

THE MODERATOR ROLE OF INNOVATIVE BEHAVIORS ON THE
RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP AND
ORGANIZATIONAL INNOVATION

MOZHDEH MOKHBER

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DEDICATION

I would like to dedicate this dissertation to my beloved family. First and foremost, to my wonderful husband, Amin who has always been there to provide me support, love and care. He influenced and inspired me to start this research, and celebrated with me every successful milestone achieved on this journey. This dissertation is also dedicated to my beloved parents who devoted their whole life to raise me with courage and strength. They have shared and held my hands as usual through these years of study. I dedicate this work to my dear in-laws who have helped so much by giving their endless support. Finally I would be remised if I do not mention my beautiful sister who shared all my sorrows and all my joys throughout the years. I love them all and this study would not have been possible without their continuing support and patience.

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ABSTRACT

Leading innovation in today's competitive business environment is one of the most challenging aspects of the life of an organization. Review of literature indicates that although innovation is accepted as a key factor to future competitiveness of the firms, in many developing countries but organizational innovation is not a priority and generally neglected. Since previous studies identified leadership as an important determinant of organizational innovation, this study seeks to explore the direct and moderated effect of transformational leadership on organizational innovation at the organizational level. Therefore, this study develops a conceptual framework to show the moderating effect of innovative behaviours (idea generating, risk taking, decision making) as an organizational context on the relationship of transformational leadership and organizational innovation. A sample of 63 companies from "Top 100 Iranian Companies" participated in this research. The hypotheses were evaluated using Partial Least Squares (PLS) analysis which is known as a Structural Equation Modeling (SEM) technique. Findings of this study revealed that almost 45 percent of the variance of organizational innovation ($R^2 = 0.449$) is explained by transformational Leadership and this supported the positive and significant relationship of transformational leadership and organizational innovation. Furthermore, the results of this research supported two of the predicted moderating effects and showed that some of the components of transformational leadership are positively related to organizational innovation. This research has both theoretical and practical contributions to the field of leadership and innovation by elaborating the direct and moderated effect of transformational leadership on organizational innovation.

ABSTRAK

Menerajui inovasi dalam persekitaran perniagaan yang kompetitif pada hari ini adalah salah satu aspek yang paling mencabar bagi organisasi. Keperluan untuk kajian ini menjadi ketara dalam proses mengulas literatur tentang inovasi dalam organisasi di negara membangun. Tinjauan literatur menunjukkan bahawa walaupun inovasi diterima sebagai faktor utama kepada daya saing firma di masa depan, inovasi organisasi tidak menjadi keutamaan dan umumnya diabaikan dalam organisasi di banyak negara membangun. Memandangkan banyak kajian lepas mengenal pasti kepemimpinan sebagai penentu penting dalam inovasi organisasi, kajian ini meneroka kesan langsung dan kesan penyederhana kepemimpinan transformasi kepada inovasi organisasi di peringkat organisasi. Oleh itu, kajian ini membangunkan satu kerangka konseptual untuk mencari kesan penyederhana tingkah laku inovatif (menjana idea, mengambil risiko dan membuat keputusan) sebagai konteks organisasi dalam hubungan antara kepemimpinan transformasi dan inovasi organisasi. Satu sampel 63 syarikat daripada senarai "100 Syarikat Teratas Iran" telah melengkapkan soalselidik kajian. Hipotesis telah diuji menggunakan analisis *Partial Least Square* (PLS) yang dikenali sebagai teknik Pemodelan Persamaan Struktur (SEM). Hasil kajian ini mendedahkan bahawa hampir 45 peratus daripada varians inovasi organisasi ($R^2=0.449$) dijelaskan oleh kepemimpinan transformasi dan ini menyokong hubungan yang positif dan signifikan kepemimpinan transformasi dan inovasi organisasi. Tambahan pula, hasil penyelidikan ini menyokong dua daripada kesan penyederhana yang diramal dan pada masa yang sama menunjukkan bahawa beberapa komponen kepemimpinan transformasi berhubung dengan inovasi organisasi. Kajian ini mempunyai kedua-dua sumbangan teori dan praktikal kepada literatur dengan menghuraikan kesan langsung dan kesan penyederhana kepemimpinan transformasi terhadap inovasi organisasi.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMES	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xii
	LIST OF FIGURES	xiv
	LIST OF ABBREVIETIONS	xvi
	LIST OF APPENDICES	xvii
1	INTRODUCTION	1
	1.1 Background of the Study	1
	1.2 Problem Statement and Research Gap	3
	1.3 Research Questions	11
	1.4 Research Objectives	12
	1.5 Significance and Contribution of the Study	13
	1.6 Scope of the Study	15
	1.7 Operational Definition of Variables	16
	1.8 Outline of the Thesis	18
2	LITERATURE REVIEW	19
	2.1 Introduction	19
	2.2 Theoretical Perspective on Transformational Leadership	20

2.2.1	Review of Literature on Leadership	20
2.2.2	Transformational Leadership Development	24
2.2.2.1	Max Weber-1947	26
2.2.2.2	James Victor Downton-1973	27
2.2.2.3	James McGregor Burns-1978	27
2.2.2.4	Bernard M. Bass-1985	29
2.2.2.5	Other Perspectives on Transformational Leadership	34
2.2.3	Transformational Leadership Model in This Study	37
2.2.4	Components of Transformational Leadership	39
2.2.4.1	Idealized Influence	39
2.2.4.2	Attributed charisma	40
2.2.4.3	Inspirational Motivation	40
2.2.4.4	Intellectual Stimulation	41
2.2.4.5	Individualized Consideration	42
2.2.5	How Does the Transformational Leadership Work?	43
2.3	Theoretical Perspective on Organizational Innovation	46
2.3.1	Review of Literature on Innovation	47
2.3.1.1	Defining Innovation	47
2.3.1.2	Innovation Dimensions	51
2.3.2	Review of Literature on Organizational innovation	53
2.3.2.1	Defining Organizational Innovation	54
2.3.2.2	Research Approaches in Organizational Innovation	57
2.3.3	Organizational Innovation in This Study	59
2.4	Transformational Leadership and Organizational Innovation	62
2.5	Review of Literature on the Link of Transformational Leadership and Organizational Innovation	65
2.5.1	Jung, Chow and Wu (2003)	66
2.5.2	Jaskyte (2004)	67
2.5.3	Gumusluoglu and Ilsev (2006)	68
2.5.4	Aragón-Correa, García-Morales and Córdón-Pozo (2007)	69
2.5.5	Jung, Chow and Wu (2008)	70

2.5.6	García-Morales et al. (2008)	71
2.5.7	Gumusluoglu and Ilsev (2009a, 2009b)	72
2.5.8	Hsiao, Chang and Tu (2009)	75
2.5.9	Khan, Rehman and Fatima (2010)	76
2.5.10	Hsiao and Chang (2011)	76
2.6	Theoretical Perspective on Innovative Behaviors	81
2.7	Innovative Behaviours, Transformational Leadership and Organizational Innovation	83
2.8	Innovative Behaviors in This Research	86
2.8.1	Idea Generating	87
2.8.3	Risk Taking	88
2.8.4	Decision-Making	88
2.9	Hypotheses Development	89
2.10	Conceptual Framework of the Research	91
2.11	Summary	92
3	METHODOLOGY	94
3.1	Introduction	94
3.2	Research Design	95
3.3	Population and Sampling Method	97
3.3.1	Population	98
3.3.2	Sampling	101
3.4	Data Collection	103
3.5	Research Instruments	106
3.5.1	Independent Variable Research Instrument	106
3.5.1.1	Idealized influence (II)	107
3.5.1.2	Attributed charisma (AC)	108
3.5.1.3	Inspirational motivation (IM)	108
3.5.1.4	Intellectual stimulation (IS)	109
3.5.1.5	Individualized consideration (IC)	109
3.5.2	Dependent Variable Research Instrument	110
3.5.2.1	Organizational innovation Ratios	111
3.5.2.2	Innovativeness Index	112
3.5.3	Moderating Variable Research Instrument	113

	3.5.3.1 Measuring Idea Generating	114
	3.5.3.2 Measuring Risk Taking	114
	3.5.3.3 Measuring Decision Making	115
3.6	Instrument Translation Process	116
3.7	Validity and Reliability of Research instrument	117
	3.7.1 Measurement Model	120
	3.7.1.1 Reliability (Indicator and Construct)	121
	3.7.1.2 Validity (Convergent and Discriminant)	124
3.8	Data Analysis Method	127
3.9	Summary	135
4	FINDINGS AND DATA ANALYSIS	136
	4.1 Introduction	136
	4.2 Respondent's profile	137
	4.3 PLS Statistical Analysis	141
	4.4 Descriptive Analysis of Variables	144
	4.5 Research Hypotheses and Results	145
	4.5.1 The Structural Model	146
	4.5.1.1 The Relationship of Transformational Leadership and Organizational Innovation	147
	4.5.1.2 The Moderating Effect of Innovative Behaviors on the Relationship between Transformational Leadership and Organizational Innovation	154
	4.6 Goodness of Fit	166
	4.7 Summary	168
5	DISCUSSION OF FINDINGS AND CONCLUSION	171
	5.1 Introduction	171
	5.2 Summary of the Study	171
	5.3 Discussion of Findings	174
	5.3.1 Transformational Leadership and Organizational Innovation	174
	5.3.2 Moderating effect of innovative behaviors	186

5.4	Implications of Research	194
5.4.1	Theoretical Implications	195
5.4.2	Practical Implications	197
5.5	Limitation of the study	200
5.6	Recommendations for Future Research	203
5.7	Conclusion	205
REFERENCES		207
Appendices A-E		223-245

LIST OF TABLES

TABLE NO.	TITLE	PAGE
1.1	The IIP innovation indexes	10
2.1	Burns (1978) transactional and transformational leadership	28
2.2	Bass's (1985) transformational and transactional leadership	31
2.3	Definitions of innovation	48
2.4	Definitions of organizational innovation	55
2.5	Summary of studies on direct and indirect effect of transformational leadership on organizational innovation	77
3.1	IMI-100 ranking indexes	100
3.2	Research sample based on different industries	102
3.3	Survey constructs, measures, and sources	116
3.4	Identifications of reflective and formative indicators	118
3.5	Factor loadings for each item	121
3.6	Composite reliability of the constructs	123
3.7	AVEs, latent variable correlation and square root of AVE	125
3.8	AVEs, latent variable correlation and square root of AVE	126
4.1	Respondent's gender information	137
4.2	Respondent's age information	138
4.3	Respondent's educational level information	138
4.4	Respondent's job position information	138
4.5	Respondent's job duration information	139
4.6	Organization's field information	139
4.7	Organization's age information	140
4.8	Organization's size information	140
4.9	Summary of assumptions and features of PLS	142

4.10	Descriptive statistic of all variables	144
4.11	Path coefficients and t-value (bootstrapping)	153
4.12	Results of moderating variables interaction effect	166
4.13	Communality and R square of latent variables	167
4.14	Summary of findings	169

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
2.1	Leadership continuum	32
2.2	The additive effect of transformational leadership	33
2.3	Conceptual model of transformational leadership and organizational innovation by Jung et al.	66
2.4	Conceptual model of transformational leadership and organizational innovation by Gumusluoglu and Ilsev	68
2.5	Conceptual model by Aragón-Correa et al.	70
2.6	Conceptual model by García-Morales et al.	72
2.7	Conceptual model of transformational leadership and organizational innovation by Gumusluoglu and Ilsev	73
2.8	Conceptual model of transformational leadership and organizational innovation by Gumusluoglu and Ilsev	74
2.9	Conceptual model of transformational leadership and organizational innovation by Hsiao et al.	75
2.10	Conceptual model of transformational leadership and organizational innovation by Hsiao and Chang	77
2.11	Conceptual model of the influence of organizational culture on innovation by Martins and Martins	85
2.12	Conceptual framework of this research	92
3.1	Research design	97
3.3	An example of measurement model and structural model	120
3.4	Testing reliability and validity in PLS measurement model	126
3.5	Moderated relationship	131

3.6	Modeling moderation effect in PLS using product indicator approach	132
3.7	Research model as depicted in SmartPLS	134
4.1	Research model in estimation situation	148
4.2	Research model in T-value situation	148
4.3	Secondary model in estimation situation	150
4.4	Secondary model in T-value situation	151
4.5	Model with Presence of innovative behaviors in estimation situation	155
4.6	Model with presence of innovative behaviors in T-Value Situation	156
4.7	Model with presence of idea generating in estimation situation	158
4.8	Model with presence of idea generating in T-Value Situation	159
4.9	Model with presence of risk taking in estimation situation	161
4.10	Model with presence of risk taking in T-Value Situation	162
4.11	Model with presence of decision making in Estimation Situation	164
4.12	Model with presence of decision making in T-Value Situation	165
5.1	Research model based on the findings of the study	194

LIST OF ABBREVIATIONS

AC	-	Attributed Charisma
AVE	-	Average Variance Extracted
CIC	-	Consumer Innovation Confidence
CR	-	Composite Reliability
DM	-	Decision Making
GEM	-	Global Entrepreneurship Monitor
GLOBE	-	Global Leadership and Organizational Behavioural Effectiveness
GOF	-	Goodness Of Fit
IB	-	Innovative Behaviors
IC	-	Individualized Consideration
IG	-	Idea Generating
II	-	Idealized Influence
IIP	-	Institute of Innovation and Information Productivity
IM	-	Inspirational Motivation
IMI	-	Industrial Management Institute (IRAN)
IMI-100	-	Top 100 Iranian Companies
IS	-	Intellectual Stimulation
MLQ	-	Multifactor Leadership Questionnaire
OI	-	Organizational Innovation
OIC	-	Organizational Innovation Confidence
PLS	-	Partial Least Squares
RT	-	Risk Taking
SEM	-	Structural Equation Modeling
TL	-	Transformational Leadership

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Top 100 Iranian Companies (IMI-100)	223
B	Survey Questionnaire English Version	227
C	Survey Questionnaire Persian Version	231
D	Supplementary Results	235
E	List of publications and proceeding	245

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

In today's global economy most of the organizations are under constant pressure; facing a dynamic environment, rapid change in technologies and a high demand for new products and services. Any business and organization can understand the effects of globalization and knowledge growth in such lively business environment (Jung, Chow, & Wu, 2008). For moving through growth and survival, companies are trying to develop new and incomparable approaches to attract and save their customers. No matter if the organization is doing a business or providing a service, creativity and innovation can be a good solution to become more flexible while encountering business environment changes (Makri & Scandura, 2010).

Innovation enables the organizations to look for the undercover advantages, not just from a cost viewpoint, but also as a means of increasing capabilities and competitiveness of the firm (Crum, 2006). New products, functions, logistics, and processes can be identified when innovation is at the center of organization. As innovation can play an effective role in economic growth and development, it needs to be foster both individually and in organizational level (Jung, Chow, & Wu, 2003).

Therefore, an increasing attention is placed on innovation and a growing number of researchers have been attracted to this topic in recent decades (Gumusluoglu & Ilsev, 2006). Besides, scholars and practitioners have done so many efforts to identify the factors that can stimulate innovation individually and at the organizational level. During the time, researchers such as Mumford and Gustafson (1988), Oldham and Cummings (1996), Martins and Terblanche (2003), Judge, Fryxell, and Dooley (1997) and Jung et al. (2003), have identified some factors related to innovation such as leadership, creative work environment, job complexity, organizational culture, structure and climate for innovation. According to Jung et al. (2003: 582) of these factors, leadership has been identified as being one of the most important factor that can stimulate innovation. Amabile (1998), Mumford and Gustafson (1988) and Mumford (2002) also supported that leadership is an important determinant of innovation in the organization. According to Martins and Terblanche (2003) leaders try to make a natural and foundational framework that helps the organization and individuals to accept creativity and innovation as a basic cultural norm. Khan, Rehman, and Fatima (2009) believed that leaders can transform organization's life by concentrating on organizational change with a powerful devotion.

However, previous studies emphasized that the traditional types of leadership cannot be useful any more in contend with current dynamic business environment (Jung et al., 2008). Among a wide range of research on leadership, transformational leadership style with its unique approach in motivating subordinates has gained more attention during the past decade. Theoretical and empirical studies have found that transformational leaders are more capable in supporting values and norms of followers and fostering organizational and personal changes (Jung et al., 2003). Gardner and Avolio (1998) mentioned that leaders with transformational style are more effective in stimulating and promoting innovation in organization. Jung et al. (2003) and Gumusluoglu and Ilsev (2009b) also confirm the positive effect of transformational leadership on innovation at both individual and organizational level. According to Jung et al. (2008: 582) although leadership has been identified as one of the most important factors affecting innovation yet few studies have empirically examined the link between this factor and innovation at the organizational level.

Despite considering a direct link between transformational leadership and organizational innovation, it is important to understand that in every organization so many factors may reinforce or fade this linkage. Thus, beside the need for more empirical research to support the theoretical propositions on the relationship of transformational leadership and organizational innovation, the inclusion of mediators or moderators as intervening variables on this link has yet to be examined comprehensively (Gumusluoglu & Ilsev, 2009a; Jaskyte, 2004; Jung et al., 2008; Khan et al., 2009; Makri & Scandura, 2010). As a result, this study elaborates the relationship of transformational leadership and organizational innovation with moderating effect of innovative behaviors on this relationship. Previous literature (Scott & Bruce, 1994; Tsai & Chen, 2010) indicated that innovative behaviors are highly related to both organizational innovation and transformational leadership. It has been argued that innovative behaviors are the basis of organizational change and fundamental to organizational innovation (Tsai & Tseng, 2010). Leadership is also associated to innovative behaviors directly and indirectly through a supportive organization for innovation (Scott & Bruce, 1994). Therefore, the moderating effect of innovative behaviors on the relationship of transformational leadership and organizational innovation is the main focus of this research.

1.2 Problem Statement and Research Gap

Background of the study indicated that leading innovation is one of the most challenging aspects of organization's life. Innovation is more complex than it looks and a unifying general theory did not merged on this issue. Studies on innovation came from different fields and emphasized on various dimensions, therefore findings of previous studies have been inconsistent on this topic (Damanpour, 1996; Read, 2000; Wolfe, 1994). In addition much of the early literature on innovation has been conducted at individual level and focused on the adoption of new ideas and practices by individuals rather than organizations (Hage, 1998; Slappendel, 1996).

Recently, organizational innovation has been receiving extensive attention and characteristics of organizational innovation have been studied in various researches (Shyu, Chi, Chiu, & Cheng, 2006). However due to the vastly different conclusions obtained from these studies a general lack of conceptual clarity can be seen which barred a unit definition and proper measurement of organizational innovation (Chuang, Liu, Tsai, & Huang, 2010). Although many definitions are available for organizational innovation, but the only common theme which all the researchers have been agreed upon, is the importance of change and newness in defining innovation (Read, 2000). Current literature on organizational innovation suffers from dissimilarity of results (Chuang et al., 2010). Based on the previous studies, conducting research on this topic and elaborating the context of organizational innovation in future studies would be beneficial and favorable (Chuang et al., 2010; Damanpour, 1991; Read, 2000; Wolfe, 1994).

Over the past years, studying the antecedents of organizational innovation was one of the main streams of research in this area. Research on organizational innovation antecedents attempts to identify the factors that enhance and facilitate organizational innovation. Organization's characteristics, behaviours of organizational members, and extra-organizational factors were identified as three main antecedents of organizational innovation (Obenchain, 2002). Among the three categories of organizational innovation antecedents, behaviours and characteristics of organizational members had been one of the extensive standing research areas in the field of organizational innovation (Rogers, 2005). As a result, some researchers investigated the importance of leadership in relation with organizational innovation and identified related factors such as leader's behaviors or characteristics that significantly affect organizational innovation (Gumusluoglu & Ilsev, 2009b; Jung et al., 2003; Makri & Scandura, 2010; Shin, 1996). Previous studies revealed that leadership with its dominant role in the organization is one of the key factors that affect organizational innovation (Jung et al., 2008).

In spite of agreement on the importance of leadership for innovation, previous studies in the field of innovation and leadership are not sufficiently

benefited by each other and mostly studied in separate areas (Imran & Anis-ul-Haque, 2011). Thus, more systematic understanding of the relationship between leadership and innovation is not only timely but even essential (Basu & Green, 1997; Jong & Hartog, 2007; Oke, Munshi, & Walumbwa, 2009). Furthermore, beside the importance of leadership for organizational innovation, the paramount importance is having the right type of leadership to effectively drive innovation in the organization (Oke et al., 2009). Over the past few years, some research findings have presented the positive influence of particular leadership styles on innovation in the organization (e.g. supportive leadership (Oldham & Cummings, 1996), participative and democratic leadership (Tierney, Farmer, & Graen, 1999)).

While these studies have provided valuable findings and insights, a set of adoptive leadership behaviors labeled “transformational” held to be more effective in enhancing organizational innovation than other leadership styles (Bass & Riggio, 2006; Gumusluoglu & Ilsev, 2009a; Hsiao, Chang, & Tu, 2009; Jung et al., 2003, 2008; Sarros, Cooper, & Santora, 2008). It has been argued that transformational leadership can promote and foster innovation through focusing on change and seems to be more effective in creating innovative behaviors (Pieterse, van Knippenberg, Schippers, & Stam, 2010). Transformational leadership goes beyond the agreements through involving the followers’ values, linking the identities of followers to organizational identity and increasing the intrinsic motivation in order to achieve a desired performance. Although transformational leadership is reasonably expected to have a positive influence on enhancing organizational innovation, more comprehensive research is still required on elaborating the nature of this link (García-Morales, Matías-Reche, & Hurtado-Torres, 2008; Gumusluoglu & Ilsev, 2009a; Hsiao et al., 2009; Jung et al., 2008; Makri & Scandura, 2010; Mumford, 2002).

Along with development of transformational leadership theory, several authors (Bass, 1985; Kouzes & Posner, 1987; Podsakoff, MacKenzie, Moorman, & Fetter, 1990) tried to conceptualize this leadership style by determining different components and behaviors with relative measurement instrument. Results of research

on the association of different transformational leadership components with organizational innovation are inconclusive (Aragón-Correa, García-Morales, & Córdón-Pozo, 2007; Jaskyte, 2004; Jung et al., 2008). This study focus on particular components of transformational leadership model developed by (Bass, 1985) which includes five key components i.e. idealized influence, attributed charisma, inspirational motivation, intellectual stimulation, and individualized consideration.

Despite being held to be a key driver of innovation at the organizational level, transformational leadership's effects have mostly been studied at the levels of individual employees or organizational subunits (Jung et al., 2008). The problem with such a focus is that, unless the innovative behaviors and individuals' production and subunits are consonant to produce organizational-level outcomes, the organization as a whole still is left without a proper response to the challenges of a competitive market environment. Therefore extending a research to this level of analysis has a good contribution to knowledge (Jung et al., 2008).

In spite of the direct relationship between transformational leadership and organizational innovation, several factors may influence this link. It is necessary to measure the influence of transformational leadership on organizational innovation in an organizational and environmental context rather than analyzing bivariate relationship in isolation (Jung et al., 2003). Previous studies suggested that it is favorable to investigate the moderating or mediating role of other variables in this relationship (Hsiao & Chang, 2011). They emphasized on examining the external or internal organizational attributes that may interact with transformational leadership behaviors in affecting organizational innovation (Jung et al., 2003). Therefore this study bridge the existing gap by elaborating the relationship of transformational leadership and organizational innovation while examining the moderating effect of innovative behaviors on this relationship.

Organizational innovation, transformational leadership and innovative behaviours seem to be related to each other. Innovative behaviors were suggested as

an important factor that influence leadership and innovation in the organization (Henseler & Chin, 2010). According to Oke et al. (2009) the effect of transformational leadership on innovation will be moderated by organizational contexts that encourage innovative behaviors and support innovative culture. In line with Martins and Martins (2002) three innovative behaviors including idea generating, risk taking and decision-making were adopted for this research as moderating variables. Thus the influence of interaction effect between these variables and transformational leadership will be examined on organizational innovation. The moderating effects of aforementioned innovative behaviors have been not considered on the relationship of transformational leadership and organizational innovation by previous studies (Oke et al., 2009).

Review of literature indicated that support for innovative behaviours as an innovation climate in the organization received only limited attention as a moderator (Gumusluoglu & Ilsev, 2009a). In the other word, innovative behaviors as a supportive internal climate is mostly seen by the members of an organization and individuals as a direct and mediating force, rather than as an organization-wide contextual factor. It is has been found that there is a lack of studies which evaluate the moderating role of this factor as representing more of a context within the organization (Scott & Bruce, 1994). Oke et al. (2009) claimed that the effect of transformational leadership on organizational innovation might be moderated by certain organizational context that includes innovative behaviors. As recommended by Oke et al. (2009) this study bridged the existing gap by measuring the moderating role of innovative behaviors which interacts with leadership to influence organizational innovation. According to Martins and Martins (2002: 64) measuring the influence of these behaviors on innovation is a possibility for future research and would be a step in the direction of providing empirical support to their conceptual framework.

Therefore this topic is important because in today's global economy, firms are under constant pressure to innovate their products and services (Jung et al., 2008). Numerous studies have sought to identify factors that can stimulate innovation in the

organization. Among these myriad factors, managers' leadership behaviour has been identified as being one of the most important factors affecting innovation (Amabile, 1998; Jung & Yammarino, 2001; Mumford, Scott, Gaddis, & Strange, 2002). However research in the area of leader influence on innovation has been scarce (Hsiao & Chang, 2011; Makri & Scandura, 2010).

“Being held to be a key driver of innovation at the organizational level, transformational leadership’s effects have mostly been studied at the levels of individual employees or organizational subunits” (Jung et al., 2008: 582). Therefore extending a research to this level of analysis has a good contribution to knowledge (Jong & Hartog, 2007). Although the constructs of transformational leadership could be found in the works of other leadership theorists, but still Bass’ (1985) transformational leadership theory is considered to have apprehended many leadership scholars’ attentions more than twenty years (Muenjohn & Armstrong, 2008). However the association of Bass’s (1985) transformational leadership components with organizational innovation is not clarified in previous studies (Jung et al., 2003).

While considering a direct link between transformational leadership and organizational innovation, it is important to understand that in every organization so many factors may reinforce or fade this linkage. Thus, the inclusion of moderators as intervening variables on this link has yet to be examined comprehensively (Gumusluoglu & Ilsev, 2009a; Jaskyte, 2004; Jung et al., 2008; Khan et al., 2009; Makri & Scandura, 2010). Therefore this research introduces three innovative behaviors, which may interact with transformational leadership in affecting organizational innovation. It has been argued that innovative behaviors are the basis of organizational change and fundamental to organizational innovation (Tsai & Tseng, 2010) and it will be a good trend for the future studies to measure the interaction effect of this factor with leadership in the organization.

Although this study aims to fill up these theoretical gaps, according to our knowledge it is the first research looking for the relationship of transformational leadership and organizational innovation in Iran as a developing country and attempts to fill some practical gaps in this area. In most of developing countries, innovation is not a priority and generally neglected by organizations (Gumusluoglu & Ilsev, 2009b). Dissimilar to other developing countries with a middle income, Iran still has a natural resource-based economy (United Nations, 2005). Due to the importance of export in the world market, growing demand and limited natural resources, diversification through innovation is inevitable. Comparison with similar countries with nearly same technological competencies, Iran's economy depends on the primary sector. As United Nations reports (2005) indoor manufacturing industry works through licensing of technology from foreign countries and sometimes through reverse engineering. Products usually have low quality and high costs and are sold in protected domestic market. "The absence of enterprises that base their innovation strategies on conditions of demand and competition, makes it difficult to derive larger economic benefits from innovation in Iran" (United Nations, 2005: 2).

The large benefit of organizational innovation that is not currently realizing in Iran includes so many opportunities for emergence of enterprises, commercializing new products and developing new entrepreneurs. While competition is an important cause of innovation, based on the United Nations' report (2005) there is a lack of effective competition in Iran's vast majority of industries. This is an obstacle for motivation of firms to innovate and generate new ideas and products.

Institute of Innovation and Information Productivity (IIIP) measured two indexes namely organizational innovation confidence (OIC) and consumer innovation confidence (CIC) among 20 countries and found that the score varies widely across economies. Organizational innovation confidence (OIC) captures three dimensions of innovation confidence: organization's willingness to buy new products or services, willingness to try products or services that involve new technology, and the belief that new products or services will improve working life. Each dimension is measured using a five point Likert scale and then combined into an index at the

national level (Levie, 2010). As indicated in Table 1.1 the OIC score in Iran is 55 which is lower than CIC and supports the lack of organizational innovation and organization's willingness to innovate in Iran.

Table 1.1: The IIP innovation indexes

Nation	2009 IIP Consumer Innovation Confidence Index score	2009 IIP Organizational Innovation Confidence Index score
United Arab Emirates	75	70
Peru	74	76
Chile	69	74
Uruguay	67	72
Brazil	68	73
Spain	66	67
Iran	67	55
Ecuador	61	48
Denmark	59	61
United States	59	56
China	61	54
Iceland	50	46
Belgium	49	53
Shen Zhen	48	46
United Kingdom	42	53
Switzerland	41	45
Slovenia	40	42
Croatia	34	41
Korea Republic	37	35
Hong Kong SAR	33	28

Source: (Levie, 2010: 18)

Based on the aforementioned theoretical and practical gaps, this study investigates the relationship between transformational leadership and organizational innovation with moderating effect of innovative behaviors in Iran as a developing country. This may extend our understanding of organizational innovation and leadership effects in countries that share similar structures, conditions, and institutions with Iran.

Organizational innovation, transformational leadership and innovative behaviors are highly related to each other. The stimulation of organizational innovation is highly depended on an organization that encourages innovation (Tsai & Tseng, 2010). Also it has been discussed that leadership is associated to innovative behaviors directly through individual employees and indirectly through a climate for innovation (Scott & Bruce, 1994). This study looks for the impact of innovative behaviors at the organizational level rather than individual employees. Therefore the indirect (moderating) effect of innovative behaviors is the main focus of this research. This can be explained by an orientation toward innovative change, pursuing new ideas and the perception of a supportive organization for innovation (Scott & Bruce, 1994).

1.3 Research Questions

Based on the background of the study and research gaps, this study will answer the following research questions:

RQ1: What is the relationship between transformational leadership and organizational innovation?

RQ2: What is the relationship between transformational leadership components (i.e. idealized influence, attributed charisma, inspirational motivation, intellectual stimulation, and individualized consideration) and organizational innovation?

RQ3: Do innovative behaviors moderate the relationship between transformational leadership and organizational innovation?

RQ4: Does idea generating moderates the relationship between transformational leadership and organizational innovation?

RQ5: Does risk taking moderates the relationship between transformational leadership and organizational innovation?

RQ6: Does decision-making moderates the relationship between transformational leadership and organizational innovation?

In order to answer the research questions, a number of objectives were identified.

1.4 Research Objectives

The purpose of this study is to elaborate the link between transformational leadership and organizational innovation, while investigating the relationship of particular components of transformational leadership with organizational innovation. Besides, the moderating effect of innovative behaviors including idea generating, risk taking and decision-making will be examined on the relationship of transformational leadership and organizational innovation. For this purpose the following objectives were defined to be achieved:

1. To measure the relationship between transformational leadership and organizational innovation
2. To identify the relationship between transformational leadership components (i.e. idealized influence, attributed charisma, inspirational motivation, intellectual stimulation, and individualized consideration) and organizational innovation

3. To measure the moderating effect innovative behaviors on the relationship between transformational leadership and organizational innovation
4. To measure the moderating effect of idea generating, risk taking and decision-making (i.e. innovative behaviors) on the relationship between transformational leadership and organizational innovation

1.5 Significance and Contribution of the Study

This study has theoretical, practical and methodological contributions to the literature. First of all this research contributes to the body of knowledge by investigating the relationship between transformational leadership and organizational innovation. Although several studies exist on transformational leadership and various researches are available on organizational innovation but research appeared to be limited empirically concerning the relationship of these two constructs (García-Morales et al., 2008; Gumusluoglu & Ilsev, 2009a; Hsiao et al., 2009; Jung et al., 2008; Makri & Scandura, 2010; Mumford, 2002).

Furthermore this research is significant due to developing its own conceptual framework by introducing three innovative behaviors as moderating variables. Previous studies suggested that it is favorable to investigate the moderating or mediating role of other variables in this relationship (Hsiao & Chang, 2011). Hence this study contributes to the body of knowledge by exploring the moderating effects of innovative behaviors and its components (idea generating, risk taking and decision-making) on the relationship between transformational leadership and organizational innovation in a real organizational context.

Moreover, based on the research gaps, most of the studies associating transformational leadership with organizational innovation had been done at the individual level or organizational subunits (Mumford et al., 2002). So the company as a whole still could be left without effective responses to the challenges of competitive business environment (Jung et al., 2008). Therefore extending this research to the organizational level of analysis has a good contribution to the literature.

In this research, more attention was devoted to refine and expand the measurement of organizational innovation. previous studies mostly used R&D expenditures to measure organizational innovation whereas this approach only reflects the tendency of organizations to support innovation (Jung et al., 2008; Makri & Scandura, 2010). This study employed a criterion specifically established for developing countries to measure organizational innovation more comprehensively (Gumusluoglu & Ilsev, 2009a). In this regard organizational innovation was defined with a market-oriented approach and measured based the organization's success in generating innovative outcomes as well as the tendency to support innovation.

Further advance over prior studies is that in spite of difficulties and complexities of research at the organizational level, in this study a larger number of companies were used for sourcing data. This will permits more powerful hypothesis testing in this level of analysis. Additionally as different employees may have different perceptions from their superior's leadership style (Jung et al., 2003), having more than one respondent for each variable in every organization is another significance of this research.

As practical contribution, this study proposes to search the relationship of transformational leadership and organizational innovation in Iran as a developing country from an organizational perspective. None to our knowledge has been conducted before, so the findings of this research may contribute to the ongoing knowledge in this area. In addition, the validity and reliability of leadership theories

and instruments across countries with different cultures creates a strong case for investigating the existing transformational leadership models outside the Western context. Therefore, this study examines Bass's transformational leadership model in Iran as perceived by low and middle level managers.

1.6 Scope of the Study

Considering innovation as a competitive advantage of the organization and the importance of transformational leadership in deriving organizational innovation, the concept of transformational leadership can be introduced to organizational leaders as a means of stimulating innovation in the organization. Based on the findings of United Nations (2005) Iran's vast majority of industries suffers from a lack of effective competition in which has been lead to less organizational innovation, low quality products with high costs and a protected domestic market for sale. On the other hand the score of organizational innovation confidence in Iran (Levie, 2010) indicates a high demand for innovation in the organizations. This suggests that it is necessary to stimulate organizational innovation in Iran in order to respond organization's demand for innovation and compete in global market. Therefore Iranian organizations were considered as the scope of this study and managers from top Iranian companies were selected as respondents. According to our knowledge there has been no study of the relationship between transformational leadership and organizational innovation with moderating effect of innovative behaviors in this scope.

1.7 Operational Definition of Variables

Organizational innovation: “Organizational innovation is the tendency of the organization to develop new or improved products/services and its success in bringing those products/services to the market” (Gumusluoglu & Ilsev, 2009a). In this regard, organizational innovation is operationalized by evaluating, (1) coefficient of innovativeness tendency, (2) success of product innovation, (3) product/service novelty, competitiveness and the newness of technology that has been used in the organization.

Transformational leadership: “Transformational leadership is an adoptive leadership style with five key components which includes idealized influence, attributed charisma, inspirational motivation, intellectual stimulation, and individualized consideration” (Bass, 1985). This study measured the extent of transformational leadership using Multifactor Leadership Questionnaire (MLQ-5X Rater Form) developed by Bass and Avolio (1997).

Idealized influence: “Idealized influence is the leaders’ behaviors that allow them to serve as role models for their followers” (Bass & Riggio, 2006).

Attributed charisma: “Attributed charisma is the elements that are attributed to the leaders by followers and other associates and allow them to serve as role models for their followers” (Bass & Riggio, 2006).

Inspirational motivation: “Inspirational motivation is the leaders’ behaviors that motivate and inspire those around them by providing challenge and meaning to their followers’ work” (Bass & Riggio, 2006).

Intellectual stimulation: “Intellectual stimulation is the leaders’ behaviors that stimulate their followers’ effort to be innovative and creative by questioning assumptions, reframing problems, and approaching old situations in new ways” (Bass & Riggio, 2006).

Individualized consideration: “Individualized consideration is the leaders’ special attention to each individual follower’s needs for achievement and growth by acting as a coach or mentor” (Bass & Riggio, 2006).

Innovative behaviors: “Innovative behaviors are values and norms that encourage innovation and manifest themselves in specific behavioral forms to promote or inhibit creativity and innovation. Innovative behaviors include three behaviors i.e. idea generating, risk taking and decision-making, that encourage innovation when they are accepted as a cultural norm in the organization” (Martins & Martins, 2002). These behaviors are measured by evaluating the employees’ perception of the extent to which innovation is encouraged and supported in their organization.

Idea generating: “Idea generating involves aspects such as encouragement to generate ideas, management’s giving credit for ideas, encouragement to take initiatives and to find new ways of solving problems” (Martins & Martins, 2002).

Risk taking: “Risk taking and experimenting are the tendency to engage in behaviors that might be harmful potentially but provide the opportunity of positive outcomes” (Martins & Martins, 2002).

Decision-making: “Decision-making is defined as the degree to which employees have freedom and authority to participate in solving problems and making decisions” (Martins & Martins, 2002).

1.8 Outline of the Thesis

This thesis has been organized in five chapters. Chapter 1 presents the background of the study and discusses the importance of transformational leadership in stimulating organizational innovation. The relationship of transformational leadership, organizational innovation and innovative behaviors were briefly addressed and research objectives, significance and scope of the study were identified. Chapter 2 includes a review of literature on transformational leadership, organizational innovation and innovative behaviors to develop conceptual framework of the study based on the research gaps. Chapter 3 introduces the research methodology which includes the research design, data collection and data analysis procedure. Chapter 4 illustrates data analysis and quantitative results. Finally, chapter 5 summarizes the research findings and discusses the relevancy of findings to the literature. This chapter includes the conclusion and makes recommendation for future research.

REFERENCES

- Abernathy, W. J. (1978). *The productivity dilemma: roadblock to innovation in the automobile industry*: Johns Hopkins University Press.
- Aguinis, H., Beaty, J. C., Boik, R. J., & Pierce, C. A. (2005). Effect size and power in assessing moderating effects of categorical variables using multiple regression: A 30-year review. *Journal of Applied Psychology* 90, 94-107.
- Alban-Metcalfe, R. J., & Alimo-Metcalfe, B. (2000). An analysis of the convergent and discriminant validity of the Transformational Leadership Questionnaire. *International Journal of Selection and Assessment*, 8, 158–175.
- Albrecht, T. L., & Hall, B. J. (1991). Facilitating talk about new ideas: The role of personal relationships in organizational innovation. *Communication Monographs*, 58, 273-288.
- Amabile, T. M. (1998). How to kill creativity. *Harvard Business Review*, 76(9), 77-87.
- Antonakis, J., Avolio, B. J., & Sivasubramaniam, N. (2003). Context and leadership: An examination of the nine-factor Full-Range Leadership Theory using the Multifactor Leadership Questionnaire. *The Leadership Quarterly*, 14(3), 261-295.
- Arad, S., Hanson, M. A., & Schneider, R. J. (1997). A framework for the study of relationships between organizational characteristics and organizational innovation. *The Journal of Creative Behavior*, 31(1), 42-58.
- Aragón-Correa, J. A., García-Morales, V., J. , & Cordon-Pozo, E. (2007). Leadership and organizational learning's role on innovation and performance: Lessons from Spain. *Industrial Marketing Management Science*, 36(3), 349-359.
- Aryee, S., Walumbwa, F. O., Zhou, Q., & Hartnell, C. A. (2012). Transformational Leadership, Innovative Behavior, and Task Performance: Test of Mediation

- and Moderation Processes. *Human Performance*, 25(1), 1-25. doi: 10.1080/08959285.2011.631648
- Association, G. E. R. (2011). GEM 2011 Adult Population Survey 2012, from <http://www.gemconsortium.org/docs/cat/135/questionnaires>
- AtiehBahar. (2008). Iran's Automotive Industry Overview, 2012, from <http://www.atiehbahar.com/Resource.aspx?n=1000042>
- Avolio, B. J. (1999). *Full Leadership Development: Building the Vital Forces in Organizations*: SAGE Publications.
- Avolio, B. J. (2004). Examining the Full Range Model of Leadership: Looking Back to Transform Forward. In D. V. E. Z. Day, Stephen J. (Ed); Halpin, Stanley M. (Ed) (Ed.), *Leader development for transforming organizations: Growing leaders for tomorrow* (pp. 71-98). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- Avolio, B. J., & Bass, B. (1991). *The full range of leadership development: Basic and advanced manuals*. Binghamton, NY: Bass, Avolio, & Associates.
- Avolio, B. J., Bass, B., & Jung, D. (1999). Re-examining the components of transformational and transactional leadership using the Multifactor Leadership. *Journal of Occupational and Organizational Psychology*, 72(4), 441-462. doi: 10.1348/096317999166789
- Avolio, B. J., Waldman, D. A., & Yammarino, F. J. (1991). Leading in the 1990s: The four I's of transformational leadership. *Journal of European Industrial Training*, 15(4), 9-16.
- Avolio, B. J., & Yammarino, F. J. (2002). *Transformational and Charismatic Leadership: The Road Ahead*: JAI.
- Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing Construct Validity in Organizational Research. *Administrative Science Quarterly*, 36(3), 421-458.
- Banker, A. (2009). Banking and insurance in Iran, Islamic banking. Wikipedia.
- Barclay, D., Higgins, C., & Thompson, R. (1995). The Partial Least Squares (PLS) Approach To Causal Modeling, Personal Computer Adoption and Use As An Illustration. *Technology Studies*, 2(2), 285-309.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.

- Bartol, K. M., Martin, D. C., & Tein, M. (2003). *Management: A Pacific Rim Focus*: McGraw-Hill Australia.
- Bass, B. (1985). *Leadership and performance beyond expectations*. New York: Free Press.
- Bass, B. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics*, 18(3), 19-31.
- Bass, B. (1999). Two Decades of Research and Development in Transformational Leadership. *European journal of work and organizational psychology*, 8(1), 9-32.
- Bass, B., & Avolio, B. J. (1990). *Transformational Leadership Development: Manual for the Multifactor Leadership Questionnaire*: Consulting Psychologists Press.
- Bass, B., & Avolio, B. J. (1995). *MLQ: Multifactor Leadership Questionnaire* (2 ed.). Redwood City, CA: Mind Garden.
- Bass, B., & Avolio, B. J. (1997). *Revised manual for the Multifactor Leadership Questionnaire*. Palo Alto, CA: Mind Garden.
- Bass, B., Avolio, B. J., Jung, D., & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology Bulletin*, 88(2), 207–218.
- Bass, B., & Riggio, R. E. (2006). *Transformational leadership*. Mahwah, N.J.: L. Erlbaum Associates.
- Basu, R., & Green, S. G. (1997). Leader-Member Exchange and Transformational Leadership: An Empirical Examination of Innovative Behaviors in Leader-Member Dyads. *Journal of Applied Social Psychology*, 27(6), 477-499. doi: 10.1111/j.1559-1816.1997.tb00643.x
- Becheikh, N., Landry, R., & Amara, N. (2006). Lessons from innovation empirical studies in the manufacturing sector: A systematic review of the literature from 1993–2003. *Technovation*, 26(5-6), 644-664. doi: 10.1016/j.technovation.2005.06.016
- Behling, O., & McFillen, J. M. (1996). A syncretical model of charismatic/transformational leadership. *Group and Organizational Management*, 21, 163–191.
- Bennis, W. G., & Nanus, B. (1985). *Leaders: the strategies for taking charge*: Harper & Row.

- Brislin, R. W. (1986). The wording and translation of research instruments. In W. J. Lonner & J. W. Berry (Eds.), *Field methods in cross-cultural research* (pp. 137-164). Thousand Oaks, CA, US: Sage Publications, Inc.
- Bryman, A. (1992). *Charisma and leadership in organizations*. London: Sage Publications.
- Burns, J. M. (1978). *Leadership*. New York: Harper & Row.
- Camisón-Zornoza, C., Lapiedra-Alcamí, R., Segarra-Ciprés, M., & Boronat-Navarro, M. (2004). A Meta-analysis of Innovation and Organizational Size. *Organization Studies*, 25(3), 331-361. doi: 10.1177/0170840604040039
- Chatman, J. A., & Cha, S. E. (2003). Leading by Leveraging Culture. *California Management Review*, 45(4), 20–34.
- Chin, W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–336). Mahwah, NJ: Erlbaum.
- Chin, W. (2010). How to Write Up and Report PLS Analyses. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares* (pp. 655-690): Springer Berlin Heidelberg.
- Chin, W., Marcolin, B. L., & Newsted, P. R. (2003). A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and an Electronic-Mail Emotion/Adoption Study. *Info. Sys. Research*, 14(2), 189-217. doi: 10.1287/isre.14.2.189.16018
- Chuang, L.-M., Liu, C.-C., Tsai, W.-C., & Huang, C.-M. (2010). Towards an analytical framework of organizational innovation in the service industry. *African Journal of Business Management* 4(5), 790-799.
- CIA. (2011). The World Factbook, Middle East, Iran *The World Factbook* (Vol. 2012): Central Intelligence Agency.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*: L. Erlbaum Associates.
- Coltman, T., Devinney, T. M., Midgley, D. F., & Venaik, S. (2008). Formative versus reflective measurement models: Two applications of formative measurement. *Journal of Business Research*, 61(12), 1250-1262. doi: 10.1016/j.jbusres.2008.01.013

- Conger, J. A. (1999). Charismatic and transformational leadership in organizations: An insider's perspective on these developing streams of research. *The Leadership Quarterly*, *10*(2), 145-179. doi: 10.1016/s1048-9843(99)00012-0
- Conger, J. A., & Kanungo, R. N. (1988). *Charismatic leadership in organizations*. Oaks, CA: Sage.
- Cooper, J. R. (1998). A multidimensional approach to the adoption of innovation. *Management Decision*, *36*(8), 493-502.
- Coopey, J., Keegan, O., & Emler, N. (1998). Managers' Innovations and the Structuration of Organizations. *Journal of Management Studies*, *35*(3), 263-284. doi: 10.1111/1467-6486.00093
- Crum, D. J. (2006). *Leadership Support for Innovation: A Survey of United States Navy Senior Executives*. PhD, Capella University. Retrieved from <http://books.google.com.my/books?id=0G1Yyy3BrEsC>
- Cummings, T. G., & Huse, E. F. (1989). *Organizational Development and Change*. Saint Paul, Minn.: West.
- Czarnitzki, D., & Kraft, K. (2001). *Firm Leadership and Innovative Performance: Evidence from Seven EU Countries*: Zentrum für Europäische Wirtschaftsforschung.
- Daft, R. L. (1978). A Dual-Core Model of Organizational Innovation. *Academy of Management Review*, *21*(2), 193-210.
- Damanpour, F. (1991). Organizational innovation: a meta-analysis of effects of determinants and moderators. *Academy of Management Journal* *34*(5), 55–90.
- Damanpour, F. (1992). Organizational Size and Innovation. *Organization Studies*, *13*(3), 375-402. doi: 10.1177/017084069201300304
- Damanpour, F. (1996). Organizational Complexity and Innovation: Developing and Testing Multiple Contingency Models. *Management Science*, *42*(5), 693-716.
- Dibbern, J., & Chin, W. (2005). Multi-group comparison: testing a PLS-model on the sourcing of application software services across Germany and the U.S.A. using a permutation based algorithm. In F. W. Bliemel, A. Eggert, G. Fassott & J. Henseler (Eds.), *Handbuch PLS Pfadmodellierung: Methode, Anwendung, Praxisbeispiele* (pp. 135–159). Stuttgart: Schffer: Poeschel.
- Downton, J. V. (1973). *Rebel leadership: commitment and charisma in the revolutionary process*: Free Press.

- Efron, B., & Gong, G. (1983). A Leisurely Look at the Bootstrap, the Jackknife, and Cross-Validation. *The American Statistician*, *37*(1), 36-48.
- Encyclopedia, N. (2012). Encyclopedia of the Nations, Asia and Oceania, Iran, 2012
- Filipczak, B. (1997). It takes all kinds: Creativity in the work force. *Training*, *34*(5), 32-40.
- Fornell, C., & Cha, J. (1994). Partial least squares. *Advanced methods of marketing research*, *407*, 52-78.
- Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50.
- Friedman, I. (2003). School Organizational Values: The Driving Force for Effectiveness and Change The Ethical Dimensions of School Leadership. In P. Begley & O. Johansson (Eds.), (Vol. 1, pp. 161-179): Springer Netherlands.
- García-Morales, V. J., Matías-Reche, F., & Hurtado-Torres, N. (2008). Influence of transformational leadership on organizational innovation and performance depending on the level of organizational learning in the pharmaceutical sector. *Journal of Organizational Change Management*, *21*(2), 188-212. doi: 10.1108/09534810810856435
- Gardner, W. L., & Avolio, B. A. (1998). The charismatic relationship: A dramaturgical perspective. *Academy of Management Review*, *23*(1), 32-58.
- Gay, L. R., Mills, G. E., & Airasian, P. (2009). *Education Research Competencies for Analysis and Applications*. N.J: Pearson Education, .
- Gopalakrishnan, S., & Damanpour, F. (1997). A review of innovation research in economics, sociology and technology management. *Omega*, *25*(1), 15-28. doi: 10.1016/s0305-0483(96)00043-6
- Götz, O., Liehr-Gobbers, K., & Krafft, M. (2010). Evaluation of Structural Equation Models Using the Partial Least Squares (PLS) Approach Handbook of Partial Least Squares. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), (pp. 691-711): Springer Berlin Heidelberg.
- Gudergan, S. P., Ringle, C. M., Wende, S., & Will, A. (2008). Confirmatory tetrad analysis in PLS path modeling. *Journal of Business Research*, *61*(12), 1238-1249. doi: 10.1016/j.jbusres.2008.01.012

- Gumusluoglu, L., & Ilsev, A. (2006). Moderating Effects of Climate and External Support on Transformational Leadership and Technological Innovation: An Investigation in Creative Ventures in Turkey. *Technology Management for the Global Future* 2, 898-907.
- Gumusluoglu, L., & Ilsev, A. (2009a). Transformational Leadership and Organizational Innovation: The Roles of Internal and External Support for Innovation *journal of product innovation management*, 26, 264–277.
- Gumusluoglu, L., & Ilsev, A. (2009b). Transformational leadership, creativity, and organizational innovation. *Journal of Business Research*, 62(4), 461-473. doi: 10.1016/j.jbusres.2007.07.032
- Haenlein, M., & Kaplan, A. (2004). A Beginner's Guide to Partial Least Squares Analysis. *Understanding Statistics*, 3(4), 283–297.
- Hage, J. T. (1998). *Organizational innovation*: Ashgate.
- Hage, J. T., & Dewar, R. (1973). Elite value versus organizational structure in predicting innovation. *Administrative Science Quarterly*, 18(3), 279–290.
- Hair, J., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM. Indeed a Silver Bullet. *Journal of Marketing Theory & Practice*, 19(2), 139-151.
- Hair, J., Sarstedt, M., Ringle, C., & Mena, J. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414-433. doi: 10.1007/s11747-011-0261-6
- Hansen, J. (1992). Innovation, firm size, and firm age. *Small Business Economics*, 4(1), 37-44. doi: 10.1007/bf00402214
- Hasenfeld, Y. (1983). *Human Service Organizations*. Upper Saddle River, N.J.: Prentice Hall.
- Henseler, J., & Chin, W. W. (2010). A Comparison of Approaches for the Analysis of Interaction Effects Between Latent Variables Using Partial Least Squares Path Modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 17(1), 82-109. doi: 10.1080/10705510903439003
- Henseler, J., & Fassott, G. (2010). Testing Moderating Effects in PLS Path Models: An Illustration of Available Procedures. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares* (pp. 713-735.). Berlin: Springer.

- Henseler, J., Fassott, G., Dijkstra, T. K., & Wilson, B. (2012). Analysing quadratic effects of formative constructs by means of variance-based structural equation modelling. *European Journal of Information Systems* 21(99–112).
- Henseler, J., Ringle, C., & Sinkovics, R. (2009). The use of partial least squares path modeling in international marketing in Rudolf R. Sinkovics, Pervez N. Ghauri (ed.) *New Challenges to International Marketing (Advances in International Marketing, Volume 20)*. 277-319. doi: citeulike-article-id:9257769
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2012). Using Partial Least Squares Path Modeling in International Advertising Research: Basic Concepts and Recent Issues *Handbook of Research in International Advertising* (pp. 252-276). Wiesbaden Cheltenham Edward Elgar Publishing.
- Hindle, K., Klyver, K., & Hancock, G. (2007). Entrepreneurial Innovation in Australia in 2006: A Summary of Salient Data from the 2006 GEM Australia National Adult Population Survey. *Swinburne University of Technology*, 4(3).
- Hofstede, G. (2012). National Culture, countries, 2012, from <http://geert-hofstede.com/iran.html>
- House, R. J., & Studies, U. o. T. F. o. M. (1977). *A 1976 Theory of Charismatic Leadership*: Faculty of Management Studies, University of Toronto.
- Howell, J. M., Neufeld, D., & Avolio, B. (2005). Examining the relationship of leadership and physical distance with business unit performance. *The Leadership Quarterly*, 16(2), 273–285.
- Hsiao, H.-C., & Chang, J.-C. (2011). The role of organizational learning in transformational leadership and organizational innovation. *Asia Pacific Education Review*, 12(4), 621-631. doi: 10.1007/s12564-011-9165-x
- Hsiao, H.-C., Chang, J.-C., & Tu, Y. (2009). *The influence of transformational leadership and support for innovation on organizational innovation: from the vocational high school teachers' perspective*. Paper presented at the 2009 IEEE International Conference on Industrial Engineering and Engineering Management, .
- Hsu, Y.-H., & Fang, W. (2009). Intellectual capital and new product development performance: The mediating role of organizational learning capability. *Technological Forecasting & Social Change* 76, 664–677.

- Hui Ying, O. (2009). *Transformational Leadership And Organizational Innovation: A Study Of Mncs In Malaysia*. Masters, USM.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strategic Management Journal*, 20(2), 195-204. doi: 10.1002/(sici)1097-0266(199902)20:2<195::aid-smj13>3.0.co;2-7
- Huy, Q. N. (2001). In praise of middle managers. *Harvard Business Review*, 79(8), 72.
- Imran, R., & Anis-ul-Haque, M. (2011). Mediating Effect of Organizational Climate between Transformational Leadership and Innovative Work Behaviour. *Pakistan Journal of Psychological Research*, 26(2), 183-199.
- Institute, I. M. (2012). Top 100 Iranian Companies, from <http://imi100.imi.ir/SitePages/Home.aspx>
- James, L. R., Demaree, R. G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology*, 69(1), 85.
- Jandaghi, G., Zareei Matin, H., & Farjami, A. (2009). Comparing transformational leadership in successful and unsuccessful companies. *The Journal of International Social Research*, 2(6), 356-372.
- Jaskyte, K. (2004). Transformational leadership, organizational culture, and innovativeness in nonprofit organizations. *Nonprofit Management and Leadership*, 15(2), 153-168. doi: 10.1002/nml.59
- Javidan, M., & Dastmalchian, A. (2003). Culture and Leadership in Iran: The Land of Individual Achievers, Strong Family Ties, and Powerful Elite. *Building Effective Networks*, 17(4), 127-142.
- Jong, J. P. J. d., & Hartog, D. N. D. (2003). *Leadership as a Determinant of Innovative Behaviour: A Conceptual Framework*. Netherlands: EIM Business & Policy Research.
- Jong, J. P. J. d., & Hartog, D. N. D. (2007). How leaders influence employees' innovative behaviour. *European Journal of Innovation Management*, 10(1), 41-64. doi: 10.1108/14601060710720546
- Judge, W. Q., Fryxell, G. E., & Dooley, R. S. (1997). The new task of R&D management: creating goal-directed communities for innovation. *California Management Review*, 39(3), 72-85.

- Jung, D., & Avolio, B. J. (1999). Effects of leadership style and followers' cultural orientation on performance in group and individual task conditions. *Academy of Management Journal* 42(2), 208–218.
- Jung, D., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The Leadership Quarterly*, 14(4-5), 525-544. doi: 10.1016/s1048-9843(03)00050-x
- Jung, D., Chow, C., & Wu, A. (2008). Towards understanding the direct and indirect effects of CEOs' transformational leadership on firm innovation. *The Leadership Quarterly*, 19(5), 582-594. doi: 10.1016/j.leaqua.2008.07.007
- Jung, D., & Yammarino, F. (2001). Perceptions of transformational leadership among Asian Americans and Caucasian Americans: a level of analysis perspective. *The Journal of Leadership Studies*, 8(1), 3–21.
- Kelley, D. J., Singer, S., & Herrington, M. (2012). The Global Entrepreneurship Monitor 2011 Global Report: GEM.
- Kent, T. W., Crotts, J. C., & Aziz, A. (2001). Four factors of transformational leadership behavior. *The Leadership & Organization Development Journal*, 22(221-229).
- Kent, T. W., Johnson, J. A., & Graber, D. R. (1996). Leadership in the formation of new health care environment *Health Care Supervisor*, 15(2), 27-34.
- Khan, R., Rehman, A. U., & Fatima, A. (2009). Transformational leadership and organizational innovation: Moderated by organizational size. *African Journal of Business Management*, 3(11), 678-684.
- King, N., & Anderson, N. (1990). Innovation in Working Groups. In M. A. West & J. L. Farr (Eds.), *Innovation and Creativity at Work*. New York: Wiley.
- Kopytowski, J., & Rejewski, P. (2003). *Invention to innovation bridge – heuristic rules*. Warsaw, Poland: Industrial Chemistry Research Institute.
- Kotter, J. P., & Heskett, J. L. (1992). *Corporate culture and performance*: Free Press.
- Kouzes, J. M., & Posner, B. Z. (1987). *The leadership challenge: how to get extraordinary things done in organizations*: Jossey-Bass.
- Krejcie, R. V., & Morgan, D. W. (1970). DETERMINING SAMPLE SIZE FOR RESEARCH ACTIVITIES *EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT*, 30, 607-610.

- Latan, H., & Ghozali, I. (2012). *Partial Least Squares: Concept, Technique and Application SmartPLS for Empirical Research*: BP UNDIP.
- Levie, J. (2010). The IIP Innovation Confidence Index 2009 Report.
- Lin, C., Yeh, J., & Hung, G. (2012). Internal Impediments of Organizational Innovation: An Exploratory Study. *Journal of the Knowledge Economy*, 3(2), 185-198. doi: 10.1007/s13132-011-0077-0
- Lussier, R. N., & Achua, C. F. (2009). *Leadership: Theory, Application, & Skill Development*: Cengage Learning.
- Maier, N. R. F. (1970). *Problem solving and creativity in individuals and groups*: Brooks/Cole Pub. Co.
- Makri, M., & Scandura, T. A. (2010). Exploring the effects of creative CEO leadership on innovation in high-technology firms. *The Leadership Quarterly*, 21(1), 75-88. doi: 10.1016/j.leaqua.2009.10.006
- Malhotra, N. K., & Birks, D. F. (2007). *Marketing Research: An Applied Approach*: Pearson Education.
- Martins, E. (1987). *Organizational culture in a financial institution*. D Phil, University of Pretoria.
- Martins, E. (2000). "Die invloed van organisasiekultuur op kreatiwiteit en innovasie in 'n universiteitsbiblioteek" [*The influence of organisational culture on creativity and innovation in a university library*]. MA-Dissertation, University of South-Africa, Pretoria.
- Martins, E., & Martins, N. (2002). An organizational culture model to promote creativity and innovation. *Journal of Industrial Psychology*, 28(4), 58-65.
- Martins, E., & Terblanche, F. (2003). Building organisational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6(1), 64-74.
- McDonald, R. P. (1996). Path analysis with composite variables. *Multivariate Behavioral Research*, 31(2), 239-270.
- Muenjohn, N., & Armstrong, A. (2008). Evaluating the Structural Validity of the Multifactor Leadership Questionnaire (MLQ), Capturing the Leadership Factors of Transformational-Transactional Leadership. *Contemporary Management Research*, 4(1), 3-14.
- Mumford, M. D. (2002). Leading creative people: Orchestrating expertise and relationships. *The Leadership Quarterly*, 13(6), 705-750.

- Mumford, M. D., & Gustafson, S. B. (1988). Creativity syndrome: Integration, application, and innovation. *Psychological Bulletin*, *103*(1), 27-43. doi: 10.1037/0033-2909.103.1.27
- Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002). Leading creative people: Orchestrating expertise and relationships. *Leadership Quarterly*, *13*(705-50).
- Nations, U. (2005). Science, Technology and Innovation Policy Review, The Islamic Republic of Iran.
- Northouse, P. G. (2012). *Leadership: Theory and Practice*: SAGE Publications.
- Obenchain, A. M. (2002). *Organization culture and organizational innovation in not-for-profit, private and public institutions of higher education*. D.B.A. 3039605, Nova Southeastern University, United States -- Florida.
- Oke, A., Munshi, N., & Walumbwa, F. (2009). The Influence of Leadership on Innovation Processes and Activities. *Organizational Dynamics*, *38*(1), 64-72. doi: 10.1016/j.orgdyn.2008.10.005
- Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, *39*(3), 607-655.
- Paulsen, N., Maldonado, D., Callan, V. J., & Ayoko, O. (2009). Charismatic leadership, change and innovation in an R&D organization. *Journal of Organizational Change Management Science*, *22*, 511-523.
- Pearce, C. L., & Sims, H. P. (2002). Vertical Versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams: An Examination of Aversive, Directive, Transactional, Transformational, and Empowering Leader Behaviors. *Group Dynamics: Theory, Research, and Practice* *6*(2), 172-197.
- Pedhazur, E. J. (1997). *Multiple regression in behavioral research: explanation and prediction*: Harcourt Brace College Publishers.
- Pieterse, A. N., van Knippenberg, D., Schippers, M., & Stam, D. (2010). Transformational and transactional leadership and innovative behavior: The moderating role of psychological empowerment. *Journal of Organizational Behavior*, *31*(4), 609-623. doi: 10.1002/job.650
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature

- and Recommended Remedies. *Journal of Applied Psychology*, 88 (5), 879–903.
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, 1(2), 107-142. doi: 10.1016/1048-9843(90)90009-7
- Poppendick, P. (2009). *Direct and indirect effects of transformational leadership on innovative behavior*. Bachelor, University of Twente.
- Rafferty, A. E., & Griffin, M. A. (2004). Dimensions of transformational leadership: Conceptual and empirical extensions. *The Leadership Quarterly*, 15(3), 329-354. doi: 10.1016/j.leaqua.2004.02.009
- Ravichandran, T. (1999). Redefining organizational innovation: Towards theoretical advancements. *The Journal of High Technology Management Research*, 10(2), 243-274. doi: 10.1016/s1047-8310(99)00015-2
- Read, A. (2000). Determinants of Successful Organisational Innovation: A Review of Current Research. *Journal of Management Practice*, 3(1), 95-119.
- Reinartz, W., Haenlein, M., & Henseler, J. (2009). An empirical comparison of the efficacy of covariance-based and variance-based SEM. *International Journal of Research in Marketing*, 26(4), 332-344. doi: 10.1016/j.ijresmar.2009.08.001
- Ringle, C. M., Wende, S., & Will, S. (2005). SmartPLS 2.0 (M3) beta, from <http://www.smartpls.de>
- Rogers, E. (2005). *Diffusion of Innovations*. New York, NY: The Free Press.
- Sarros, J. C., Cooper, B. K., & Santora, J. C. (2008). Building a Climate for Innovation Through Transformational Leadership and Organizational Culture. *Journal of Leadership & Organizational Studies*, 15(2), 145-158. doi: 10.1177/1548051808324100
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2012). *Research Methods for Business Students*: Pearson Education Canada.
- Schein, E. H. (2004). *Organizational Culture and Leadership*: John Wiley & Sons.
- Schumpeter, J. A. L. O. (1934). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle*. London: Oxford University Press.

- Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal* 37(3), 580–607.
- Shamir, B., House, R. J., & Arthur, M. B. (1993). The motivational effects of charismatic leadership: A self-concept based theory. *Organization Science*, 4, 577-594.
- Shefer, D., & Frenkel, A. (2005). R&D, firm size and innovation: an empirical analysis. *Technovation*, 25(1), 25-32. doi: 10.1016/s0166-4972(03)00152-4
- Shin, J. (1996). *The Effects of Executive Leadership on Organizational Innovation in Nonprofit, Human Service Organizations (HSOs)*: University of Pittsburgh.
- Shyu, M. L., Chi, H. J., Chiu, W. H., & Cheng, B. W. (2006). *A Conceptual Model of Organizational Innovation: An Empirical Study on Universities of Technology in Taiwan* Paper presented at the 2006 IEEE International Conference on Management of Innovation and Technology.
- Slappendel, C. (1996). Perspectives on Innovation in Organizations. *Organization Studies*, 17(1), 107-129 doi: 10.1177/017084069601700105
- Sosik, J., Kahai, S., & Avolio, B. (1998). Transformational leadership and dimensions of creativity: Motivating idea generation in computer-mediated groups. *Creativity Research Journal*, 11(2), 111-121.
- Stogdill, R. M. (1974). *Handbook of leadership: A survey of theory and research*. New York: The Free Press.
- Stoker, J. L., Looise, J. C., Fisscher, O. A., & De Jong, R. D. (2001). Leadership and innovation: Relations between leadership, individual characteristics and the functioning of R&D teams. *International Journal of Human Resource Management*, 12(7), 1141-1151.
- Tenenhaus, M., Amato, S., & Esposito Vinzi, V. (2004). *A global Goodness-of-Fit index for PLS structural equation modelling*. Paper presented at the XLII SIS (Italian Statistical Society) Scientific Meeting, Padova, Italy.
- Tenenhaus, M., Mauger, E., & Guinot, C. (2010). Use of ULS-SEM and PLS-SEM to Measure a Group Effect in a Regression Model Relating Two Blocks of Binary Variables. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares* (pp. 125-140): Springer Berlin Heidelberg.

- Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel Psychology, 52*(3), 591-620. doi: 10.1111/j.1744-6570.1999.tb00173.x
- Tsai, C.-T., & Chen, K.-F. (2010). *When Transformational Leadership and Learning Orientation Impact on Innovation Behavior: The Importance of Ambidextrous Organization*. Paper presented at the International Conference on Business and Information, Japan.
- Tsai, C.-T., & Tseng, W.-W. (2010). *A research agenda of transformational leadership and innovative behavior for the hospitality industry: An integrated multilevel model*. Paper presented at the Annual International Council on Hotels Restaurants and Institutional Education Conference, Puerto Rico, UAS.
- Tucker, B. A., & Russell, R. F. (2004). The influence of the transformational leader. *Journal of Leadership and Organizational Studies, 10*(4), 103-111.
- Tushman, M. L., & O'Reilly, C. A. (1997). *Winning through innovation: A practical guide to leading organizational change and renewal*. Boston, MA: Harvard University Press.
- Vandenberghe, C. (1999). Organizational culture, person-culture fit, and turnover: a replication in the health care industry. *Journal of Organizational Behavior, 20*, 175-184.
- Vilares, M. J., Almeida, M. H., & Coelho, P. S. (2010). Comparison of Likelihood and PLS Estimators for Structural Equation Modeling: A Simulation with Customer Satisfaction Data Handbook of Partial Least Squares. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), (pp. 289-305): Springer Berlin Heidelberg.
- Weber, M. (1947). *The theory of social and economic organization*. New York: Free.
- West, M. A., & Farr, J. L. (1990). Innovation At Work. In M. A. West & J. L. Farr (Eds.), *Innovation And Creativity At Work: 1-13*. Chichester, England: Wiley.
- Wikipedia. (2010). Petroleum industry in Iran *Wikipedia*.
- Wold, H. (1975). Path models with latent variables: The NIPALS approach. In H. M. Blalock, A. Aganbegian, F. M. Borodkin, R. Boudon & V. Capocchi (Eds.), *Quantitative sociology: International perspectives on mathematical and statistical modeling* (pp. 307-357). New York: Academic Press.

- Wolfe, R. A. (1994). Organizational Innovation: Review, Critique and Suggested Research. Directions. *Journal of Management Studies*, 31(3), 405-431. doi: 10.1111/j.1467-6486.1994.tb00624.x
- Woodman, R. W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a Theory of Organizational Creativity. *Academy of Management Review*, 18(2), 293–321.
- Yin, R. K. (2008). *Case Study Research: Design and Methods*: SAGE Publications.
- Zheng, C. (2009). *A correlational study of organizational innovation capability and two factors: Innovation drivers and organizational culture*. D.M. 3394575, University of Phoenix, United States -- Arizona. Retrieved from <http://search.proquest.com/docview/305123529?accountid=41678> ProQuest Dissertations & Theses (PQDT) database.