64-73.
- Clercq, D., Dimov, D., and Thongpapanl, N. T. (2010), "The moderating impact of internal social exchange processes on the entrepreneurial orientation-performance relationship", *Journal of Business Venturing*, Vol. 25, No. 1, pp. 87-103.
- Combs, J. G., Crook, T. R., and Shook, C. L. (2005), "The dimensionality of organizational performance and its implications for strategic management research", in Ketchen, D. J. and Bergh, D. D. (Eds.), *Research Methodology in Strategic Management*, (259-286), San Diego, CA: Elsevier.
- Conley, J. J. (1984), "Longitudinal consistency of adult personality: self-reported psychological characteristics across 45 years", *Journal of Personality and Social Psychology*, Vol. 47, No. 6, pp. 1325-1333.
- Connolly, T., Conlon, E. J., and Deutsch, S. J. (1980), "Organizational effectiveness: A multiple constituency approach", *Academy of Management Review*, Vol. 5, No. 2, pp. 211-217.
- Cooper, A. C. (1993), "Challenges in predicting new firm performance", *Journal of Business Venturing*, Vol. 8, No. 3, pp. 241-253.

- Cornelia, D. (1996), "New product strategy, structure and performance in two environments", *Industrial Marketing Management*, Vol. 25, No. 6, pp. 555-566.
- Covin, J. G., and Miles, M. (1999), "Corporate entrepreneurship and the pursuit of competitive advantage", *Entrepreneurship Theory and Practice*, Vol. 23, No. 3, pp. 47-63.
- Covin, J. G., and Slevin, D. P. (1988), "The influence of organization structure on the utility of an entrepreneurial top management style", *Journal of Management Studies*, Vol. 25, No. 3, pp. 217-234.
- Covin, J. G., and Slevin, D. P. (1989), "Strategic management of small firms in hostile and benign environments", *Strategic Management Journal*, Vol. 10, No. 1, pp. 75-87.
- Covin, J. G., and Slevin, D. P. (1991), "A conceptual model of entrepreneurship as firm behaviour", *Entrepreneurship Theory and Practice*, Vol. 16, No. 1, pp. 7-25.
- Covin, J. G., Slevin, D. P., and Schultz, R. L. (1994), "Implementing strategic missions: Effective strategic, structural and tactical choices", *Journal of Management Studies*, Vol. 31, No. 4, pp. 481-506.
- Covin, J. G., Green, K. M., and Slevin, D. P. (2006), "Strategic process effects on the entrepreneurial orientation - sales growth rate relationships", *Entrepreneurship Theory and Practice*, Vol. 30, No. 1, pp. 57-81.
- Covin, J. G., and Covin, T. J. (1990), "Competitive aggressiveness, environmental context, and firm performance", *Entrepreneurship Theory and Practice*, Vol. 14, No. 4, pp. 35-50.
- Cronbach, L. (1955), "Processes affecting scores on understanding of others and assumed similarity", *Psychological Bulletin*, Vol. 52, No. 3, 177-190.
- Cross, K. F., and Lynch, R. L. (1989), "The SMART way to define and sustain success", *National Productivity Review*, Vol. 18, No. 1, pp. 23-33.
- Cunningham, J. B., and Lischeron, J. (1991), "Defining entrepreneurship", *Journal of Small Business Management*, Vol. 29, No. 1, pp. 45-61.
- Dalton, D., Todor, W., Spedolini, M., Fielding, G., and Porter, L. (1980), "Organization structure and performance: A critical review", *Academy of Management Review*, Vol. 5, No. 1, pp. 49-64.
- Damanpour, F. (1991), "Organizational innovation: A meta-analysis of effects of determinants and moderators", *Academy of Management Journal*, Vol. 34, No. 3, pp. 555-590.
- Davidsson, P. (1991), "Continued entrepreneurship: Ability, need, and opportunity as determinants of small firm growth", *Journal of Business Venturing*, Vol. 6, No. 6, pp. 405-429.
- Davila, T. (2000), "An empirical study on the drivers of management control systems' design in new product development" *Accounting, Organizations and Society*, Vol. 25, No. 4, pp. 383-409.
- Dawes, J. (1999), "The relationship between subjective and objective company performance measures in market orientation research: Further empirical evidence", *Marketing Bulletin*, Vol. 10, No. 1, pp. 65-76.

- Delaney J. T., and Huselid M. A. (1996), "The impact of human resource management practices on perceptions of organizational performance", *Academy of Management Journal*, Vol. 39, No. 4, pp. 949-969.
- Demartini, P., and Paoloni, P. (2014), "Defining the Entrepreneurial Capital Construct", *Chinese Business Review*, Vol. 13, No.11, pp. 668-680.
- Dess, G. G., and Robinson, J. R. B. (1984), "Measuring organizational performance in the absence of objective measures: The case of the privately-held firm and conglomerate business unit", *Strategic Management Journal*, Vol. 5, No. 3, pp. 265-273.
- Dess, G. G., and Lumpkin, G. T. (2005), "The role of entrepreneurial orientation in stimulating effective corporate entrepreneurship", *The Academy of Management Executive*, Vol. 19, No. 1, pp. 147-156.
- Dess, G. G., Lumpkin, G. T., and Covin, J. G. (1997), "Entrepreneurial strategy making and firm performance: Tests of contingency and configurational models", *Strategic Management Journal*, Vol. 18, No. 9, pp. 677-695.
- Dess, G. G., and Beard, D. W. (1984), "Dimensions of organizational task environments", *Administrative Science Quarterly*, Vol. 29, No. 1, pp. 52-73.
- Dess, G. G., and Priem, R. L. (1995), "Consensus-performance research: Theoretical and empirical extensions", *Journal of Management Studies*, Vol. 32, No. 4, pp. 401-417.
- Dimitratos, P., Lioukas, S., and Carter, S. (2004), "The relationship between entrepreneurship and international performance: the importance of domestic environment", *International Business Review*, Vol. 13, No. 1, pp. 19-41.
- Dinu, A. M. (2012), "Modern methods of risk identification in risk management", *International Journal of Academic Research in Economics and Management Sciences*, Vol. 1, No. 6, pp. 67-71.
- Dixon, J.R., Nanni, A.J. and Vollmann, T.E. (1990), *The New Performance Challenge – Measuring Operations for World-Class Competition*, Homewood, IL: Dow Jones-Irwin.
- Downs, G.W., and Mohr, L.B. (1976), "Conceptual issues in the study of innovation", *Administrative Science Quarterly*, Vol. 21, No. 4, pp. 700-714.
- Doyle, P. (1994), "Setting business objectives and measuring performance", *European Management Journal*, Vol. 12, No. 2, pp. 123-132.
- Drucker, P. F. (1985), *Innovation and Entrepreneurship*, NY: Harper Trade.
- Dumaine, B. (1991), "The bureaucracy busters", *Fortune*, Vol. 123, No. 3, pp. 35-50.
- Duncan, R.B. (1972), "Characteristics of organizational environments and perceived environmental uncertainty", *Administrative Science Quarterly*, Vol. 17, No. 3, pp. 313-327.
- Dutton, J. E., and Duncan, R. B. (1987), "The influence of the strategic planning process on strategic change", *Strategic Management Journal*, Vol. 8, No. 2, pp. 103-116.

- Dutton, J. E., and Jackson, S. E. (1987), "Categorizing strategic issues: Links to organizational action", *Academy of Management Review*, Vol. 12, No. 1, pp. 76-90.
- Dwyer, F. R., and Welsh, M. A. (1985), "Environmental relationship of the internal political economy of marketing channels", *Journal of Marketing Research*, Vol. 22, No. 4, pp. 397-414.
- Edmans, A., Goldstein, I., and Jiang, W. (2012), "The real effects of financial markets: The impact of prices on takeovers", *The Journal of Finance*, Vol. 67, No. 3, pp. 933-971.
- Edmondson, A.C., and Nembhard, I. M. (2009), "Product development and learning in project teams: the challenges are the benefits", *Journal of Product Innovation Management*, Vol. 26, No. 2, pp. 123-138.
- Eisenhardt, K. M. (1989), "Agency theory: An assessment and review", *Academy of Management Review*, Vol. 14, No. 1, pp. 57-74.
- Ellis, P. D. (2006), "Market orientation and performance: A meta-analysis and cross-national comparisons", *Journal of Management Studies*, Vol. 43, No. 5, pp. 1089-1107.
- Falbe, C. M., Dandridge, T. C., and Kumar, A. (1999), "The effect of organizational context on entrepreneurial strategies in franchising", *Journal of Business Venturing*, Vol. 14, No. 1, pp. 125-140.
- Fayyaz, A., Mian, S. A., and Khan, J. H. (2009), "State of entrepreneurship and globalisation in Pakistan", *International Journal of Business and Globalisation*, Vol. 3, No. 3, pp. 271-287.
- Fegh-hi, N. (2010), "Strategic structure for organizational performance", *International Journal of Management and Innovation*, Vol. 2, No. 2, pp. 9-23.
- Feifei, Y. U. (2012), "Strategic flexibility, entrepreneurial orientation and firm performance: Evidence from small and medium-sized business (SMB) in China", *African Journal of Business Management*, Vol. 6, No. 4, pp. 1711-1720.
- Ferrier, W. (2001), "Navigating the competitive landscape: The drivers and consequences of competitive aggressiveness", *Academy of Management Journal*, Vol. 44, No. 4, pp. 858-877.
- Fiegenbaum, A., and Thomas, H. (1988), "Attitudes toward risk and the risk-return paradox: prospect theory explanations", *Academy of Management Journal*, Vol. 31, No. 1, pp. 85-106.
- Fiegenbaum, A., and Thomas, H. (2004), "Strategic risk and competitive advantage: an integrative perspective", *European Management Review*, Vol. 1, No. 1, pp. 84-95.
- Fisher, R. J. (1993), "Social desirability bias and the validity of indirect questioning", *Journal of Consumer Research*, Vol. 20, No. 2, pp. 303-315.
- Fiske, D. W. (1982), "Convergent-discriminant validation in measurements and research strategies", *New Directions for Methodology of Social and Behavioural Science*, Vol. 12, No. 1, pp. 77-92.
- Fitzgerald, L., Johnston, R., Brignall, T.J., Silvestro, R., and Voss, C. (1991), *Performance Measurement in Service Businesses*, London: CIMA.

- Ford, J. D., and Schellenberg, D. A. (1982), "Conceptual issues of linkage in the assessment of organizational performance", *Academy of Management Review*, Vol. 7, No. 1, pp. 49-58.
- Forker, L. B., Vickery, S. K., and Droge, C. L. (1996), "The contribution of quality to business performance", *International Journal of Operations and Production Management*, Vol. 16, No. 8, pp. 44-62.
- Fornell, C., and Larcker, D. F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18, No. 1, pp. 39-50.
- Franco, S. M., Kennerley, M., Micheli, P., Martinez, V., Mason, S., Marr, B., Gray, D., and Neely, A. (2007), "Towards a definition of a business performance measurement system", *International Journal of Operations and Production Management*, Vol. 27, No. 8, pp. 784-801.
- Frank, H., Kessler, A., and Fink, M. (2010), "Entrepreneurial orientation and business performance-a replication study", *Schmalenbach Business Review*, Vol. 62, No. 2, pp. 175-198.
- Frazier, P. A., Tix, A. P., and Baron, K. E. (2004), "Testing moderator and mediator effects in counseling psychology", *Journal of Counselling Psychology*, Vol. 51, No. 1, pp. 115-134.
- Fredrickson, J. (1986), "The strategic decision making process in organizational structure", *Academy of Management Review*, Vol. 11, No. 2, pp. 280-297.
- Frese, M., Brantjes, A., and Hoorn, R. (2002), "Psychological success factors of small scale businesses in Namibia: The roles of strategy process, entrepreneurial orientation and the environment", *Journal of Developmental Entrepreneurship*, Vol. 7, No. 3, pp. 259-282.
- Friego, M. L., and Krumwiede, K. R. (1999), "Balanced scorecards: a rising trend in strategic performance measurement", *Journal of Strategic Performance Measurement*, Vol. 3, No. 1, pp. 42-55.
- Fulk, J., Brief, A. P., and Barr, S. H. (1985), "Trust-in-supervisor and perceived fairness and accuracy of performance evaluations", *Journal of Business Research*, Vol. 13, No. 4, pp. 301-313.
- Gaglio, C. M., and Katz, J. A. (2001), "The psychological basis of opportunity identification: Entrepreneurial alertness", *Small Business Economics*, Vol. 16, No. 2, pp. 95-111.
- Galbraith, J. R., and Kazanjian, R. K. (1986), *Strategy Implementation: Structure, Systems, and Processes*, NY: West Publishing Company.
- Gartner, W. B. (1988), "Who is an entrepreneur? is the wrong question", *American Journal of Small Business*, Vol. 12, No. 4, pp. 11-32.
- Gartner, W. B. (1990), "What are we talking about when we talk about entrepreneurship?", *Journal of Business Venturing*, Vol. 5, No. 1, pp. 15-28.
- Gartner, W. B., Bird, B., and Starr, J. A. (1992), "Acting as if: Differentiating entrepreneurial from organizational behaviour", *Entrepreneurship Theory and Practice*, Vol. 16, No. 3, pp. 13-31.

- George, G., Robley Wood Jr, D., and Khan, R. (2001), "Networking strategy of boards: implications for small and medium-sized enterprises", *Entrepreneurship and Regional Development*, Vol. 13, No. 3, pp. 269-285.
- Georgelli, Y., Joyce, P., and Woods, A. (2000), "Entrepreneurial action, innovation, and business performance: The small independent business", *Journal of Small Business and Enterprise Development*, Vol. 7, No. 1, pp. 7-17.
- Ghalayini, A. M., and Noble, J. S. (1996), "The changing basis of performance measurement", *International Journal of Operations and Production Management*, Vol. 16, No. 8, pp. 63-80.
- Ghalayini, A. M., Noble, J. S., and Crowe, T. J. (1997), "An integrated dynamic performance measurement system for improving manufacturing competitiveness", *International Journal of Production Economics*, Vol. 48, No. 3, pp. 207-25.
- Ghobadian, A., Nandakumar, M. K., and O'Regan, N. (2010), "Business-level strategy and performance: The moderating effects of environment and structure", *Management Decision*, Vol. 48, No. 6, pp. 907-939.
- Ghoshal, S., and Westney, D. E. (1991), "Organizing competitor analysis systems", *Strategic Management Journal*, Vol. 12, No. 1, pp. 17-31.
- Gimenez, F. A. P. (2000), "The benefits of a coherent strategy for innovation and corporate change: A study applying Miles and Snow's model in the context of small firms", *Creativity and Innovation Management*, Vol. 9, No. 4, pp. 235-244.
- Globerson, S. (1985), "Issues in developing a performance criteria system for an organization", *International Journal of Production Research*, Vol. 23, No. 4, pp. 639-646.
- Goll, I., and Rasheed, A. M. (1997), "Rational decision-making and firm performance: The moderating role of environment", *Strategic Management Journal*, Vol. 18, No. 7, pp. 583-591.
- Gonzalez-Benito, O., Gonzalez-Benito, J., and Munoz-Gallego, P. A. (2009), "Role of entrepreneurship and market orientation in firms' success", *European Journal of Marketing*, Vol. 43, Nos. (3-4), pp. 500-522.
- Grande, J., Madsen, E. L., and Borch, O. J. (2011), "The relationship between resources, entrepreneurial orientation and performance in farm-based ventures", *Entrepreneurship and Regional Development*, Vol. 23, Nos. (3-4), pp. 89-111.
- Green, K. M., Covin, J. G., and Slevin, D. P. (2008), "Exploring the relationship between strategic reactivity and entrepreneurial orientation: The role of structure-style fit", *Journal of Business Venturing*, Vol. 23, No. 3, pp. 356-383.
- Grimmer, L., Miles, M. P., and Grimmer, M. (2013), "A research note on the effect of entrepreneurial orientation on small retailer performance: a resource-advantage perspective", *International Entrepreneurship and Management Journal*, Vol. 9, No. 3, pp. 1-16.



- Grunhagen, M., Wollan, M. L., Dada, O. L., and Watson, A. (2014), "The moderating influence of HR operational autonomy on the entrepreneurial orientation–performance link in franchise systems", *International Entrepreneurship and Management Journal*, Vol. 10, No. 4, pp. 827-844.
- Gulowsen, J. (1972), "A measure of work-group autonomy", In L.E. Davis and J.C. Taylor (Eds.), *Design of Jobs* (374–390), Harmondsworth: Penguin.
- Gundry, L. K., and Welsch, H. P. (2001), "The ambitious entrepreneur: High growth strategies of women-owned enterprises", *Journal of Business Venturing*, Vol. 16, No. 5, pp. 453-470.
- Gupta, A. K., and Govindarajan, V. (1984), "Business unit strategy, Managerial characteristics, and business unit effectiveness at strategy implementation", *Academy of Management Journal*, Vol. 27, No. 1, pp. 25-41.
- Gupta, R., and Pandit, A. (2012), "Strategic entrepreneurial orientation: Development of a multi-dimensional construct based on literature review", *South Asian Journal of Management*, Vol. 19, No. 4, pp. 88-99.
- Guralnik, D. B. (1982), *Webster's new World Dictionary*, NY: Simon and Schuster.
- Guth, W. D., and Ginsberg, A. (1990), "Corporate entrepreneurship", *Strategic Management Journal*, Vol. 11, No. 4, pp. 5-15.
- Hackman, J. R. (1980), "Work redesign and motivation", *Professional Psychology*, Vol. 11, No. 3, pp. 445-455.
- Hadji, M., Cocks, G., and Muller, J. (2007), "Entrepreneurship and Leadership–Prerequisites for a winning organization", *Journal of Asia Entrepreneurship and Sustainability*, Vol. 3, No. 3, pp. 17-31.
- Hafeez, M. H., Shariff, M. N. M., and Mad-Lazim, H. B. (2012), "Relationship between entrepreneurial orientation, firm resources, SME branding and firm's performance: Is innovation the missing link?", *American Journal of Industrial and Business Management*, Vol. 20, No. 4, pp. 153-159.
- Hage, J. (1980), *Theories of Organizations: Form, Process, and Transformation*, NY: John Wiley and Sons.
- Hagen, E. E. (1963), "How economic growth begins: A theory of social Change", *Journal of Social Issues*, Vol. 19, No. 1, pp. 20-34.
- Hair, J. F., Black, W.C., Babin, B. J., Anderson, R. E., and Tatham, R. L. (2008), *Multivariate Data Analysis*, India: Pearson.
- Haladyna, T. M. (2012), *Developing and validating multiple-choice test items*, NY: Routledge.
- Hamel, G., and Prahalad, C. K. (1990), "The core competence of the corporation", *Harvard Business Review*, Vol. 68, No. 3, pp. 79-91.
- Hankinson, P. (1999), "An empirical study which compares the organisational structures of companies managing the world's top 100 brands with those managing outsider brands", *Journal of Product and Brand Management*, Vol. 8, No. 5, pp. 402-414.

- Hart, S. L. (1991), "Intentionality and autonomy in strategy-making process: Modes, archetypes, and firm performance", *Advances in Strategic Management*, Vol. 7, No. 3, pp. 97-127.
- Hart, S. L. (1992), "An integrative framework for strategy-making processes", *Academy of Management Review*, Vol. 17, No. 2, pp. 327-351.
- Hassim, A. A., Nizam, A., Talib, A., and Bakar, A. R. A. (2011), "The effects of entrepreneurial orientation on firm organisational innovation and market orientation towards firm business performance", *International Conference on Sociality and Economics Development*, Vol. 10, No. 1, pp. 280-284.
- Hawkins, S. A., and Hastie, R. (1990), "Hindsight: Biased judgments of past events after the outcomes are known", *Psychological Bulletin*, Vol. 107, No. 3, pp. 311-327.
- Helfat, C. (1997), "Know-how and asset accumulation and dynamic capabilities accumulation: The case of R&D", *Strategic Management Journal*, Vol. 18, No. 5, pp. 339-360.
- Heneman, R. L. (1986), "The relationship between supervisory ratings and result-oriented measures of performance: A meta-analysis", *Personnel Psychology*, Vol. 39, No. 4, pp. 811-826.
- Herzog, P. (2011), *Open and Closed Innovation: Different Cultures for Different Strategies*, Berlin: Springer Gabler.
- Heunks, F. J. (1998), "Innovation, creativity and success", *Small Business Economics*, Vol. 10, No. 3, pp. 263-272.
- Hinkin, T. R. (1995), "A review of scale development practices in the study of organizations", *Journal of Management*, Vol. 21, No. 5, pp. 967-988.
- Hinkin, T. R., and Schriesheim, C. A. (1989), "Development and application of new scales to measure the French and Raven (1959) bases of social power", *Journal of Applied Psychology*, Vol. 74, No. 4, pp. 561-576.
- Hisrich, R. D., and Peters, M. P. (1989), *Entrepreneurship: Starting, Developing, and Managing a New Enterprise*, Homewood, IL: Richard D. Irwin.
- Hisrich, R., Langan-Fox, J., and Grant, S. (2007), "Entrepreneurship research and practice: a call to action for psychology", *American Psychologist*, Vol. 62, No. 6, pp. 575-589.
- Hitt, M. A., Biermant, L., Shimizu, K., and Kochhar, R. (2001), "Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective", *Academy of Management Journal*, Vol. 44, No. 1, pp. 13-28.
- Hmieleski, K. M., and Baron, R. A. (2008), "Regulatory focus and new venture performance: A study of entrepreneurial opportunity exploitation under conditions of risk versus uncertainty", *Strategic Entrepreneurship Journal*, Vol. 2, No. 4, pp. 285-299.
- Hoffman, C. C., Nathan, B. R., and Holden, L. M. (1991), "A comparison of validation criteria: Objective versus subjective performance measures and self-versus-supervisor ratings", *Personnel Psychology*, Vol. 44, No. 3, pp. 601-619.

- Holmbeck, G. N. (1997), "Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: examples from the child-clinical and pediatric psychology literatures", *Journal of Consulting and Clinical Psychology*, Vol. 65, No. 4, pp. 599-610.
- Holt, D.T, Rutherford, M. W., and Clohessy, G. R. (2007), "Corporate entrepreneurship: an empirical look at Individual characteristics, context and Process", *Journal of Leadership and Organizational Studies*, Vol. 13, No. 4, pp. 40-54.
- Hooper, D., Coughlan, J., and Mullen, M. (2008), "Structural equation modeling: Guidelines for determining model fit", *Electronic Journal of Business Research Methods*, Vol. 6, No. 1, pp. 53-60.
- Hornsby, J. S., Kuratko, D. F., and Montagno, R. V. (1999), "Perception of internal factors for corporate entrepreneurship: A comparison of Canadian and US managers", *Entrepreneurship Theory and Practice*, Vol. 24, No. 2, pp. 9-24.
- Horzum, M. B., and Cakir, O. (2009), "The validity and reliability study of the Turkish version of the online technologies self-efficacy scale", *Educational Sciences: Theory and Practice*, Vol. 9, No. 3, pp. 1343-1356.
- Houck, M., Speaker, P.J., Fleming, A.S., and Riley R.A. (2012), "The balanced scorecard: Sustainable performance assessment for forensic laboratories", *Science and Justice*, Vol. 52, No. 4, pp. 209-216.
- Hough, J., and Scheepers, R. (2008), "Creating corporate entrepreneurship through strategic leadership", *Journal of Global Strategic Management*, Vol. 2, No. 1, pp. 17-25.
- Hu, L. T., and Bentler, P. M. (1995), "Evaluating model fit", In Hoyle, R. H., *Structural Equation Modeling: Concepts, Issues, and Applications* (76-99), Thousand Oaks, CA: Sage.
- Huang, K. P., and Wang, K. Y. (2013), "The moderating effect of social capital and environmental dynamism on the link between entrepreneurial orientation and resource acquisition", *Quality and Quantity*, Vol. 47, No. 3, pp. 1617-1628.
- Hughes, M., and Morgan, R. E. (2007), "Deconstructing the relationship between entrepreneurial orientation and business performance at the embryonic stage of firm growth", *Industrial Marketing Management*, Vol. 36, No. 5, pp. 651-661.
- Hult, G. T. M., Hurley, R. F., and Knight, G. A. (2004), "Innovativeness: Its antecedents and impact on business performance", *Industrial Marketing Management*, Vol. 33, No. 5, pp. 429-438.
- Hultink, E. J., and Atuahene-Gima, K. (2000), "The effect of sales force adoption on new product selling performance", *Journal of Product Innovation Management*, Vol. 17, No. 6, pp. 435-450.
- Ireland, R. D., Covin, J. G., and Kuratko, D. F. (2009), "Conceptualizing corporate entrepreneurship strategy", *Entrepreneurship Theory and Practice*, Vol. 33, No. 1, pp. 19-46.

- Ireland, R. D., Hitt, M. A., and Sirmon, D. G. (2003), "A model of strategic entrepreneurship: The construct and its dimensions", *Journal of Management*, Vol. 29, No. 6, pp. 963-989.
- Islam, A., and Tedford, D. (2012), "Risk determinants of small and medium-sized manufacturing enterprises (SMEs)-an exploratory study in New Zealand", *Journal of Industrial Engineering International*, Vol. 8, No. 1, pp. 1-13.
- Ittner, C. D., and Larcker, D. F. (1998), "Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction", *Journal of Accounting Research*, Vol. 36, No. 1, pp. 1-35.
- Jacobides, M. G., and Winter, S. G. (2007), "Entrepreneurship and firm boundaries: the theory of a firm", *Journal of Management Studies*, Vol. 44, No. 7, pp. 1213-1241.
- Jacobs, J. (1984), *Cities and the Wealth of Nations: Principles of Economic Life*, NY: Random House.
- James, L. R., and Brett, J. M. (1984), "Mediators, moderators, and tests for mediation", *Journal of Applied Psychology*, Vol. 69, No. 2, pp. 307-321.
- Jarad, I. Y. A., Yusof, N. A., and Nikbin, D. (2010), "A review paper on organizational culture and organizational performance", *International Journal of Business and Social Science*, Vol. 1, No. 3, pp. 26-47.
- Jarvis, R., Curran, J., Kitching, J., and Lightfoot, G. (2000), "The use of quantitative and qualitative criteria in the measurement of performance in small firms", *Journal of Small Business and Enterprise Development*, Vol. 7, No. 2, pp. 123 - 134.
- Jaworski, B. J., and Kohli, A. K. (1993), "Market orientation: antecedents and consequences", *The Journal of Marketing*, Vol. 57, No. 3, pp. 53-70.
- Jennings, D. F., and Lumpkin, J. R. (1989), "Functioning modeling corporate entrepreneurship: An empirical integrative analysis", *Journal of Management*, Vol. 15, No. 1, pp. 485-502.
- Jennings, D. F., and Young, D. M. (1990), "An empirical comparison between objective and subjective measures of the product innovation domain of corporate entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 15, No. 1, pp. 53-66.
- Jogaratnam, G. (2002), "Entrepreneurial orientation and environmental hostility: an assessment of small, independent restaurant businesses", *Journal of Hospitality and Tourism Research*, Vol. 26, No. 3, pp. 258-277.
- Johnson, H. T. (1983), "The search for gain in markets and firms: a review of the historical emergence of management accounting systems", *Accounting, Organizations and Society*, Vol. 2, No. 3, pp. 139-146.
- Johnson, T. H., and Kaplan, R. S. (1987), *Relevance Lost: The Rise and The Fall of Management Accounting*, Boston, MA: Harvard Business School Press.
- Jondeau, E., Poon, S. H., and Rockinger, M. (2007), "Statistical properties of financial market data", *Financial Modeling Under Non-Gaussian Distributions*, Vol. 5, No.

2, pp. 7-32.

- Joreskog, K. G., and Sorbom, D. (1993), *LISREL 8: Structural equation modeling with the SIMPLIS command language*, Chicago, IL: Scientific Software International.
- Joreskog, K. G. (1971), "Statistical Analysis of Sets of Congeneric Tests", *Psychometrika*, Vol. 36, No. 2, pp.109-133.
- Kanste, O., Miettunen, J., and Kyngas, H. (2007), "Psychometric properties of the multifactor leadership questionnaire among nurses", *Journal of Advanced Nursing*, Vol. 57, No. 2, pp. 201-212.
- Kanter, R. M. (1982), "The middle manager as innovator", *Harvard Business Review*, Vol. 60, No. 4, pp. 95–106.
- Kanter, R. M., and Brinkerhoff, D. (1981), "Organizational performance: Recent developments in measurement", *Annual Review of Sociology*, Vol. 7, No. 4, pp. 322-349.
- Kanter, R. M., North, J., Bernstein, A., and Williamson, A. (1990), "Designing and running entrepreneurial vehicles in established companies", *Journal of Business Venturing*, Vol. 5, No. 6, pp. 415-427.
- Kaplan, A. (1973), *The Conduct of Inquiry*, New Brunswick, NJ: Transaction Publishers.
- Kaplan, R. S. (1986), "Accounting lag – the obsolescence of cost accounting systems", *California Management Review*, Vol. 28, No. 2, pp. 174-199.
- Kaplan, R. S., and Norton, D. P. (1992), "The Balanced Scorecard - measures that drive performance", *Harvard Business Review*, Vol. 70, No. 1, pp. 71-79.
- Kaplan, R. S., and Norton, D .P. (1996), "Linking the balanced scorecard to strategy", *California Management Review*, Vol. 39, No. 1, pp. 53-79.
- Kaplan, R. S., and Norton, D. P. (2000), *The Strategy Focused Organization: How Balanced Scorecard Companies Thrive in the New Business Environment*, Boston, MA: Harvard Business Press.
- Kaplan, R. S. (1998), "Innovation action research: creating new management theory and practice", *Journal of Management Accounting Research*, Vol. 10, No. 1, pp. 89-118.
- Karagozoglu, N., and Brown, W. B. (1988), "Adaptive responses by conservative and entrepreneurial firms", *Journal of Product Innovation Management*, Vol. 5, No. 2, pp. 269-281.
- Kartalis, N., Velentzas, J., and Broni, G. (2013), "Balance scorecard and performance measurement in a Greek industry", *Procedia Economics and Finance*, Vol. 5, No. 1, pp. 413-422.
- Kaya, H., and Agca, V. (2009), "Entrepreneurial orientation and performance of Turkish manufacturing FDI firms: An empirical study", *Iktisat Isletme ve Finans*, Vol. 24, No. 2, pp. 115-133.
- Keegan, D. P., Eiler, R. G., and Jones, C. R. (1989), "Are your performance measures obsolete?", *Management Accounting*, Vol. 70, No. 12, pp. 45-50.

- Kennerley, M., and Neely, A. (2002), "A framework of the factors affecting the evolution of performance measurement systems", *International Journal of Operations and Production Management*, Vol. 22, No. 11, pp. 1222-1245.
- Kennerley, M., and Neely, A. (2003), "Measuring performance in a changing business environment", *International Journal of Operations and Production Management*, Vol. 23, No. 2, pp. 213-229.
- Kerin, R. A., Varadarajan, P. R., and Peterson, R. A. (1992), "First-Mover advantage: A synthesis, conceptual framework, and research propositions", *Journal of Marketing*, Vol. 56, No. 4, pp. 33-52.
- Khandwalla, P. N. (1977), "Some top management styles, their context and performance", *Organization and Administrative Sciences*, Vol. 7, No. 4, pp. 21-51.
- Khandwalla, P. N. (1987), "Generators of pioneering-innovative management: Some Indian evidence", *Organization Studies*, Vol. 8, No. 1, pp. 39-59.
- Kilby, P. (1971), "Hunting the heffalump", *Entrepreneurship and Economic Development*, Vol. 5, No. 1, pp. 1-40.
- Kilmann, R. H., and Covin, T. J. E. (1988), *Corporate Transformation: Revitalizing Organizations for a Competitive World*, San Francisco: Jossey-Bass.
- Kim, W. C., and Mauborgne, R. (1997), "Value innovation: The strategic logic of high growth", *Harvard Business Review*, Vol. 75, No. 1, pp. 103-112.
- Kim, J. O. and Mueller, C. W. (1978), *Factor Analysis: Statistical Methods and Practical Issues*, Beverly Hills, CA: Sage Publications.
- Kline, R.B. (2005), *Principles and Practice of Structural Equation Modeling*, NY: The Guilford Press.
- Knight, G. A. (1997), "Cross-cultural reliability and validity of a scale to measure firm entrepreneurial orientation", *Journal of Business Venturing*, Vol. 12, No. 3, pp. 213-225.
- Koh, H. C. (1996), "Testing hypotheses of entrepreneurial characteristics: A study of Hong Kong MBA students", *Journal of Managerial Psychology*, Vol. 11, No. 3, pp. 12-25.
- Kopalle, P. K., Mela, C. F., and Marsh, L. (1999), "The dynamic effect of discounting on sales: Empirical analysis and normative pricing implications", *Marketing Science*, Vol. 18, No. 3, pp. 317-332.
- Kraemer, H. C., Wilson, G T., Fairburn, C. G., and Agras, W. S. (2002), "Mediators and moderators of treatment effects in randomized clinical trials", *Archives of General Psychiatry*, Vol. 59, No. 10, pp. 877-883.
- Kraus, S., Kauranen, I., and Henning-Reschke, C. (2011), "Identification of domains for a new conceptual model of strategic entrepreneurship using the configuration approach", *Management Research Review*, Vol. 34, No. 1, pp. 58-74.
- Kraus, S., Rigtering, J. C., Hughes, M., and Hosman, V. (2012), "Entrepreneurial orientation and the business performance of SMEs: a quantitative study from the Netherlands", *Review of Managerial Science*, Vol. 6, No. 2, pp. 161-182.

- Krauss, S. I., Frese, M., Friedrich, C., and Unger, J. M. (2005), "Entrepreneurial orientation: A psychological model of success among southern African small business owners", *European Journal of Work and Organizational Psychology*, Vol. 14, No. 3, pp. 315-344.
- Kreiser, P. M., and Davis, J. (2010), "Entrepreneurial orientation and firm performance: The unique impact of innovativeness, proactiveness, and risk-taking", *Journal of Small Business and Entrepreneurship*, Vol. 23, No. 1, pp. 39-51.
- Kreiser, P. M., Marino, L. D., and Weaver, K. M. (2002), "Assessing the psychometric properties of the entrepreneurial orientation scale: A multi-country analysis", *Entrepreneurship Theory and Practice*, Vol. 26, No. 4, pp. 71-94.
- Kreiser, P. M., Marino, L. D., Kuratko, D. F., and Weaver, K. M. (2013), "Disaggregating entrepreneurial orientation: the non-linear impact of innovativeness, proactiveness and risk-taking on SME performance", *Small Business Economics*, Vol. 40, No. 2, pp. 273-291.
- Kuivalainen, O., Sundqvist, S., Puumalainen, K., and Cadogan, J. W. (2004), "The effect of environmental turbulence and leader characteristics on international performance: Are knowledge based firms different?", *Canadian Journal of Administrative Sciences*, Vol. 21, No. 1, pp. 35-50.
- Kuratko, D. F., Hornsby, J. S., and Goldsby, M. G. (2007), "The relationship of stakeholder salience, organizational posture, and entrepreneurial intensity to corporate entrepreneurship", *Journal of Leadership and Organizational Studies*, Vol. 13, No. 4, pp. 56-72.
- Lachman, R. (1980), "Toward measurement of entrepreneurial tendencies", *Management International Review*, Vol. 20, No. 2, pp. 108-116.
- Lalley, E. P. (1982), *Corporate Uncertainty and Risk Management*, NY: Risk Management Society Publishing.
- Lam, A., and Lundvall, B.A. (2006), "The learning organisation and national systems of competence building and innovation", in Lorenz, N. and Lundvall, B.-A. (Eds), *How Europe's Economies Learn: Coordinating Competing Models* (110-139), Oxford, London: Oxford University Press.
- Lawless, M. W., and Finch, L. K. (1989), "Choice and Determinism: A test of hrebiniak and joyce's era", *Strategic Management Journal*, Vol. 10, No. 4, pp. 351-366.
- Lawrence, P., and Lorsch, J. (1967), *Organization and Environment*, Home-wood, IL.: Irwin.
- Lee, C., Lee, K., and Pennings, J. M. (2001), "Internal capabilities, external networks, and performance: a study on technology-based ventures", *Strategic Management Journal*, Vol. 22, Nos. 6-7, pp. 615-640.
- Lee, S. M., and Lim, S. (2009), "Entrepreneurial orientation and the performance of service business", *Service Business*, Vol. 3, No. 1, pp. 1-13.
- Leedy, P. D., and Ormrod, J. E. (2001), *Practical Research and Design*, NJ: Merrill Prentice Hall.

- Libby, R., and Fishburn, P. C. (1977), "Behavioural models of risk taking in business decision: A survey and evaluation", *Journal of Accounting Research*, Vol. 15, No. 2, pp. 272-292.
- Lichtenstein, B. M., and Brush, C. G. (2001), "How do 'resource bundles' develop and change in new ventures? A dynamic model and longitudinal exploration", *Entrepreneurship Theory and Practice*, Vol. 25, No. 2, pp. 37-59.
- Lieberman, M. B., and Montgomery, D. B. (1988), "First-mover advantages", *Strategic Management Journal*, Vol. 9, No. 1, pp. 41-58.
- Littunen, H. (2000), "Entrepreneurship and the characteristics of the entrepreneurial personality", *International Journal of Entrepreneurial Behaviour and Research*, Vol. 6, No. 6, pp. 295-309.
- Longenecker, J. G., and Schoen, J. E. (1978), "Management succession in the family business", *Journal of Small Business Management*, Vol. 16, No. 3, pp. 1-6.
- Low, M. B., and MacMillan, I. C. (1988), "Entrepreneurship: Past research and future challenges", *Journal of Management*, Vol. 14, No. 2, pp. 139-161.
- Lumpkin, G. T., and Dess, G. G. (1996), "Clarifying the entrepreneurial orientation construct and linking it to performance", *Academy of Management Review*, Vol. 21, No. 1, pp. 135-172.
- Lumpkin, G. T., and Dess, G. G. (2001), "Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle", *Journal of Business Venturing*, Vol. 16, No. 5, pp. 429-451.
- Lumpkin, G. T., Coglisier, C. C., and Schneider, D. R. (2009), "Understanding and measuring autonomy: An entrepreneurial orientation perspective", *Entrepreneurship Theory and Practice*, Vol. 33, No. 1, pp. 47-69.
- Lundstrom, W. J., and Lamont, L. M. (1976), "The development of a scale to measure consumer discontent", *Journal of Marketing Research*, Vol. 13, No. 11, pp. 373-381.
- Lynch, R. L. and Cross, K. F. (1991), *Measure up! The Essential Guide to Measuring Business Performance*, London: Mandarin.
- Lynn, M. R. (1986), "Determination and quantification of content validity", *Nursing Research*, Vol. 35, No. 6, pp. 382-386.
- MacCallum, R. C., Browne, M. W., and Sugawara, H. M. (1996), "Power analysis and determination of sample size for covariance structure modeling", *Psychological Methods*, Vol. 1, No. 2, pp. 130-149.
- Madhoushi, M., Sadati, A., Delavari, H., Mehdivand, M., and Mihandost, R. (2011), "Entrepreneurial orientation and innovation performance: The mediating role of knowledge management", *Asian Journal of Business Management*, Vol. 3, No. 4, pp. 310-316.
- Majid, I. A., Ismail, K., and Cooper, S. (2011), "Prevalence of entrepreneurial management practices in technology-based firms in Malaysia", *African Journal of Business Management*, Vol. 5, No. 6, pp. 2075-2082.



- March, J. G., and Sutton, R. I. (1997), "Organizational Performance as a Dependent Variable", *Organizational Science*, Vol. 8, No. 6, pp. 698-706.
- March, J. G. (1978), "Bounded rationality, ambiguity, and the engineering of choice", *Bell Journal of Economics*, Vol. 9, No. 2, pp. 587-608.
- March, J. G. (1991), "Exploration and exploitation in organizational learning". *Organization Science*, Vol. 2, No. 1, pp. 71-87.
- Markus, K. A. (2012), "Principles and practice of Structural Equation Modeling by Rex B. Kline", *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 19, No. 3, pp. 509-512.
- Marr, B., and Schiuma, G. (2003), "Business performance measurement - past, present and future", *Management Decision*, Vol. 41, No. 8, pp. 680-687.
- Marr, B. (2005), "Business performance measurement: an overview of the current state of use in the USA", *Measuring Business Excellence*, Vol. 9, No. 3, pp. 56-63.
- Marshall A (1930), *Principles of Economics*, London: Macmillan and Co.
- Martinez-Leon, I. M., and Martinez-Garcia, J. A. (2011), "The influence of organizational structure on organizational learning", *International Journal of Manpower*, Vol. 32, Nos. 5-6, pp. 537-566.
- Maslow, A. H., (1954), *Motivation and Personality*, NY: Harper.
- Mason, R. B. (2006), "Coping with complexity and turbulence-an entrepreneurial solution", *Journal of Enterprising Culture*, Vol. 14, No. 4, pp. 241-266.
- Mastaglia, B., Toye, C., and Kristjanson, L. J. (2003), "Ensuring content validity in instrument development: challenges and innovative approaches", *Contemporary Nurse*, Vol. 14, No. 3, pp. 281-291.
- Masters, R., and Meier, R. (1988), "Sex differences and risk taking propensity of entrepreneurs", *Journal of Small Business Management*, Vol. 26, No. 1, pp. 31-35.
- Matic, I. (2012), "Measuring the effects of learning on business performances: Proposed performance measurement model", *The Journal of American Academy of Business*, Vol. 18, No. 1, pp. 278-284.
- Matsuno, K., Mentzer, J. T., and Ozsomer, A. (2002), "The effects of entrepreneurial proclivity and market orientation on business performance", *Journal of Marketing*, Vol. 66, No. 3, pp. 18-32.
- McClelland, D.C. (1961), *The Achieving Society*, Princeton, NJ: D. Van Nostrand Co.
- McDermott, C. M., and O'Connor, G. C. (2002), "Managing radical innovation: an overview of emergent strategy issues", *Journal of Product Innovation Management*, Vol. 19, No. 6, pp. 424-438.
- McGrath, R. G. (1999), "Falling forward: Real options reasoning and entrepreneurial failure", *Academy of Management Review*, Vol. 24, No. 1, pp. 13-30.
- McMullen, J. S., and Shepherd, D. A. (2006), "Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur:", *Academy of Management Review*, Vol. 31, No. 1, pp. 132-152.

- Meijaard, J., Brand, M. J., and Mosselman, M. (2005), "Organizational structure and performance in Dutch small firms", *Small Business Economics*, Vol. 25, No. 1, pp. 83-96.
- Merlo, O., and Auh, S. (2009), "The effects of entrepreneurial orientation, market orientation, and marketing subunit influence on firm performance", *Marketing Letters*, Vol. 20, No. 3, pp. 295-311.
- Miles, R. E. and Snow, J.G. (1978), *Organization Strategy, Structure, and Process*, NY: McGraw-Hill.
- Miller, D. (1983), "The correlates of entrepreneurship in three types of firms", *Management Science*, Vol. 29, No. 7, pp. 770-791.
- Miller, D. (1988), "Relating Porter's business strategies to environment and structure: Analysis and performance implications". *Academy of Management Journal*, Vol. 31, No. 2, pp. 280-308.
- Miller, D., and Droge, C. (1986), "Psychological and traditional determinants of structure", *Administrative Science Quarterly*, Vol. 31, No. 4, pp. 539-560.
- Miller, D., and Friesen, P. H. (1978), "Archetypes of strategy formulation", *Management Science*, Vol. 24, No. 9, pp. 921-933.
- Miller, D., and Friesen, P. H. (1982), "Innovation in conservative and entrepreneurial firms: Two models of strategic momentum", *Strategic Management Journal*, Vol. 3, No. 1, pp. 1-25.
- Miller, D., and Toulouse, J. M. (1986), "Chief executive personality and corporate strategy and structure in small firms", *Management Science*, Vol. 32, No. 11, pp. 1389-1409.
- Miller, K. D., and Bromiley, P. (1990), "Strategic risk and corporate performance: An analysis of alternative risk measures", *Academy of Management Journal*, Vol. 33, No. 4, pp. 756-779.
- Mintzberg, H. (1973), "Strategy-Making in three modes", *California Management Review*, Vol. 16, No. 2, pp. 44-53.
- Mintzberg, H., (1979), *The Structuring of Organization*, Englewood Cliffs, NJ: Prentice Hall.
- Moreno, A. M., and Casillas, J. C. (2008), "Entrepreneurial orientation and growth of SMEs: A causal model", *Entrepreneurship Theory and Practice*, Vol. 32, No. 3, pp. 507-528.
- Morgan, R. E., and Strong, C. A. (2003), "Business performance and dimensions of strategic orientation", *Journal of Business Research*, Vol. 56, No. 3, pp. 163-176.
- Morris Jr, J. A., Shertzer, K. W., and Rice, J. A. (2011), "A stage-based matrix population model of invasive lionfish with implications for control", *Biological Invasions*, Vol. 13, No. 1, pp. 7-12.
- Morris, M. H., and Lewis, P. S. (1995), "The determinants of entrepreneurial activity: Implications for marketing", *European Journal of Marketing*, Vol. 29, No. 7, pp. 31-49.

- Morris, M. H., Coombes, S., Schindehutte, M., and Allen, J. (2007), “Antecedents and outcomes of entrepreneurial and market orientations in a non-profit context: Theoretical and empirical insights”, *Journal of Leadership and Organizational Studies*, Vol. 13, No. 4, pp. 12-39.
- Morris, M. H., and Paul, G. W. (1987), “Innovation in conservative and entrepreneurship firms”, *Journal of Business Venturing*, Vol. 2, No. 3, pp. 247-259.
- Mugler, J., Frank, H., Lueger, M., and Korunka, C. (2003), “The entrepreneurial personality in the context of resources, environment, and the startup process: a configuration approach”, *Entrepreneurship Theory and Practice*, Vol. 28, No. 1, pp. 23-42.
- Mulaik, S.A., James, L.R., Van Alstine, J., Bennet, N., Lind, S., and Stilwell, C.D. (1989), “Evaluation of Goodness-of-Fit indices for structural equation models. *Psychological Bulletin*, Vol. 105, No. 3, pp. 430-45.
- Murimbika, M., and Urban, B. (2013), “Strategic management practices and corporate entrepreneurship: A cluster analysis of financial and business services firms in South Africa”, *African Journal of Business Management*, Vol. 7, No. 12, pp. 1522-1535.
- Murphy, G. B., Trailer, J. W., and Hill, R.C. (1996), “Measuring performance in entrepreneurship research”, *Journal of Business Research*, Vol. 36, No. 1, pp. 15-23.
- Mwangi, M. M. A., and Ngugi, K.(2014), “Influence of entrepreneurial orientation on growth of micro and small enterprises in Kerugoya, Kenya”, *European Journal of Business Management*, Vol. 1, No. 11, pp. 417-438.
- Naldi, L., Nordqvist, M., Sjoberg, K., and Wiklund, J. (2007), “Entrepreneurial orientation, risk taking, and performance in family firms”, *Family Business Review*, Vol. 20, No. 1, pp. 33-47.
- Naman, J. L., and Slevin, D. P. (1993), “Entrepreneurship and the concept of fit: A model and empirical tests”, *Strategic Management Journal*, Vol. 14, No. 2, pp. 137-153.
- Neely, A., and Adams, C. (2001), “The performance prism perspective”, *Journal of Cost Management*, Vol. 15, No. 1, pp. 7-15.
- Neely, A. (1998), *Measuring Business Performance – Why, What and How*, London: Economist Books.
- Neely, A., Adams, C., and Kennerley, M. (2002), *The Performance Prism: The Scorecard for Measuring and Managing Business Success*, London: Prentice Hall.
- Neely, A. D., Gregory, M., and Platts, K. (1995), “Performance measurement system design – a literature review and research agenda”, *International Journal of Operations and Production Management*, Vol. 15, No. 4, pp. 80-116.
- Neely, A. D., Richards, A.H., Mills, J.F., Platts, K.W. and Bourne, M.C.S. (1997), “Designing performance measures: a structured approach”, *International Journal of Operations and Production Management*, Vol. 17, No. 11, pp. 31-53.

- Nelson, R. E. (1997), "Entrepreneurship Education as a Strategic Approach to Economic Growth in Kenya", *Journal of Industrial Teacher Education*, Vol. 35, No. 1, pp. 7-21.
- Nelson, R. R., and Winter, S. G. (1982), "The Schumpeterian tradeoff revisited", *The American Economic Review*, Vol. 72, No. 1, pp. 114-132.
- Nielsen, J. F., and Pedersen, C. P. (2003), "The consequences and limits of empowerment in financial services", *Scandinavian Journal of Management*, Vol. 19, No. 1, pp. 63-83.
- Nielsen, R. P., Peters, M. P., and Hisrich, R. D. (1985), "Intrapreneurship strategy for internal markets—corporate, non-profit and government institution cases", *Strategic Management Journal*, Vol. 6, No. 2, pp. 181-189.
- Nonaka, I., and Takeuchi, H. (1995), *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*, London: Oxford University Press.
- Nordqvist, M., and Zellweger, T. (2010), *Transgenerational Entrepreneurship: Exploring Growth and Performance in Family Firms across Generations*, Cheltenham, England: Edward Elgar Publishing.
- Nunnally, J. (1978), *Psychometric Methods*, NY: McGraw Hill
- Ocasio, W. (1997), "Towards an attention-based view of the firm william ocasio", *Psychology*, Vol. 1, No. 1, pp. 403-404.
- O'Connor, G. C., and Veryzer, R. W. (2001), "The nature of market visioning for technology-based radical innovation", *Journal of Product Innovation Management*, Vol. 18, No. 4, pp. 231-246.
- Okpara, F. O. (2007), "The value of creativity and innovation in entrepreneurship", *Journal of Asia Entrepreneurship and Sustainability*, Vol. 3, No. 2, pp. 1-14.
- Okudan, G. E., and Rzasa, S. E. (2006), "A project-based approach to entrepreneurial leadership education", *Technovation*, Vol. 26, No. 2, pp. 195-210.
- Olsen, M. D., Tse, E. C., and West, J. J. (1998), *Strategic Management in the Hospitality Industry*, NY: Van Nostrand Reinhold.
- Oni, E. O. (2012), "Relevance of entrepreneurial proactiveness on business performance : Nigerian companies experience", *Kuwait Chapter of Arabian Journal of Business and Management Review*, Vol. 1, No. 6, pp. 92 - 108.
- Parnell, J. A., and Wright, P. (1993), "Generic strategy and performance: An empirical test of the Miles and Snow typology", *British Journal of Management*, Vol. 4, No. 1, pp. 29-36.
- Pearce, J. A., Robbins, D. K., and Robinson, R. B. (1987), "The impact of grand strategy and planning formality on financial performance", *Strategic Management Journal*, Vol. 8, No. 2, pp. 125-134.
- Peter, J. P. (1981), "Construct validity: a review of basic issues and marketing practices", *Journal of Marketing Research*, Vol. 18, No. 2, pp. 133-145.

- Pitt, L. F., Berthon, P. R., and Morris, M. H. (1997), "Entrepreneurial pricing: the Cinderella of marketing strategy", *Management Decision*, Vol. 35, No. 5, pp. 344-350.
- Pitts, R. A., and Hopkins, H. D. (1982), "Firm diversity: Conceptualization and measurement", *Academy of Management Review*, Vol. 7, No. 4, pp. 620-629.
- Pleshko, L., and Nickerson, I. (2008), "Strategic orientation, organizational structure, and the associated effects on performance in industrial firms", *Academy of Strategic Management Journal*, Vol. 7, No. 1, pp. 95-110.
- Polit, D. F., and Beck, C. T. (2006), "The content validity index: are you sure you know what's being reported? Critique and recommendations", *Research in Nursing and Health*, Vol. 29, No. 5, pp. 489-497.
- Poon, J. M., Ainuddin, R. A., and Junit, S. O. H. (2006), "Effects of self-concept traits and entrepreneurial orientation on firm performance", *International Small Business Journal*, Vol. 24, No. 1, pp. 61-82.
- Popadiuk, S., and Choo, C.W. (2006), "Innovation and knowledge creation: How are these concepts related", *International Journal of Information Management*, Vol. 26, No. 4, pp. 302-312.
- Porter, L. W., Lawler, E. and Hackman, J. R. (1975), *Behaviour in Organizations*, Tokyo: McGraw-Hill Kogakusha.
- Porter, M. (1985), *Competitive Strategy*, NY: Free Press.
- Portney, L. G., and Watkins, M. P. (2000), "Statistical measures of reliability", *Foundations of Clinical Research: Applications to Practice*, Vol. 2, No. 1, pp. 557-586.
- Prahalad, C. K., and Hamel, G. (1994), "Strategy as a field of study: Why search for a new paradigm?", *Strategic Management Journal*, Vol. 15, No. 2, pp. 5-16.
- Preacher, K. J., and Merkle, E. C. (2012), "The problem of model selection uncertainty in structural equation modeling", *Psychological Methods*, Vol. 17, No. 1, pp. 1-14.
- Press, W. H. (2007), *Numerical Recipes: The Art of Scientific Computing*, England: Cambridge university press.
- Price, D. P., Stoica, M., and Boncella, R. J. (2013), "The relationship between innovation, knowledge, and performance in family and non-family firms: an analysis of SMEs", *Journal of Innovation and Entrepreneurship*, Vol. 2, No. 1, pp. 1-20.
- Priem, R. L., Love, L. G., and Shaffer, M. A. (2002), "Executives' perceptions of uncertainty sources: A numerical taxonomy and underlying dimensions", *Journal of Management*, Vol. 28, No. 6, pp. 725-746.
- Pugh, D. S., Hickson, D. F., Hinings, C. R., and Turner, C. (1968), "Dimensions of organization structure", *Administrative Science Quarterly*, Vol. 13, No. 1, pp. 65-105.

- Purbey, S., Mukherjee, K., and Bhar, C. (2007), "Performance measurement system for healthcare processes", *International Journal of Productivity and Performance Management*, Vol. 56, No. 3, pp. 241-251.
- Quinn, J. B. (1985), "Managing innovation: Controlled chaos", *Harvard Business Review*, Vol. 63, No. 3, pp. 73-84.
- Rauch, A., Wiklund, J., Lumpkin, G. T., and Frese, M. (2009), "Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future", *Entrepreneurship Theory and Practice*, Vol. 33, No. 3, pp. 761-787.
- Read, S., and Sarasvathy, S. D. (2005), "Knowing what to do and doing what you know: Effectuation as a form of entrepreneurial expertise", *The Journal of Private Equity*, Vol. 9, No. 1, pp. 45-62.
- Reed, R., and DeFillippi, R. J. (1990), "Causal ambiguity, barriers to imitation, and sustainable competitive advantage", *Academy of Management Review*, Vol. 15, No. 1, pp. 88-102.
- Rentz, J. O., Shepherd, C. D., Tashchian, A., Dabholkar, P. A., and Ladd, R. T. (2002), "A measure of selling skill: scale development and validation", *Journal of Personal Selling and Sales Management*, Vol. 22, No. 1, pp. 13-21.
- Richard, O. C., Barnett, T., Dwyer, S., and Chadwick, K. (2004), "Cultural diversity in management, firm performance, and the moderating role of entrepreneurial orientation dimensions", *Academy of Management Journal*, Vol. 47, No. 2, pp. 255-266.
- Richard, P. J., Devinney, T. M., Yip, G. S., and Johnson, G. (2009), "Measuring organizational performance: Towards methodological best practice", *Journal of Management*, Vol. 35, No. 5, pp. 718-804.
- Richardson, P. R., and Gordon, J. R. M. (1980), "Measuring total manufacturing performance", *Sloan Management Review*, Vol. 21, No. 2, pp. 47-58.
- Rico, E. D., Dios, H. C., and Ruch, W. (2012), "Content validity evidences in test development: An applied perspective", *International Journal of Clinical and Health Psychology*, Vol. 12, No. 3, pp. 449-460.
- Robbins, S. P. (1993), *Organizational Behaviour*, Englewood Cliffs, NJ: Prentice Hall.
- Rose, B. M., Holmbeck, G. N., Coakley, R. M., and Franks, E. A. (2004), "Mediator and moderator effects in developmental and behavioural pediatric research", *Developmental and Behavioural Pediatrics*, Vol. 25, No. 1, pp. 58-67.
- Rosenberg, M. (1968), *The Logic of Survey Analysis*, NY: Basic Books.
- Rosenbusch, N., Brinckmann, J., and Bausch, A. (2011), "Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs", *Journal of Business Venturing*, Vol. 26, No. 4, pp. 441-457.
- Rumelt, R. (1982), "Diversification strategy and profitability", *Strategic Management Journal*, Vol. 3, No. 4, pp. 359-369.
- Sagie, A., and Elizur, D. (1999), "Achievement motive and entrepreneurial orientation: A structural analysis", *Journal of Organizational Behaviour*, Vol. 20, No. 3, pp. 375-385.

- Saini, A., and Martin, K. D. (2009), "Strategic risk-taking propensity: The role of ethical climate and marketing output control", *Journal of Business Ethics*, Vol. 90, No. 4, pp. 593-606.
- Sandberg, W., and Hofer, C. (1987), "Improving new venture performance: The role of strategy, industry structure, and the entrepreneur", *Journal of Business Venturing*, Vol. 2, No. 1, pp. 5-28.
- Santos, J. B., and Brito, L. A. L. (2012), "Toward a subjective measurement model for firm performance", *BAR-Brazilian Administration Review*, Vol. 9, No. 3, pp 95-117.
- Sapienza, H. J., Smith, K. G., and Gannon, M. J. (1988), "Using subjective evaluations of organizational performance in small business research", *American Journal of Small Business*, Vol. 12, No. 3, pp. 45-53.
- Sarasvathy, D. K., Simon, H. A., and Lave, L. (1998), "Perceiving and managing business risk: Differences between entrepreneurs and bankers", *Journal of Economic Behaviour and Organization*, Vol. 33, No. 2, pp. 207-225.
- Say, J. B. (1836), *A Treatise on Political Economy or the Production, Distribution and Consumption of Wealth*, New York: M Kelley.
- Schepers, J., Voordeckers, W., Steijvers, T., and Laveren, E. (2014), "The entrepreneurial orientation–performance relationship in private family firms: The moderating role of socioemotional wealth", *Small Business Economics*, Vol. 43, No. 1, pp. 39-55.
- Schmidt, F. L., Hunter, J. E., Pearlman, K., Hirsh, H. R., Sackett, P. R., Schmitt, N., and Zedeck, S. (1985), "Forty questions about validity, generalization and meta analysis", *Personnel Psychology*, Vol. 38, No. 4, pp. 697-798.
- Schmitt, N., Klimoski, R. J., Ferris, G. R., and Rowland, K. M. (1991), *Research Methods in Human Resources Management*, Cincinnati, US: South-Western Pub.
- Schriesheim, C. A., and Hill, K. D. (1981), "Controlling acquiescence response bias by item reversals: The effect on questionnaire validity", *Educational and Psychological Measurement*, Vol. 41, No. 4, pp. 1101-1114.
- Schriesheim, C. A., Hinkin, T. R., and Podsakoff, P. M. (1991), "Can ipsative and single-item measures produce erroneous result in field studies of French and Raven's (1959) five bases of power? An empirical investigation", *Journal of Applied Psychology*, Vol. 76, No. 1, pp 106-120.
- Schriesheim, C. A., Powers, K. J., Scandura, T. A., Gardiner, C. C., and Lankau, M. J. (1993), "Improving construct measurement in management research: Comments and a quantitative approach for assessing the theoretical content adequacy of paper-and-pencil survey-type instruments", *Journal of Management*, Vol. 19, No. 2, pp. 385-417.
- Schumacker, R. E., and Lomax, R. G. (2004), *A beginner's guide to structural equation modeling*, Mahwah, NJ: Lawrence Erlbaum Associates.

- Schumpeter, J. A. (1934), *The Theory of Economic Development*, Cambridge, MA: Harvard University Press.
- Schumpeter J A (1942), *Capitalism, Socialism, and Democracy*, NY. Harper and Brothers.
- Segev, E.(1987), “Strategy, strategy-making and performance in a business game”, *Strategic Management Journal*, Vol. 8, No. 1, pp. 565-577.
- Senge, P. M. (1990), “The leader's new work: Building learning organizations”, *Sloan Management Review*, Vol. 24, No. 1, pp. 7-23.
- Serrano, C. C., Habbershon, T. G., Nordqvist, M., Salvato, C., and Zellweger, T. (2006), “A conceptual model of transgenerational entrepreneurship in family-influenced firms”, *HEC Family Business, IFERA*, Vol. 26, No. 1, pp. 1-22.
- Shane, S., and Kolvereid, L. (1995), “National environment, strategy, and new venture performance: A three country study”, *Journal of Small Business Management*, Vol. 33, No. 2, pp. 37- 50.
- Shane, S., and Venkataraman, S. (2000), “The promise of entrepreneurship as a field of research”, *Academy of Management Journal*, Vol. 25, No. 1, pp. 217-226.
- Shaver, K. G., and Scott, L. R. (1991), “Person, process, choice: The psychology of new venture creation”, *Entrepreneurship Theory and Practice*, Vol. 16, No. 2, pp. 23-45.
- Shoham, A., and Fiegenbaum, A. (2002), “Competitive determinants of organizational risk-taking attitude: the role of strategic reference points”, *Management Decision*, Vol. 40, No. 2, pp. 127-141.
- Shrivastava, P., and Grant, J. H. (1985), “Empirically derived models of strategic decision-making processes”, *Strategic Management Journal*, Vol. 6, No. 2, pp. 97-113.
- Silvestro, R. (2014), “Performance Topology Mapping: understanding the drivers of performance”, *International Journal of Production Economics*, Vol. 156, No. 1, pp. 269–282.
- Simons, R. (2000), *Performance Measurement and Control Systems for Implementing Strategy*, NJ: Prentice-Hall Inc.
- Sireci, S. G. (1998), “The construct of content validity”, *Social Indicators Research*, Vol. 45, Nos. 1-2, pp. 83-117.
- Sitkin. S. B., and Pablo. A .L. (1992), “Reconceptualizing the determinants of risk behaviour”, *Academy of Management Review*, Vol. 17, No. 1, pp. 9-38.
- Slater, F. S., and Narver, J. C. (1994), “Does competitive environment moderate the market orientation performance relationship?”, *Journal of Marketing*, Vol. 58, No. 1, pp. 46-55.
- Slevin, D. P., and Covin, J. G. (1990), “Juggling entrepreneurial style and organizational structure -How to get your act together”, *Sloan Management Review*, Vol. 31, No. 2, pp. 43-53.
- Smart, D. T., and Conant, J. S. (1994), “Entrepreneurial orientation, distinctive marketing competencies and organizational performance”, *Journal of Applied Business Research*, Vol. 10, No. 3, pp. 28-38.



- Smith, T. M., and Reece, J. S. (1999), "The relationship of strategy, fit, productivity, and business performance in a services setting", *Journal of Operations Management*, Vol. 17, No. 2, pp. 145-161.
- Snow, C. C., and Hrebiniak, L. G. (1980), "Strategy, distinctive competence, and organizational performance", *Administrative Science Quarterly*, Vol. 25, No. 2, pp. 307-335.
- Soininen, J., Puumalainen, K., Sjogren, H., and Syrja, P. (2012), "The impact of global economic crisis on SMEs: Does entrepreneurial orientation matter?", *Management Research Review*, Vol. 35, No. 10, pp. 927-944.
- Song, M., Droge, C., Hanvanich, S., and Calantone, R. (2005), "Marketing and technology resource complementarity: An analysis of their interaction effect in two environmental contexts", *Strategic Management Journal*, Vol. 26, No. 3, pp. 259-276.
- Spector, P. E. (1992), *Summated Rating Scale Construction: An Introduction*, Thousand Oaks, CA: Sage.
- Srinivasan, S., Leszczyc, P. T. P., and Bass, F. M. (2000), "Market share response and competitive interaction: The impact of temporary, evolving and structural changes in prices", *International Journal of Research in Marketing*, Vol. 17, No. 4, pp. 281-305.
- Stam, W., and Elfring, T. (2008), "Entrepreneurial orientation and new venture performance: The moderating role of intra-and extraindustry social capital", *Academy of Management Journal*, Vol. 51, No. 1, pp. 97-111.
- Stambaugh, J., Yu, A., and Dubinsky, A. (2011), "Before the attack: A typology of strategies for competitive aggressiveness", *Journal of Management Policy and Practice*, Vol. 12, No. 1, pp. 49-63.
- Stearns, T. M., Carter, N. M., Reynolds, P. D., and Williams, M. L. (1995), "New firm survival, industry, strategy, and location", *Journal of Business Venturing*, Vol. 10, No. 1, pp. 23-42.
- Stede, W.A.V.D., Chow, C.W., and Lin, T.W. (2006), "Strategy, choice of performance measures, and performance", *Behavioural Research in Accounting*, Vol. 18, No. 1, pp. 185-205.
- Steiger, J. H. (2007), "Understanding the limitations of global fit assessment in structural equation modeling", *Personality and Individual Differences*, Vol. 42, No. 5, pp. 893-898.
- Stetz, P. E., Howell, R., Stewart, A., Blair, J. D., and Fottler, M. D. (2000), "Multidimensionality of entrepreneurial firm-level processes: do the dimensions covary?", *Frontiers of Entrepreneurship Research*, Vol. 20, pp. 653-667.
- Stevenson, H. H., and Gumpert, D. E. (1985), "The heart of entrepreneurship", *Harvard Business Review*, Vol. 63, No. 2, pp. 184-194.
- Stevenson, H. H., and Jarillo, J. C. (1990), "A paradigm of entrepreneurship: Entrepreneurial management", *Strategic Management Journal*, Vol. 11, No. 5, pp. 17-27.

- Stevenson, H. H., and Salilman, W. A. (1986), "Importance of entrepreneurship in economic development", In R.D. Hisrich (Eds.), *Entrepreneurship, Intrapreneurship, and Venture Capital: The Foundation of Economic Renaissance* (244-276), Lexington: Lexington Books.
- Stevenson, H. H., Roberts, M. J., and Grousbeck, D. E. (1989), *Business Ventures and the Entrepreneur*, Homewood, IL: Irwin.
- Stewart Jr, W. H., and Roth, P. L. (2001), "Risk propensity differences between entrepreneurs and managers: A meta-analytic review", *Journal of Applied Psychology*, Vol. 86, No. 1, pp. 145-153.
- Stone, M. M., and Brush, C. G. (1996), "Planning in ambiguous contexts: the dilemma of meeting needs for commitment and demands for legitimacy", *Strategic Management Journal*, Vol. 17, No. 8, pp. 633-652.
- Surie, G., and Ashley, A. (2008), "Integrating pragmatism and ethics in entrepreneurial leadership for sustainable value creation", *Journal of Business Ethics*, Vol. 81, No. 1, pp. 235-246.
- Swierczek, F. W., and Ha, T. T. (2003), "Entrepreneurial orientation, uncertainty avoidance and firm performance: an analysis of Thai and Vietnamese SMEs", *The International Journal of Entrepreneurship and Innovation*, Vol. 4, No. 1, pp. 46-58.
- Tabachnick, B.G., and Fidell, L.S. (2007), *Using Multivariate Statistics*, NY: Allyn and Bacon.
- Tan, J., and Litschert, R. J. (1994), "Environment-strategy relationship and its performance implications: An empirical study of Chinese electronics industry", *Strategic Management Journal*, Vol. 15, No. 1, pp. 1-20.
- Tang, J., Tang, Z., Marino, L. D., Zhang, Y., and Li, Q. (2008), "Exploring an inverted U-shape relationship between entrepreneurial orientation and performance in Chinese ventures", *Entrepreneurship Theory and Practice*, Vol. 32, No. 1, pp. 219-239.
- Tang, J., Tang, Z., Zhang, Y., and Li, Q. (2007), "The impact of entrepreneurial orientation and ownership type on firm performance in the emerging region of China", *Journal of Developmental Entrepreneurship*, Vol. 12, No. 4, pp. 383-397.
- Tang, L., and Koveos, P. E. (2004), "Venture entrepreneurship, innovation entrepreneurship, and economic growth", *Journal of Developmental Entrepreneurship*, Vol. 9, No. 2, pp. 161-171.
- Tang, Z., and Tang, J. (2012), "Entrepreneurial orientation and SME performance in China's changing environment: The moderating effects of strategies", *Asia Pacific Journal of Management*, Vol. 29, No. 2, pp. 409-431.
- Tang, Z., Kreiser, P. M., Marino, L., Dickson, P., and Weaver, K. M. (2009), "A hierarchical perspective of the dimensions of entrepreneurial orientation", *International Entrepreneurship and Management Journal*, Vol. 5, No. 2, pp. 181-201.
- Taylor, P. (2013), "The effect of entrepreneurial orientation on the internationalization of SMEs in developing countries", *African Journal of Business Management*, Vol. 7, No. 19, pp. 1927-1937.

- Thomas, W. Y. M., Theresa, L. and Ed, S. (2008), “Entrepreneurial competencies and the performance of small and medium enterprises: An investigation through a framework of competitiveness”, *Journal of Small Business and Entrepreneurship*, Vol. 21, No. 3, pp. 257-278.
- Thomas, A. S., and Ramaswamy, K. (1996), “Matching managers to strategy: Further tests of Miles and Snow typology”, *British Journal Management*, Vol. 7, No. 1, pp. 247-261.
- Timmons, J. A., and Spinelli, S. (1994), *New venture creation: Entrepreneurship for the 21st century*, Burr Ridge, IL: Irwin.
- Turner, A. N., and Lawrence, P. R. (1965), *Industrial Jobs and The Worker*, Boston, UK: Harvard University Press.
- Ullah, H., Ahmad, Z. M., and Manzoor, S. R. (2013), “Enterprise related factors influencing entrepreneurial orientation: Evidence from Khyber Pakhtunkhwa Province of Pakistan”, *African Journal of Business Management*, Vol. 7, No. 3, pp. 4096-4108.
- Ullah, H., Shah, B., Hassan, S. U., and Zaman, T. (2011), “The impact of owner psychological factors on entrepreneurial orientation: Evidence from Khyber Pakhtunkhwa-Pakistan”, *International Journal of Education and Social Sciences*, Vol. 1, No. 1, pp. 1-16.
- Ullman, J. B. (2001), “Structural equation modeling”, In Tabachnick, B. G. and Fidell, L. S.(Ed.), *Using Multivariate Statistics* (653- 771), Needham Heights, MA: Allyn and Bacon.
- Van de Ven, A. H. (1986), “Central problems in the management of innovation”, *Management Science*, Vol. 32, No. 5, pp. 590–607.
- Venkatraman, N. (1989), “The concept of fit in strategy research: toward verbal and statistical correspondence”, *Academy of Management Review*, Vol. 14, No. 3, pp. 423-444.
- Venkatraman, N. (1997), “The distinctive domain of entrepreneurship research”, *Advances in Entrepreneurship, Firm Emergence and Growth*, Vol. 3, No. 1, pp. 119-138.
- Venkatraman, N. and Ramanujam, V. (1986), “Measurement of business performance in strategy research: A comparison of approaches”, *Academy of Management Review*, Vol. 11, No. 1, pp. 801-814.
- Venkatraman, N. and Ramanujam, V. (1987), “Measurement of business economic performance: an examination of method convergence”, *Journal of Management*, Vol. 13, No. 1, pp. 109-122.
- Vij, S. and Farooq, R. (2014), “Knowledge sharing orientation and its relationship with business performance: A structural equation modeling approach”, *The IUP Journal of Knowledge Management*, Vol. 12, No. 3, pp. 17-41.
- Vij, S., and Bedi, H. S. (2012), “Relationship between entrepreneurial orientation and business performance: A review of literature”, *The IUP Journal of Business Strategy*, Vol. 9, No. 3, pp. 17-31.
- Vlek, C., and Stallen, P.J. (1980), “Rational and personal aspects of risk”, *Acta Psychologica*, Vol. 45, No. 1, pp. 273-300.

- Wall, T. D., Michie, J., Patterson, M., Wood, S. J., Sheehan, M., Clegg, C. W., and West, M. (2004), "On the validity of subjective measures of company performance", *Personnel Psychology*, Vol. 57, No. 1, pp. 95-118.
- Wang, C. L. (2008), "Entrepreneurial orientation, learning orientation, and firm performance", *Entrepreneurship Theory and Practice*, Vol. 32, No. 4, pp. 635-657.
- Wangxiang, (2001), *Technology Innovation Management*, Beijing: Qinghua University Press.
- Weber, M. (1947), *The Theory of Social and Economic Organization*, Glencoe, IL: The Free Press.
- Weick, K. E. (1976), "Educational organizations as loosely coupled systems", *Administrative Science Quarterly*, Vol. 21, No. 1, pp. 1-19.
- Wiklund, J. (1999), "The sustainability of the entrepreneurial orientation-performance relationship", *Entrepreneurship Theory and Practice*, Vol. 24, No. 2, pp. 37-48.
- Wiklund, J., and Shepherd, D. (2003), "Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses", *Strategic Management Journal*, Vol. 24, No. 12, pp. 1307-1314.
- Wiklund, J., and Shepherd, D. (2005), "Entrepreneurial orientation and small business performance: a configurational approach", *Journal of Business Venturing*, Vol. 20, No. 1, pp. 71-91.
- Williams, C. C., Round, J., and Rodgers, P. (2010), "Explaining the off-the-books enterprise culture of Ukraine: reluctant or willing entrepreneurship?", *International Journal of Entrepreneurship and Small Business*, Vol. 10, No. 2, pp. 165-180.
- Winterton, J. (1997), "Does management development add value?", *British Journal of Management*, Vol. 8, No. 1, pp. 65-76.
- Wiseman, R. M., and Catanach, C. (1997), "A longitudinal disaggregation of operational risk under changing regulations: Evidence from the savings and loan industry", *Academy of Management Journal*, Vol. 40, No. 4, pp. 799-830.
- Wiseman, R. M., and Gomez-Meija, L. R. (1998), "A behavioural agency model of managerial risk taking", *Academy of Management Review*, Vol. 23, No. 1, pp. 133-153.
- Wisner, J. D., and Fawcett, S. E. (1991), "Linking firm strategy to operating decisions through performance measurement", *Production and Inventory Management Journal*, Vol. 32, No. 3, pp 5-11.
- Wolfe, R. A. (1994), "Organizational innovation: Review, critique and suggested research directions", *Journal of Management Studies*, Vol. 31, No. 3, pp. 405-431.
- Wood, E. H. (2006), "The internal predictors of business performance in small firms", *Journal of Small Business and Enterprise Development*, Vol. 13, No. 3, pp. 441-452.
- Wynd, C. A., Schmidt, B., and Schaefer, M. A. (2003), "Two quantitative approaches for estimating content validity", *Western Journal of Nursing Research*, Vol. 25, No. 5, pp. 508-518.

- Yaghmale, F. (2009), "Content validity and its estimation", *Journal of Medical Education*, Vol. 3, No. 1, pp. 25-37.
- Yang, Z., Li-Hua, R., Zhang, X., and Wang, Y. (2007), "Corporate entrepreneurship and market performance: an empirical study in China", *Journal of Technology Management in China*, Vol. 2, No. 2, pp. 154-162.
- Yener, M., and Aykol, S. (2008), "Entrepreneurial orientation in small family firms in Istanbul", *The Business Review*, Vol. 11, No. 1, pp. 231-239.
- Yildiz, S., and Karakas, A. (2012), "Defining methods and criteria for measuring business performance: a comparative research between the literature in Turkey and foreign", *Social and Behavioural Sciences*, Vol. 58, No. 1, pp.1091-1102.
- Yiu, D.W., and Lau, C. (2008), "Corporate entrepreneurship as resource capital configuration in emerging market firms", *Entrepreneurship Theory and Practice*, Vol. 32, No. 1, pp. 37-57.
- Yu, F. (2012), "Strategic flexibility, entrepreneurial orientation and firm performance: Evidence from small and medium-sized business (SMB) in China", *African Journal of Business Management*, Vol. 6, No. 4, pp. 1711-1720.
- Yusuf, A. (2002), "Environmental uncertainty, the entrepreneurial orientation of business ventures and performance", *International Journal of Commerce and Management*, Vol. 12, Nos. 3-4, pp. 83-103.
- Zahra, S. A. (1991), "Predictors and financial outcomes of corporate entrepreneurship: An exploratory study", *Journal of Business Venturing*, Vol. 6, No. 4, pp. 259-285.
- Zahra, S. A. (1993), "Business strategy, technological policy, and firm performance", *Strategic Management Journal*, Vol. 14, No. 6, pp. 451-478.
- Zahra, S. A., and Chaples, S. S. (1993), "Blind spots in competitive analysis", *The Academy of Management Executive*, Vol. 7, No. 2, pp. 7-28.
- Zahra, S. A., and Covin, J. G. (1993), "Business strategy, technology policy and firm performance", *Strategic Management Journal*, Vol. 14, No. 6, pp. 451-478.
- Zahra, S. A., and Covin, J. G. (1995), "Contextual influences on the corporate entrepreneurship performance relationship: A longitudinal analysis", *Journal of Business Venturing*, Vol. 10, No. 3, pp. 43-58.
- Zahra, S. A., and Garvis, D. M. (2000), "International corporate entrepreneurship and firm performance: The moderating effect of international environmental hostility", *Journal of Business Venturing*, Vol. 15, No. 5, pp. 469-492.
- Zahra, S. A., and Neubaum, D. O. (1998), "Environmental adversity and the entrepreneurial activities of new ventures", *Journal of Developmental Entrepreneurship*, Vol. 3, No. 2, pp. 123-140.
- Zahra, S. A., Jennings, D., and Kuratko, D. (1999), "The antecedents and consequences of firm-level entrepreneurship: The state of the field", *Entrepreneurship Theory and Practice*, Vol. 24, No. 2, pp. 45-65.

- Zahra, S. A., Neubaum, D. O., and El-Hagrassey, G. M. (2002), "Competitive analysis and new venture performance: Understanding the impact of strategic uncertainty and venture origin", *Entrepreneurship Theory and Practice*, Vol. 27, No. 1, pp. 1-28.
- Zajac, E. J., and Bazerman, M. H. (1991), "Blind spots in strategic decision-making: the case of competitor analysis", *Academy of Management Review*, Vol. 16, No. 1, pp. 37-56.
- Zellweger, T. M., and Nason, R. S. (2008), "A stakeholder perspective on family firm performance", *Family Business Review*, Vol. 21, No. 3, pp. 203-216.
- Zellweger, T., and Sieger, P. (2012), "Entrepreneurial orientation in long-lived family firms", *Small Business Economics*, Vol. 38, No. 1, pp. 67-84.
- Zhao, Y., Li, Y., Lee, S. H., and Chen, L. B. (2011), "Entrepreneurial orientation, organizational learning, and performance: Evidence from China", *Entrepreneurship Theory and Practice*, Vol. 35, No. 2, pp. 293-317.
- Ziyae, B., and Zainal-Abidin, Z. I. (2009), "Entrepreneurship engineering: A structural perspective at manufacturing companies in Yazd city, Iran", *International Journal of Economics and Management*, Vol. 3, No. 2, pp. 237-247.

Dear Sir/Madam,

**Following are a few statements regarding your organization.** Please spare some time from your busy schedule and answer the following questions. Your responses will be kept confidential and used for academic purpose only.

A. Following are some questions about the relative performance of your organization. Please compare your organization with your industry average to rate your organization on following parameters (Please Encircle)

Sr. No.	Compared to the industry average.....	Strongly Agree	Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Disagree	Strongly Disagree
1.	....we have higher sales growth.	7	6	5	4	3	2	1
2.	....we are more profitable.	7	6	5	4	3	2	1
3.	....we are growing more rapidly	7	6	5	4	3	2	1
4.	....we have better service quality.	7	6	5	4	3	2	1
5.	....we have higher customer satisfaction.	7	6	5	4	3	2	1
6.	....we have higher employee satisfaction.	7	6	5	4	3	2	1
7.	....we have better product innovation.	7	6	5	4	3	2	1
8.	....we have better process innovation.	7	6	5	4	3	2	1
9.	....we have better product quality.	7	6	5	4	3	2	1

**Compared to the major competitor** in your industry in the last three years, **how has your business performed** on the following parameters?  
(Please Encircle)

Sr. No.	Compared to the major competitor our business has performed.....	Much more than Better	More than Better	Better	Almost Similar	Worse	More than Worse	Much more than Worse
1.	Sales Growth	7	6	5	4	3	2	1
2.	Market Share	7	6	5	4	3	2	1
3.	Return on Investment	7	6	5	4	3	2	1
4.	Service Quality	7	6	5	4	3	2	1
5.	Customer Satisfaction	7	6	5	4	3	2	1
6.	Employee Satisfaction	7	6	5	4	3	2	1
7.	Employee Turnover	7	6	5	4	3	2	1
8.	Product Innovation	7	6	5	4	3	2	1
9.	Process Innovation	7	6	5	4	3	2	1
10.	Product Quality	7	6	5	4	3	2	1

**B. Following statements relate to the behaviour of your organization.** Please **indicate your level of agreement** with following statements as per the key given below. (Please Encircle)

**Key:**

- 1= Strongly Disagree
- 2= Disagree
- 3=Somewhat Disagree
- 4= Neither Agree nor Disagree
- 5=Somewhat Agree
- 6=Agree
- 7=Strongly Agree



S. No.	Statement	Strongly Agree	Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Disagree	Strongly Disagree
1.	My firm invests heavily in new product development.	7	6	5	4	3	2	1
2.	Top Management spends time discussing customers' future needs.	7	6	5	4	3	2	1
3.	The top managers of my business unit are willing to try new ways of doing things and seek unusual, novel solutions.	7	6	5	4	3	2	1
4.	My firm regularly benchmarks its activities against the best players in the industry.	7	6	5	4	3	2	1
5.	Capturing the maximum market share is the top priority and we often cut prices for it.	7	6	5	4	3	2	1
6.	My firm actively collects and evaluates information on consumer needs & preferences.	7	6	5	4	3	2	1
7.	Our organization adopts innovative methods to beat the competition.	7	6	5	4	3	2	1
8.	In general, my firm actively collects and evaluates information on technological developments.	7	6	5	4	3	2	1
9.	My firm engages in competitive intelligence to generate actionable foresight for strategy making.	7	6	5	4	3	2	1
10.	My firm emphasizes on developing new technology.	7	6	5	4	3	2	1
11.	Top managers around here like to implement plans only if they are very certain that these will work.	7	6	5	4	3	2	1
12.	In general, my firm invests heavily in process improvement.	7	6	5	4	3	2	1
13.	Risk-takers are recognized and rewarded in our organization, whether they are successful or not.	7	6	5	4	3	2	1
14.	My firm usually adopts an aggressive attitude toward our competitors.	7	6	5	4	3	2	1
15.	In general, the top managers of my business unit discourage employees to think and behave in original and novel ways.	7	6	5	4	3	2	1
16.	My firm actively collects & evaluates information on interest rate, exchange rate, industry growth rate, and inflation rate etc.	7	6	5	4	3	2	1

S. No.	Particular	Strongly Agree	Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Disagree	Strongly Disagree
17.	In our organization, we indulge in competitor response modelling and war gaming exercises.	7	6	5	4	3	2	1
18.	Our firm encourages employees to make decisions on their own.	7	6	5	4	3	2	1
19.	In general, there is an ongoing, active search for big opportunities in my firm.	7	6	5	4	3	2	1

C. With reference to your organization, **Please encircle the number in each scale below that best depicts the actual conditions in your organisation.**

**Instruction:** On a scale of 1 to 7 below,

- 1 indicates strong inclination toward the statement on the left.
- 7 indicates strong inclination toward the statement on the right.
- 4 indicates that both are equally valid for your organization.

***In general, the top managers of my business unit favor.....***

1. A strong emphasis on the marketing of tried and tested products or services. 1 2 3 4 5 6 7 A strong emphasis on R&D, technology leadership and innovations.
2. Making minor changes in existing product line/services offering. 1 2 3 4 5 6 7 Making significant changes in existing product line/services offering.

***In dealing with its competitors, my firm.....***

3. Typically responds to actions which competitors initiate. 1 2 3 4 5 6 7 Typically initiates actions which competitors respond to.
4. Is very seldom the first to introduce new products/services, administrative techniques, operating technologies, etc. 1 2 3 4 5 6 7 Is very often the first to introduce new products/services, administrative techniques operating technologies, etc.
5. Typically seeks to avoid competitive clashes, preferring a live & let live posture. 1 2 3 4 5 6 7 Typically adopts a very competitive, "Kill-the-competition" posture.

***How many new lines of products or services has your business unit marketed in the past 5 years?***

6. No new lines of products or services.                      1   2   3   4   5   6   7   Very many new lines of products or services.

***In general, the top managers of my business unit have.....***

7. A strong inclination for low risk projects (with normal and certain rates of return).   1   2   3   4   5   6   7   A strong inclination for high risk projects (with chances of very high returns).

***In general, the top managers of my business unit believe that.....***

8. Owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behaviour.   1   2   3   4   5   6   7   Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.

***When confronted with decision making situations involving uncertainty, my business unit...***

9. Typically adopts a 'Wait and See Posture', in order to minimize the probability of making costly decisions.   1   2   3   4   5   6   7   Typically adopts a 'Bold and Aggressive Posture', in order to maximize the probability of exploiting potential opportunities.

***In general, the top managers of my firm believe that .....***

10. Individuals or work groups operating within the traditional hierarchy get the best results.   1   2   3   4   5   6   7   Individuals or work groups operating independently, that is, outside the organizational chain of command, get the best results.
11. Individuals and/or teams pursuing business opportunities are expected to obtain approval from their supervisors before making decisions.   1   2   3   4   5   6   7   Individuals and/or teams pursuing business opportunities can take decisions on their own without constantly referring to their supervisor(s).

*In general, the top managers of my firm...*

- |     |  |   |   |   |   |   |   |   |   |
|-----|--|---|---|---|---|---|---|---|---|
| 12. | Expect individuals and/or teams pursuing business opportunities to justify their actions throughout the development process. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Encourage individuals and/or teams pursuing business opportunities to proceed without having to justify their action at every stage of development. |
| 13. | Expect individuals and/or teams to use existing strategies and standard operating procedures as a basis for decision making. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Encourage individuals and/or teams to think "Outside the Box" when making decisions.  |
| 14. | Encourage the individuals or teams to rely on senior managers to guide their work.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Supports the efforts of individuals and/or teams that work autonomously.  |

**D. With reference to your organization, Please circle the number in each scale that best approximates the actual conditions in your business unit.**

*In general,*

- |    |  |   |   |   |   |   |   |   |   |
|----|--|---|---|---|---|---|---|---|---|
| 1. | Our business unit needs to rarely change its marketing practices to keep up with the market and competitors. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Our business unit needs to change its marketing practices extremely frequently (e.g., semi-annually). |
| 2. | The rate at which products/ services are getting obsolete in the industry is very slow.                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | The rate of products/ services obsolescence is very high.   |
| 3. | Actions of competitors are quite easy to predict.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Actions of competitors are unpredictable.   |
| 4. | Demand and consumer tastes are fairly easy to forecast.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Demand and tastes are almost unpredictable.   |
| 5. | The production/service technology is not subject to very much change and is well established.                | 1 | 2 | 3 | 4 | 5 | 6 | 7 | The modes of production/service change often and in a major way.                                      |

*How would you characterize the external environment within which your business unit functions?*

- |    |  |   |   |   |   |   |   |   |   |
|----|--|---|---|---|---|---|---|---|---|
| 6. | Very safe, little threat to the survival and well-being of my business unit.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Very risky, one false step can mean my business unit's undoing.   |
| 7. | Rich in investment and marketing opportunities.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Very stressful, challenging, hostile; very hard to keep afloat.   |
| 8. | An environment that my business unit can control and manipulate to its own advantage, such as a dominant firm has in an industry with little competition and few hindrances. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A dominating environment in which my business unit's initiatives count for very little against the tremendous political, technological or competitive forces. |

*In general, the operating management philosophy in my business unit favours.....*

- |     |  |   |   |   |   |   |   |   |  |
|-----|--|---|---|---|---|---|---|---|--|
| 9.  | Highly structured channels of communication and a highly restricted access to important financial and operating information. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Open channels of communication with important financial and operating information flowing quite freely throughout the business unit.                           |
| 10. | A strong insistence on a uniform managerial style throughout the business unit.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Managers' operating styles allowed to range freely from the very formal to the very informal.  |
| 11. | Strong emphases on giving the most say in decision making to formal line managers.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A strong tendency to let the expert in a given situation have the most say in decision making even if this means temporary bypassing of formal line authority. |
| 12. | A strong emphasis on holding fast to tried and true management principles despite any changes in business conditions.        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A strong emphasis on adapting freely to changing circumstances without too much concern for past practice.   |

*In general, the operating management philosophy in my business unit favours.....*

- |     |   |   |   |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|---|---|---|
| 13. | A strong emphasis on always getting personnel to follow the formally laid down procedures.          | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A strong emphasis on getting things done even if it means disregarding formal procedures.                                   |
| 14. | Tight formal control of most operations by means of sophisticated control and information systems.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Loose, informal control; heavy dependence on informal relationships and norms of cooperation for getting work done.         |
| 15. | A strong emphasis on getting line and staff personnel to adhere closely to formal job descriptions. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A strong tendency to let the requirements of the situation and the individual's personality define proper on-job behaviour. |

**Please provide following details about your organization.**

1. Name of Firm: \_\_\_\_\_

2. Email id: \_\_\_\_\_ Contact No: \_\_\_\_\_

3. **Whether BSE/NSE Listed:** Yes ( ) No ( )

**4. Age of your organization:**

- A. Less than 5 Years ( )
- B. 5-10 Years ( )
- C. 11-15 Years ( )
- D. More than 15 Years ( )

**5. Size of firm (based on annual turnover):**

- A. Less than Rs. 5 crore ( )
- B. Rs. 5-50 crore ( )
- C. Rs. 51-500 crore ( )
- D. More than Rs. 500 crore ( )

**6. Number of employees:**

- A. Less than 10 ( )
- B. 10-50 ( )
- C. 51-250 ( )
- D. More than 250 ( )

**7. Nature of Your Organization:**

- A. Manufacturing ( )
- B. Service ( )

*Thanks for your Valuable Time*

## SUMMARY

Entrepreneurial orientation has emerged as a major construct in the field of entrepreneurship. It has often been conceptualized as the extent to which a firm showcases innovativeness, demonstrates proactiveness, prefers risk taking, shows competitive aggressiveness and provides autonomy to its employees. It is the reflection of the strategic posture of a firm and discloses how a firm operates i.e. how key decision makers behave while enacting firm's vision, mission and purpose.

Entrepreneurial orientation has often been regarded as a key ingredient for organizational survival, success and growth. Many studies find a significant positive relationship between entrepreneurial orientation and business performance. However, some studies find an insignificant relationship between entrepreneurial orientation and business performance. Some studies suggest that the relationship between entrepreneurial orientation and business performance is not that straightforward; rather it is shaped like inverted U. A very high or low degree of entrepreneurial orientation is not always desirable in certain market and in structural conditions.

Literature reveals a double opinion regarding the dimensionality of entrepreneurial orientation construct. One set of studies have conceptualized entrepreneurial orientation as a uni-dimensional construct, under the belief that the focal dimensions of entrepreneurial orientation are usually highly correlated with each other. Another set of studies argue that various components of entrepreneurship may vary independently and have a unique contribution towards firm's success.

The institutional environment of India is undergoing a large-scale transition. At present, the Indian business environment is very conducive for the entrepreneurial activities. Indian government as well as intelligentsia are stressing on the need for promoting entrepreneurship as a solution to the Indian problems of unemployment and economic growth. There is a need to know the factors responsible for the success of entrepreneurial activities. It is pertinent to explore the orientation of firms suited for entrepreneurship so that concerted efforts can be made to develop these orientations among India firms. However the literature suggests that there are not many studies exploring the entrepreneurial orientation in India. Further, there is hardly any study

conducted for exploring the relationship between entrepreneurial orientation and business performance in Indian context. The present study is an endeavour to fill these gaps.

## **Research Questions**

The major purpose of the study is to clarify the nature of entrepreneurial orientation - business performance relationship by answering following research questions:

1. How do organizational demographics effect the entrepreneurial posture of a firm?
2. Is there a significant relationship between entrepreneurial orientation and business performance?
3. Is the relationship between entrepreneurial orientation - business performance contextual in nature?

## **Objectives of the Study**

Following objectives have been set for the study:

1. To study the entrepreneurial orientation of North Indian firms.
2. To study the association of entrepreneurial orientation with organizational demographics.
3. To study the impact of entrepreneurial orientation on the business performance.
4. To study the role played by organizational and industrial environment in entrepreneurial orientation - business performance relationship.
5. To suggest a model of entrepreneurial orientation - business performance relationship, for Indian context.

## **Research Design**

Descriptive, cross sectional research design has been adopted for the conduct of the present study. Survey method of data collection has been applied through a self developed research instrument. Entrepreneurial orientation has been considered as a firm level construct. The key informants (senior level key executives, who have decision making power in the organization) have been taken as respondents to represent each firm.



Responses of 500 North Indian firms (from Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir, Uttaranchal, Uttar Pradesh, Rajasthan, Chandigarh, and Delhi) were collected through a personal survey. The responses were examined for their completeness and seriousness. After removing the non-serious and/or incomplete responses, 457 responses (201 listed firms and 256 non listed firms) were finally selected for analysis. Confirmatory Factor Analysis with maximum likelihood criteria has been adopted for the measurement and validation of various constructs. Chi-square test of independence was used to assess the association of entrepreneurial orientation with the organizational demographics. Structural Equation Modeling has been used to measure the impact of entrepreneurial orientation on business performance, testing six conceptualized models of entrepreneurial orientation – business performance relationship. Chi-square difference test has been adopted for comparison of various competing models of entrepreneurial orientation – business performance relationship. Moderation Analysis measures the moderating effect of environmental uncertainty and organizational structure on entrepreneurial orientation – business performance relationship.

## **Findings**

1. The results of the present study reveal that entrepreneurial orientation is a multi-dimensional construct, having innovativeness, proactiveness, risk taking, competitive aggressiveness and autonomy as its integral dimensions.
2. Though all five dimensions of entrepreneurial orientation are unique in nature but a high degree of positive correlation has been observed among these dimensions.
3. Study reveals that there is no significant association between age of a firm and the kind of strategic posture (entrepreneurial orientation) adopted by a firm. Firms of any age group can adopt any degree of entrepreneurial orientation. It means that younger as well as mature firms can be equally entrepreneurial.
4. There is a significant association between the size of a firm and the extent of entrepreneurial orientation demonstrated by a firm. Large firms, both in terms of annual turnover and number of employees, differ significantly from smaller firms while introducing new products and services, adopting novel practices,

undertaking risky alternatives, adopting a forward looking perspective and demonstrating an aggressive behaviour towards their rivals.

5. The degree of autonomy provided to employees is not significantly associated with the size of firm (based on number of employees). Firms with a larger number of employees can be conservative in their approach while granting autonomy to their employees whereas a firm with smaller number of employees can provide sufficient autonomy to their employees and vice versa.
6. There is no significant association between the nature of industry and degree of entrepreneurial orientation. The deconstruction of entrepreneurial orientation construct also reveals that the nature of firm is not significantly associated with three dimensions of entrepreneurial orientation (i.e. innovativeness, proactiveness and competitive aggressiveness). However, the degree of autonomy and risk-taking is significantly associated with nature of firm, though the extent of association is not very strong.
7. There is significant association between type of organization and degree of entrepreneurial orientation. The deconstruction of entrepreneurial orientation construct also reveals that type of organization is significantly associated with three dimensions of entrepreneurial orientation (i.e. innovativeness, proactiveness and competitive aggressiveness). However, the autonomy and risk taking are not significantly associated with the type of organization.
8. The study finds significant and positive relationship between entrepreneurial orientation and business performance. All of the six proposed models of entrepreneurial orientation - business performance relationship have demonstrated that higher entrepreneurial orientation results in better business performance.
9. The comparison of conceptualized models reveals that 'Entrepreneurial Orientation (Multi-dimensional) → Subjective Business Performance Relative to Industry' best describes the relationship between entrepreneurial orientation and business performance. Within this model, the study finds that except for autonomy, all other dimensions of entrepreneurial orientation i.e. innovativeness, proactiveness, risk taking and competitive aggressiveness significantly predict the

business performance.

10. Environment uncertainty moderates the entrepreneurial orientation - business performance relationship. It has been found that the strength of entrepreneurial orientation- business performance relationship differs in different environmental contexts. In dynamic environmental settings, firms with higher entrepreneurial orientation are in a better position to achieve robust business performance whereas in stable environmental conditions, higher entrepreneurial orientation does not help the business to gain much.
11. Organization structure does not moderate the entrepreneurial orientation - business performance relationship. The strength of entrepreneurial orientation - business performance relationship remains invariant for both organic and mechanistic organizational structures.

## **Conclusion**

The study significantly enhances the entrepreneurship literature. Though we do not claim the generalization of findings, the study has contributed in more than one ways. The study contributes to the literature by providing validated scales for entrepreneurial orientation and business performance. The results of the study extend the literature by producing empirical evidence in support of entrepreneurial orientation - business performance relationship in the Indian context. The study justifies the use of multi-dimensional view of entrepreneurial orientation. The comparison of the uni-dimensional and multi-dimensional conceptualization of entrepreneurial orientation not only advances theory but also highlights the uniqueness of each dimension of entrepreneurial orientation. The study justifies the use of subjective measures of business performance in measuring the performance of an organization. It contributes to the scholarly conversation about contextual nature of entrepreneurial orientation by providing valuable insights regarding the moderating role of environmental uncertainty in entrepreneurial orientation - business performance relationship.