

Investigating the Effect of Self-Leadership on Entrepreneurs' Innovation in Small and Medium-Sized Enterprises

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Abstract

Entrepreneurs play an important role in the economic development of countries. In the literature of entrepreneurship, self-leadership and entrepreneurs' innovation are considered as the most driving forces for sustainable development of Small and Medium Sized Enterprises (SMEs). The aim of the present study is to investigate the relationship between self-leadership, its associated strategies, and entrepreneurs' innovation in small and medium-sized enterprise (SMEs) in the textile industry. In terms of objective, this study is considered as an empirical one and the research methodology is descriptive-correlative type. Among 380 textile companies, 191 were selected to be studied using Cochran formula and through the stratified random sampling method. Structural Equation Modeling (SEM) was used for data analysis. Findings of the study show that self-leadership has significant and positive effect on entrepreneurs' innovation. The results also show that there insignificant and positive relationship between behavioral strategies, natural reward strategies, constructive thinking patterns and entrepreneurs' innovation.

Keywords: Entrepreneurs' Innovation, Self-Leadership, Behavior Strategies, Natural Reward Strategies, Constructive Thinking Patterns.

Introduction

Nowadays, knowing where to concentrate on self-leadership within businesses could be a key driver of entrepreneurs' innovation process (Shipton et al., 2005). According to Li (2012), the leadership and managerial practices identity building, nurturing the spirit of collaboration, innovation, constantly work on the relationships with supply chains. They understand and make use of market manoeuvres, and create meaning in the environment. All of these practices need an entrepreneur who is aware of innovation and knows how to use it to build relationships and further collaboration (Hunter & Cushenbery, 2011). Entrepreneurs, as self-leaders in SMEs, need to assume the role of business owner with an entrepreneurial spirit (Houghton & Yoho, 2005).

Self-leadership is about setting goals and getting access to the potential abilities of human resources (Brown & Ryan, 2013). One of the most important aspects of self-leadership is to make sure that people put themselves on the right track and manage their abilities (DiLiello & Houghton, 2006). Self-leadership includes cognitive and behavioral strategies that have a positive effect on self-efficacy (Luthans & Avey, 2011). Self-leadership strategies are generally divided into three groups: I) behavioural strategies; II) natural reward strategies; III) strategies for constructive thinking patterns (Shipton et al., 2005).

Today, science and technology are advancing at an incredible pace, which leads us to a magical era of technological achievements (Hunter & Cushenbery, 2011). The only wise path to manage the business world is that entrepreneurs should adapt themselves to the fast, gradual, and unpredictable changes of the modern era by innovation (Houghton & Yoho, 2005). Entrepreneurs should look for a unique human feature called self-leadership which can contribute to human creativity and innovation (Mohanty, 2009)

According to the definition of leadership and management, self-leadership can be defined as the "process of influencing oneself" (Goffee & Jones, 2005). Manze and Neck (2004) discussed that that self-leadership can be thought of as influencing oneself. The influencing behavior can be explained just like the learning behavior and lies at the heart of leadership development (Manz & Sims, 2001). All the successful entrepreneurs have developed and maintained their self-reliance under all circumstances (Houghton & Neck, 2012). This is because one of the major roles of entrepreneurs is their entrepreneurial role (Neck & Houghton, 2006). Entrepreneurs are considered as the driving force of economic development and play the main role in the development of creativity and innovation (Brown & Ryan (2013). In this line, self-leadership can play an active role in an organization that promotes innovation (Feser,2012).The current study is an effort to investigate the theoretical principles of self-leadership and entrepreneurs' innovation.

Literature Review

The theoretical foundation of self-leadership is built upon social learning theory (Bandura, 1977).Social leaning theory explains how people can influence their own cognition, motivation, and behavior (Yun et al., 2006). Self-leadership explains how self-leaders think and how they

behave according to cognitive, motivational, and behavioural strategies (Feser, 2012). The concept of self-leadership in today's open environment has impressive potential for application in organizations characterized by empowerment and decentralization (Houghton & Yoho, 2005). Self-leadership is defined as a systematic set of strategies through which individuals can influence themselves toward higher levels of performance and innovation (Manz & Neck, 2004). The three strategies associated with self-leadership include behavioral strategies, natural reward strategies, and constructive thinking patterns (Manz & Neck, 2004; Neck & Houghton, 2006).

Behavioral strategies are designed to increase self-awareness leading to successful management of necessary tasks (Feser, 2012). Behavioural strategies are directed towards enhancing self-consciousness and include self-observation, self-goal setting, self-motivation, positive self-feedback, reward, and self-coaching (Goffee & Jones, 2005). Behavioural strategies also enable an individual to identify specific behaviours that need to be changed, enhanced or terminated. Behaviour-focused strategies heighten self-awareness and facilitate personal behavioural management through methods such as self-goal setting, self-reward, self-punishment, self-observation, and self-cueing (Mohanty, 2009).

Natural reward strategies concentrate on the fundamentally pleasurable aspects of work. The two primary approaches in natural reward strategies involve building pleasant features into an activity that is naturally rewarding and focusing on the rewarding aspects (Manz & Neck, 2004). The natural reward strategies can lead to increased feelings of competence and innovation, which can lead to entrepreneurial performance (Zhou & George, 2003).

Constructive thinking pattern strategies involve three primary tools for shaping self-leadership thinking patterns: self-analysis and improvement of belief systems, mental imagery of successful performance outcomes, and positive self-talk (Manz & Neck, 2004). Increased mental imagery of oneself can help lead to the natural reward structure of increased competence and self-determination, which makes an entrepreneur more confident for innovation, mental imagery of successful performance outcomes, and positive self-talk (Manz & Neck, 2004).

Goffee and Jones (2005) in their study stated that although entrepreneurs are innovative enough to fulfill their duties, not everyone can do innovative activities because one of the key elements of the self-leadership concept, i.e. self-navigation. People who are at a good level of self-leadership know quite naturally how to work towards and pursue a goal and also have a high level of internal motivation. For example, during the first stage of the innovation process, constructive thinking patterns are very efficient and useful.

In another study, Hunter and Cushenbery (2011) revealed some aspects of self-leadership (i.e., behavioural strategies, natural reward strategies, and constructive thinking patterns) that can enhance the efficiency of entrepreneurs' innovation, which in turn, has a positive effect on the development and efficiency of a business. Elsewhere, Ort and Duin (2008) showed that the success of the entrepreneurs' innovation process depends on the thinking, focus, and energy that entrepreneurs can put into use in an organization or a company so that it becomes a modern and

innovative one. Basically, the heroes in an organization or a company use self-leadership strategies to innovate.

Sweetman et al., (2010) in an article entitled "Relationship between positive psychological capital and creative performance" (Canadian Journal of Administrative Sciences,) showed the positive relationship between self-leadership and innovation that has roots in some concepts as independence, personal will, and determination. They also revealed that independence as one of the key aspects of innovation has a relationship with personal determination and inner motivation. Personal determination is one of the major aspects of natural reward strategies in self-leadership. Other researchers (e.g., Manz. and Sims; 2001; Feser, 2012) have also reported the relationship between self-leadership, behavioral strategies, constructive thinking and entrepreneurs 'innovation.

Based on the aforementioned discussed literature, the research conceptual framework is shown in the figure 1.

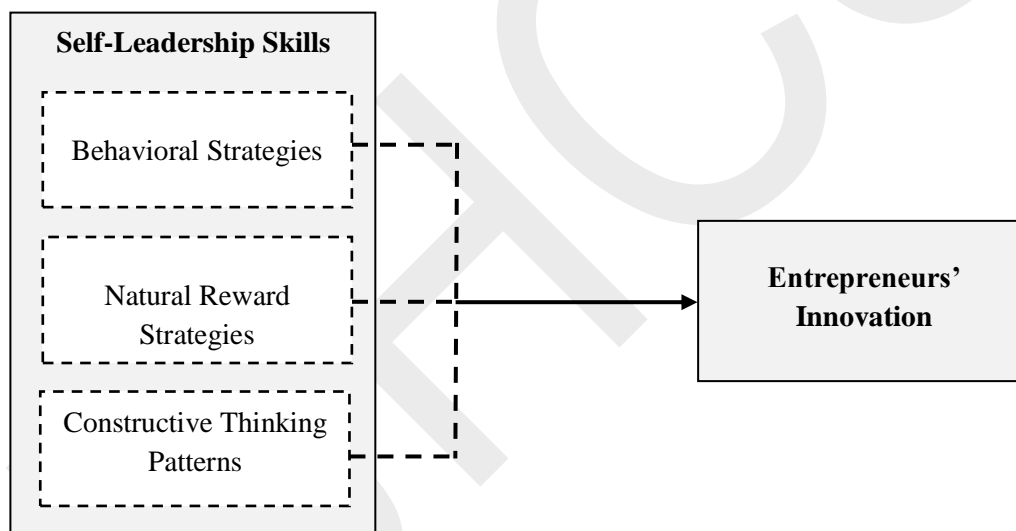


Figure 1: The Research Conceptual Framework

Based on the research conceptual framework of this study, the research hypotheses in Table 1 have been expressed.

Table 1: The Research Hypotheses

Index	Hypothesis
H1	There is positive relationship between self-leadership skills and entrepreneurs' innovation.
H2	There is positive relationship between behavioral strategies and entrepreneurs' innovation.
H3	There is positive relationship between natural reward strategies and entrepreneurs' innovation.
H4	There is positive relationship between constructive thinking patterns and entrepreneurs' innovation.

Research Methodology

The purpose of this study is considered as an empirical one in terms of objective and its research methodology is descriptive-correlative type. The population includes 380 entrepreneurs in the in textile industry throughout Iran. Among those individuals, 191 entrepreneurs were selected to be studied using Cochran formula (Formula 1) and through the stratified random sampling method.

$$n = \frac{N \times Z \alpha^2 / 2 \times P(1-P)}{\varepsilon^2 (N-1) + Z \alpha^2 / 2 \times P(1-P)} = \frac{380 \times 1.96^2 \times 0.5 \times 0.5}{0.05^2 \times (380-1) + 1.96^2 \times 0.5 \times 0.5} = 191$$

Formula 1: Cochran Formula

In the present study, we used Manz. (2011) questionnaire on self-leadership skills and entrepreneurs' innovation and Latham & Frayne (2008) questionnaire on behavioral strategies, natural reward strategies, and constructive thinking patterns to collect data. Structural equation modeling (SEM) was applied for data analysis. Measuring reliability was done through two criteria of Cronbach's Alpha and Composite reliability (CR). Validity was also measured by Convergent and Divergent Validity. Convergent validity controls if the correlation between a construct and the questions of that construct is adequate (Hulland, 1999), Divergent validity compares the correlation between a construct and the questions of that construct with the correlation of that construct with other constructs (Hulland, 1999). Table 2 shows these amounts.

Table (2): Cronbach’s Alpha, Composite Reliability, Convergent Validity, and Divergent Validity

Measure	Alpha’s Cronbach	Composite Reliability	Convergent Validity	Divergent Validity	Scale
Criterion	Above 0.7	Above 0.7	Above 0.4	-	-
Self-Leadership Skills	0.82	0.811	0.40	0.804	Interval
Behavioral Strategies	0.72	0.806	0.41	0.823	Interval
Natural Reward Strategies	0.71	0.817	0.48	0.866	Interval
Constructive Thinking Patterns	0.77	0.721	0.57	0.819	Interval
Entrepreneurs’ Innovation	0.79	0.833	0.51	0.733	Interval

The Results and Findings

The results in the descriptive statistics part of the study show that 82 percent of the participants are male and 34 percent are female. In terms of age, most of the participants are in the range of 31-40. Regarding education, most participants (%52) hold the bachelor degree. Descriptive statistics for the samples are shown in Table 2.

Table (2): Descriptive Statistics

Variable	Levels	Abundance	Variable	Levels	Abundance
Sex	Man	156	Type of Product	Carpet	78
	Woman	34		Cloth	74
Age	20 to 30 years	65		Rug	39
	31 to 40 yeas	80	Education	Bachelor	101
	Over 41	46		Master	72
				Ph.D	8

The Structural Equation Modeling (SEM) approach is particularly suitable for measuring and estimating a theoretical model with linear relations between variables, which may be either observable or directly unobservable. SEM enables an explicit modeling of the measurement error for the observable variables and avoids potential bias, thus allowing constructing unobservable variables. In the current study, Partial Least Square (PLS) variance-based SEM has been utilized to analyze the epistemic view of data. First, none of the independent and dependent variables was absolutely measureable. Further, rather than aiming at producing the covariance matrix as close as possible to the theoretical model, the aim has been set as analyzing the degree of cooperative entrepreneurship. In such a situation, the variance-based PLS approach seems suitable (Henseler

& Chin, 2010).). The analysis and interpretation of data process covariance structure analysis and structural equation modeling software with Smart PLS 3 software is what followed

The Measurement Model

The proposed conceptual model in the current study has been developed based on the theoretical foundations and it has been analyzed by SEM. Figure 2 shows the measurement model in the state of estimation of standardized coefficients. Loading factor and path coefficients can be estimated according to the model in the state of estimation of standardized coefficients. Based on the loading factor, the index of the highest loading factor has the greater proportion in the measurement of the related variable and the index of the lower loading factor has the smaller proportion. Determination index also has been shown in this model.

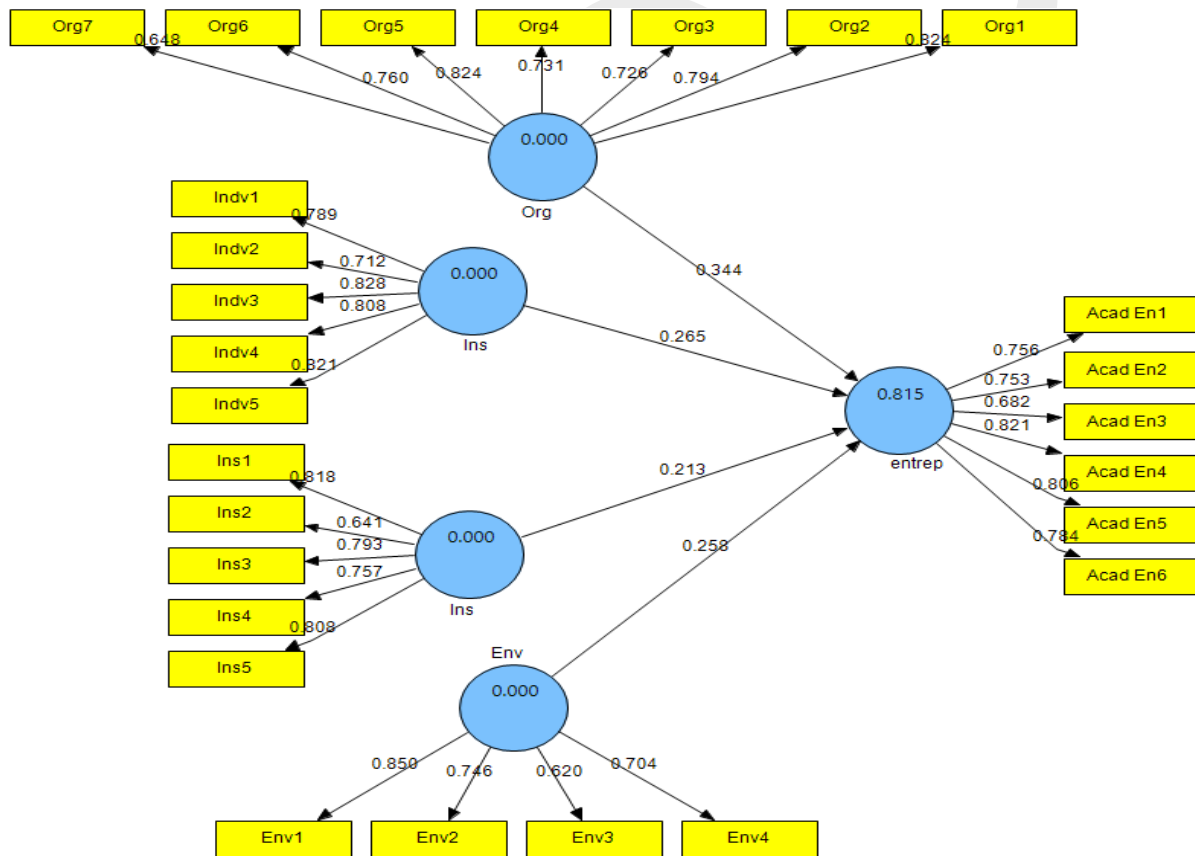


Figure (2): Model of the Estimated Coefficients

Figure 3, also, shows the research model in a significant state of coefficients (t-value). This model, in fact, tests all the measurement equations (loading factor) and the path coefficients using T statistics.

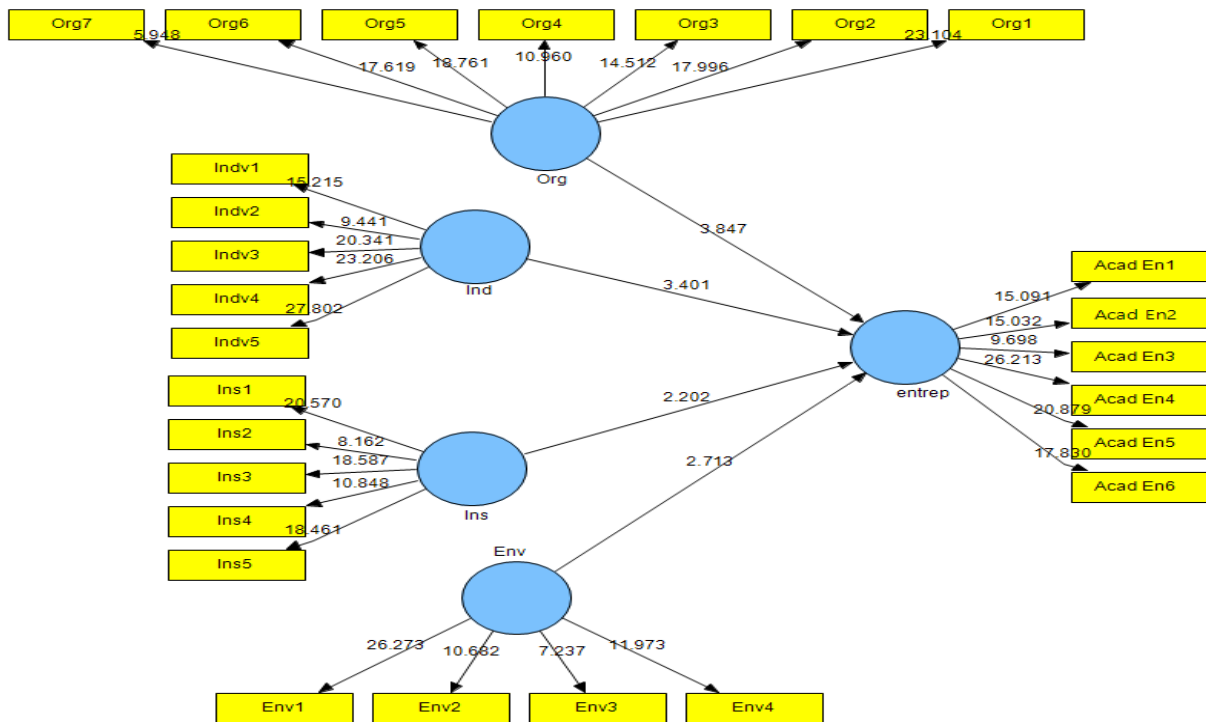


Figure (3): The Research Model in the Significant State of the Path Coefficients

Based on the results obtained by figure 3 and 4, a significant weight in the confidence level of 99% for three dimensions is established: self-leadership skills, behavioral strategies, natural reward strategies, constructive thinking patterns, and entrepreneurs' innovation (T statistics out of the intervals of 2.58 to -2.58) and institutional dimension. The confidence level was of 95% significant (t statistics out of the interval of 1.96 to -1.96) and could have a significant loading factor. To check the reliability of the measurement model and reliability Item evaluation have been used from two ways as follows:

i) Cronbach Alpha

Cronbach alpha is considered as classic criteria for evaluation and appropriate measures for evaluating the internal in the measurement model. This measure shows the correlation between the structure and its related indicators. Higher values of 0.7 markers would be acceptable reliability (Henseler & Chin, 2010). As can be seen in table 3 Cronbach alpha values are greater than 0.7 for model structures and models of measurement have required reliability.

ii) Combine Reliability (CR)

Smart PLS software uses more modern standard called combined reliability (Fornell & Larcker, 1981). The reliability of structures calculated not only as an absolute but also according to their structural correlation with each other.

If the value for CR is greater than 0.7 for each structure, it has shown suitable reliability for measurement model (Henseler & Chin, 2010).). As it is seen in Table 3 CR structures values are above 0.7 and reliability of measure models is approved.

Table 3: AVE, Composite Reliability, and Cronbach's Alpha

Characteristics	AVE	Composite Reliability	Cronbach's Alpha
Self-Leadership Skills	0.625444	0.810344	0.805551
Behavioral Strategies	0.501789	0.809570	0.815478
Natural Reward Strategies	0.642293	0.828331	0.843507
Constructive Thinking Patterns	0.508724	0.855547	0.895482
Entrepreneurs' Innovation	0.637301	0.804458	0.807265

iii) The Narrative Validity of Convergence

The second measure, which is used to measure model in PLS is a measure of the average variance extracted (AVE). It shows the level of correlation of a structure with its indexes. AVE value is accepted above 0.5 (Henseler & Chin, 2010). As it shows in table 3, AVE is greater than 0.5 for all model structures and reliability of model is verified for measurements.

iv) Cross-Loading Method

All questions are in endogenous and exogenous latent constructs. Factor load shares more with its own structure compared to other structures which suggests divergent narrative that is suitable for the research model (Hulland, 1999).

v) Method of Fornell and Larcker

As shown in Table 4, AVE root variable for entrepreneurs' innovation is greater than amount of correlation between the indexes and other structures. As a result, this subject is evidence of divergent narrative suitable for this variable model. With little indulgence, this thread is true about variable entrepreneurship education. Hence divergent narrative of the model is confirmed.

Table (4): Fornell and Larcker Test Results

	Self-Leadership Skills	Behavioral Strategies	Natural Reward Strategies	Constructive Thinking Patterns*	Entrepreneurs' Innovation *
Self-Leadership Skills	0.712445	-	-	-	-
Behavioral Strategies	0.458348	0.802832	-	-	-
Natural Reward Strategies	0.413457	0.862811	0.700379	-	-
Constructive Thinking Patterns*	0.665311	0.767416	0.711258	0.655887	-
Entrepreneurs' Innovation *	0.657132	0.708451	0.708059	0.906903	0.500271

Hypotheses Testing

The significance level in Smart PLS 3 software is equal or more than 1.96, which shows that the hypotheses are significant. Research hypotheses would be supported if the score becomes above 1.96. In addition, according to Henseler & Chin (2010), the coefficient must become equal or above 0.30 which is the ideal score for the indicator. Based on standards, the hypotheses test results and PLS hypothesized models are presented below (Table 5).

Table 5: Direct Effects, T-Statistics, and the Results of Research Hypothesis

Hypotheses	Relationship	Sig Level (t)	Coefficient (B)	Results
Hypothesis 1	There is positive relationship between self-leadership skills and entrepreneurs' innovation.	2.23	0.47	Significant and Positive Effect
Hypothesis 2	There is positive relationship between behavioral strategies and entrepreneurs' innovation.	3.8	0.21	Significant and Positive Effect
Hypothesis 3	There is positive relationship between natural reward strategies and entrepreneurs' innovation.	2.1	0.27	Significant and Positive Effect
Hypothesis 4	There is positive relationship between constructive thinking patterns and entrepreneurs' innovation.	2.65	0.28	Significant and Positive Effect

General Model Validation

To address the measurement of the model, Smart PLS 3 software, calculates loads of items and the variance of residuals. In the structural level, it also, calculates the path coefficients, correlation between latent variables, explained variance, and the average variance extracted (AVE) of the latent variables. The t statistics is calculated using the cross-cutting method or personal accomplishment (PA). The proper model fitting is achieved when the path coefficient is significant, the explained variance is acceptable, and internal consistency is higher than 0.05 for each construct. Acceptable values of loading factor also show the proper model fitting (Table 6). Moreover, goodness of fit testing (GOF) is the index for checking the model fitting to predict endogenous variables. Three values, 0.01, 0.25, 0.36 are identified as the weak, medium, and strong values of GOF (Formula 2), respectively.

Table 6. Common Values

Dimensions	Organizational	Individual	Institutional	Environmental	Entrepreneurial University	Mean
Commonalities	0.7381	0.6983	0.6871	0.6399	0.5902	0.67

$$Gof = \sqrt{\text{communalities} \times R^2} = \sqrt{0.670 \times 0.815} = 0.739$$

Formula (2): GOF Index

Since the calculated values of GOF are greater than 0.36, it shows the proper model fitting, also all the path coefficients are significant and explained variance is acceptable and internal consistency of constructs is higher than 0.05.

Discussion and Conclusion

The present study proposed and tested a model that links three strategies of self-leadership and entrepreneurs’ innovation. The findings of this study show that self-leadership and its strategies (i.e., behavioral strategies, natural reward strategies, and constructive thinking patterns) promote entrepreneurs’ innovation. The literature suggests that entrepreneurs could be trained to improve their self-leadership skills and thereby improve their innovative attributes. Therefore, businesses need to invest efforts in developing behavioral strategies, natural reward strategies, and constructive thinking patterns to improve the overall functioning of their innovative. The finding of the current study is crucial because entrepreneurs’ innovation in SMEs is the basis for competitive advantages in current competitive markets. The results of study are consistent with previous studies that mainly focused on such attributes (e.g., Feser (2012); Janssen (2004); Houghton et al.(2013). Enhancing learning and awareness at all levels to affect change and

innovation requires encouraging entrepreneurs to release their full creative potential in the businesses (Shipton et al.,2005).

The central emerging point in this study is that the new business innovation environment requires entrepreneurs to develop their self-leadership awareness and competencies. It is not enough to have just a selected few skills that lead innovation with natural tendencies and high perceptions of their innovation capabilities. Everyone has the ability to communicate ideas externally and receive ideas from external sources toward innovative projects. Entrepreneurs should know how to apply their self-leadership skills to transform those ideas into innovation success. In addition, future research may consider whether self-efficacy beliefs would be more likely to influence self-leadership strategies, whereas general self-efficacy beliefs may be more likely to influence the use of natural reward and constructive self-leadership strategies.

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