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IMPACT OF MANAGERS' EXPERIENCE ON FIRM'S INNOVATION: EMPIRICAL EVIDENCE FROM MIDDLE EAST AND NORTH AFRICAN (MENA)

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¹ Impact of Mangers' Experience on Firm's Innovation: Empirical Evidence from Middle East and North African (MENA)

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Abstract

It is widely believed that innovation drives growth at macro level and improves firm's productivity and performance at micro level. The Middle East and North African (MENA) region lagging behind in terms of innovation activities. The objective of the study was to investigate the effect of managerial experience on innovation activities in Middle East and North African (MENA) region using World Enterprise Survey data. The study utilized the multilevel logistic regression model. The innovation is measured through the survey question "during the last three years, has this establishment introduced new or significantly improved products or services" and the managers' experience is measured by "how many years of experience working in this sector does the top manager have". The results of multilevel logistic model indicate that experience of the manager has positive impact of the innovation.

1. Introduction

As compared to other regions, the Middle East and North African (MENA) region lagging behind in terms of Innovation activities. It is widely believed that innovation drives growth at macro level and improves firm's productivity and performance at micro level. Firms' innovation is a process of change through increase in the knowledge base. Schumpeter (1934) clearly provided more explicit analysis of innovation by considering it an important determinant of growth. In recent years, trend in enterprise sector moves towards innovation-driven competition (Santamaría et al., 2012). The knowledge, skill and experience of

manger augment innovation activities through creativity and efficient allocation of resources. The profit of the firm depends upon the manager capabilities to transform resources.

Over the last couple of decades, a considerable body of research has risen using the firm as unit of analysis in the area of innovation. Bulk of studies have identified several influential determinants of innovation ranging from firms' specific factors, such as age of the firm, size of the firm, ownership structure and sectors of the firm (Audretsch & Feldman, 1996; Jordan & O'leary, 2008; Roper et al., 2008; Tether, 1998) to institutional and bureaucratic factors (Anokhin & Schulze, 2009; Damanpor, 1996; Imran et al., 2020; Veracierto, 2008). In general, less consideration has been paid to entrepreneurial and managerial factors (Nuseir et al., 2020; Basheer et al., 2021; Hameed et al., 2021). Despite the abundance of empirical evidence, the search for discovering the factors that augment innovation is still an attractive area of research.

The literature on innovation demonstrates the significance of the macroeconomic factors by adopting the strategy of outward-oriented development, such as R&D (Wang & Kafouros, 2009), international trade (Wei & Liu, 2006) and country characteristics (Becheikh et al., 2006; Souitaris, 2003). Wang & Kafouros (2009) discouraged outward oriented policies and advised the firms to adopt performance enhancing microeconomic mechanism. This study emphasizes on the entrepreneurial and managerial factors as significant determinants for innovative activities (Koc & Ceylan, 2007). Firms' innovative activities heavily depends upon the serious commitment of the manager (Kleinschmidt et al., 2007). Literature documented that the likelihood of innovation activities increases with efficient leadership (García-Morales et al., 2012), information sharing, strategies and organizational skills (Peeters & de la Potterie, 2006).

The objective of the study is to investigate the effect of managerial experience on innovation activities in Middle East and North African (MENA) region using World Enterprise Survey data. The literature provides significantly few empirical evidences on the aspect of entrepreneurial and managerial determinants of innovation in emerging economies (Bourke & Crowley, 2015). The current study contributes to literature on innovation with particular focus on the organizational factors such as experience of managers. To the best of our knowledge none of the study has explored this aspect of innovation with special reference to Middle East and North African (MENA) region. Hence, it will be the significant addition to the existing literature.

The current study is organized as follows. The review of existing literature is provided in section 2. The data and methodology is discussed in section 3. The empirical results are in section 4 while the conclusion and policy implication are mentioned in section 5.

2. Review of Literature

It is well documented in the literature that firms' ability to improve efficiency, productivity and to innovate depends upon the entrepreneur's abilities and their innovative behavior through knowledge and skills (He & Wong, 2012; Love et al., 2011; Roper et al., 2008). Management experience and skill workforce influence innovation positively and increase the possibilities to exploit knowledge (Cohen & Levinthal, 1990; Cuijpers et al., 2011). Moreover, employees with skilled human capital upsurge creativity and innovation (Kang et al., 2007; Lepak & Snell, 1999). Innovation performance depends upon the adoption of improved and advance manufacturing technologies which experience managers can commence (Abrunhosa & Sá, 2008; Santos-Vijande & Álvarez-González, 2007).

Furthermore, Entrepreneur may deliberately flinches specific business activities which reduces production cost and ultimately improve innovation (Love & Roper, 2001). The abundant of empirical literature inspected the impact of entrepreneurial and organizational characteristics on firm performance. Balkin et al. (2000) used the dataset of high technology firm to explore the relationship between the CEO pay and innovation. The study found compensation of CEO has positive effect on the innovation. The optimal allocation of resources by adopting dominants strategy for the betterment of the business entirely depends upon the vision of the entrepreneur (Santos-Vijande & Álvarez-González, 2007). Goll et al. (2008) proved the positive impact of management characteristics on business strategy and performance in airline industry. Wong (2013) investigated the role of management involvement in innovation and found the positive impact of managerial participation on technical and organizational innovation. Heyden et al. (2017) found that managerial age and experience are significant indicators of managerial characteristics and have positive impact on research and development investment in US manufacturing firms. The empirical evidence suggested that the skill and education of entrepreneur initiate creativity and augment innovation (Bantel & Jackson, 1989; Daellenbach et al., 1999) greater experience and individual managerial skill leads to improve decision making and positively influence innovation activities (Ellis et al., 2015; McWilliams & Zilbermanfr, 1996).

3. Methodology

Keeping in view the multilevel nature of the firm’s level innovation, the multilevel logistic regression model is used to empirically test the impact of entrepreneurial experience on firm’s innovation in the case of Middle East and North African (MENA) region. To formulate the multilevel logistic regression model level 1 & level 2 fixed predictors added.

Level 1 equation takes the following form

$$logit (Innovation)_{ij} = \beta_{0j} + \beta_{1j} X_{ij}$$

Level 2 equations can be expressed as:

$$\begin{aligned} \beta_{0j} &= \gamma_{00} + \gamma_{01}Z_j + \mu_{0j} \\ \beta_{1j} &= \gamma_{10} \end{aligned}$$

Combined equation is constructed by the following.

$$logit(Innovation)_{ij} = \gamma_{00} + \gamma_{01}Z_j + \gamma_{10}X_{ij} + \mu_{0j}$$

In this model, we are predicting the probability of firm’s innovation activities as a function of a entrepreneurial and managerial-level predictor (experience of manager) and firm-level predictor (Age of firm, size of firm, ownership of firm). In the current study it is hypothesized that entrepreneurial and managerial-level predictor and firm-level predictor both have positive impact on the probability of firms level innovation activities.

Table.1: Description of Variable

Variable	Description and Measurement of Variables
Innovation (INOV)	Innovation is measured through WES question h1, it is described as “during the last three years, has this establishment introduced new or significantly improved products or services”, it is coded as: innovation=1, otherwise=0.
Entrepreneur’s Experience	Entrepreneur’s experience is measured through WES question b7, it is described as “how many years of experience working in this

ENXP	sector does the top manager have”
Manager's Gender MANG	Manager's gender is measured through WES question b7a, it is described as “is the top manager female”, it is coded as: female=1, otherwise=0.
Skilled Workers SWOR	Skilled workers is measured through WES question I4a, it is described as “number of full-time employees at end of last fiscal year: skilled production workers”.
Technology Licence TLIC	Technology Licence is measured through WES question e6, it is described as “do you use technology licensed from a foreign-owned company”, it is coded as: Yes=1, otherwise=0.
Age of firm AGE	Firm age is measured through WES question b5, it is described as “in what year did this establishment begin operations”. The age is calculated through formula “survey year-year of starting operation”
Size of firm SIZE	Firm size measured through WES question a6a, it is described as "the number of permanent workers" (small= worker > 5 and < 20; medium= worker > 20 and < 99; large= worker >100), it is coded as small firm are assumed 0, otherwise 1.
Ownership of firm OWN	The ownership of the firm measured through WES question e6, it is described as “firms that have owned by foreign individuals, companies or organizations”, it is coded as foreign firm are assumed 1, otherwise 0.

4. Empirical Results

The descriptive statistics are given in table.2.

Table 2: Descriptive Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
Innovation (INOV)	7,992	.2822823	.4501381	0	1
Entrepreneur's Experience (ENXP)	7,688	14.641	10.263	5	60
Manager's Gender (MANG)	8,324	.0713599	.2574406	0	1
Skilled Workers (SWOR)	6,699	.137969	.6587068	0	1
Technology License (TLIC)	7,314	.2191954	.4137341	0	1
Age of firm (AGE)	7,378	21.77677	13.71942	2	77
Size of firm (SIZE)	8,362	.6612055	.4733282	0	1
Ownership of firm (OWN)	7,998	1.078395	8.08981	0	100

Table 3 shows the theoretical correlation. The results of correlation matrix show positive relationship between entrepreneur experience and firms level innovation activities.

Table 3: Correlation Matrix

	INOV	ENXP	MANG	SWOR	TLIC	Age	Size	OWN
INOV	1.0000							
ENXP	0.0469	1.0000						
MANG	0.1737	0.0231	1.0000					
SWOR	0.1066	0.0339	0.3000	1.0000				
TLIC	0.2591	0.0216	0.2825	0.1339	1.0000			

Age	0.1559	0.3636	0.1019	0.1408	0.1091	1.0000		
Size	0.1334	0.0577	0.1528	0.1298	0.2428	0.0986	1.0000	
OWN	0.1207	0.0017	0.0646	0.0021	0.1284	0.0439	0.0170	1.0000

Table 3 shows the correlation analysis. It indicates that experience of the manager is positively correlated with the innovation. The results of the correlation matrix also indicate that skilled worker is positively related with innovative activities of the firm. Similarly the technology license, age of the firm, size of the firm and ownership of the firm also positive correlated with the innovative activities of the firm.

Table 4: Result of the Multilevel Logistic Regression Model

Variables	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
Entrepreneur's Experience (ENXP)	.0024499	.0189651	0.13	0.897	-.0347211 .0396209
Manager's Gender (MANG)	.7793478	.1459867	5.34	0.000	.4932191 1.065476
Skilled Workers (SWOR)	.0002019	.0000794	2.54	0.011	.0000462 .0003576
Technology Licence (TLIC)	1.126949	.0858279	13.13	0.000	.9587294 1.295169
Age of firm (AGE)	.0138144	.0027906	4.95	0.000	.008345 .0192839
Size of firm (SIZE)	.445125	.0773831	5.75	0.000	.2934569 .596793
Ownership of firm (OWN)	.0242475	.0045926	5.28	0.000	.0152462 .0332488
Constant	-2.250718	.499481	-4.51	0.000	-3.229683 -1.271753
Observation	7,400				
LR-Test	350.22				
Prob	0.000				
Wald chi2(7)	437.21				
Prob	0.000				

Note: *and** indicate level of significance at 5 and 10 percent, respectively. Robust standard error is shown in single parenthesis and probability value is shown in brackets.

The results of multilevel logistic regression model are shown in table 4. In the empirical analysis the innovation is measured by categorical variable as mention in Table 1 through the survey question “during the last three years, has this establishment introduced new or significantly improved products or services” and the managers’ experience is measured by “how many years of experience working in this sector does the top manager have”. The results of multilevel logistic model indicate that experience of the manager has positive impact of the innovation. This result supports the findings of the Heyden et al. (2017) and Daellenbach et al. (1999). Rogers (2010) explained the reason behind the positive impact of

manager's experience on the firm's innovation. Our results are also in line with the finding of the McWilliams and Zilbermanfr (1996). The results of the current study conflict with the findings of Goll et al. (2008) that degree of risk averse rises with higher level of manager's experience. Because experienced manager are not willing to take unprecedented and novel strategies. The results indicate that gender of the manager has positive impact of the innovation. The male mangers are found more passionate to work, hence more productive and more innovative. The results indicate that skilled has positive impact of the innovation. The skilled workers are found more productive thus augment firm's innovation. The results indicate that technology license has positive impact of the innovation. The firms that acquire technology license are more involved in innovative activities. The other control variables such as age of the firm, size of the firm and ownership of the firm shows significant positive impact on the innovative activities of the firm.

5. Conclusion

The objective of the study was to investigate the effect of managerial experience on innovation activities in Middle East and North African (MENA) region using World Enterprise Survey data. The literature provides significantly few empirical evidences on the aspect of entrepreneurial and managerial determinants of innovation in emerging economies. The current study contributes to literature on innovation with particular focus on the organizational factors such as experience of managers. The results of multilevel logistic model indicate that experience of the manager has positive impact of the innovation. The knowledge, skill and experience of manger augment innovation activities through creativity and efficient allocation of resources. On the basis of the results of the current study it is suggested that firms should hire manager with greater experience. It will not only increase the productive and innovative capacity of the firm but also the profit of the firm in short run and performance of the firm in the long run.

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