

Analysis of Agricultural Student's Rural Entrepreneurial Intentions Based on the Extended Theory of Planned Behavior

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Abstract

Purpose- Since the development of entrepreneurial activities in rural areas reduces many initial costs, and because the agricultural production is centered in rural areas, agricultural graduates can make closer and easier relationships with beneficiaries. Therefore, the current research was conducted aimed at analyzing the rural entrepreneurial intentions of agricultural students of Hamadan University based on the extended theory of planned behavior.

Design/methodology/implications- The population of the study were all senior agricultural students of Bu Ali Sina University, Hamadan (N = 420). The simple random sampling method and Krejcie and Morgan table were used respectively to sample the research population and to determine the sample size (n = 200). A researcher-made questionnaire was used to collect data. The face and content validity of the questionnaire was confirmed by a panel of experts. To verify the reliability of the research tool, a pilot study and the calculation of the ordinal theta coefficient were also conducted.

Findings- The results of the confirmatory factor analysis showed that the indicators used to measure the latent attributes studied in this research are consistent with the factor structure and the theoretical basis of the research. The results showed that three main components of TPB (attitude, perceived behavioral control and social norms) had a positive and significant effect on rural entrepreneurial intentions of students, which predicts 51% of the variance of rural entrepreneurial intentions. In addition, adding six entrepreneurial skills to the model, the predictive power of TPB increased by 19%.

Research limitations/implications- One of the most important limitations was the accurate assessment of the entrepreneurial skills.

Practical implications- Considering the interaction of motivational and skill components, it can be inferred that students' confidence in their entrepreneurial abilities and skills in order to launch and manage a new business gives them the power to have creative intentions and decisions to start a new activity.

Originality/value- This study contributed to integrate skills and behavioral components for improving the rural entrepreneurial intentions of agricultural students. The results contribute to enriching the literature on rural entrepreneurial intention. This study documents the entrepreneurial intention and skills as important precursors to students' decision to create new agricultural business.

Keywords- Rural entrepreneurial intentions, Theory of planned behavior, Agricultural students, Entrepreneurship education.

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1. Introduction

Currently, one of the most important challenges in Iran is the issue of the employment of university graduates and the creation of job opportunities for this group.

This challenge is more evident among graduates of agricultural fields. This is while the lack of job opportunities and as a consequence the unemployment is one of the concerns of agricultural graduates (Zarifian et al., 2014; Aliabadi et al., 2017; Khazaei Kohper et al., 2021). Also, the estimates show that the agricultural labor market's need is at a maximum of 110,000 graduates educated in agricultural fields. While every year about 230,000 students are graduated from agricultural discipline in the country's universities, but according to this, every year, about 25 to 52% of the graduates of this sector remain unemployed (Vatankhah and Rezaei Moghadam, 2014). Meanwhile, various researches have confirmed that entrepreneurship can improve innovation, create job opportunities, increase productivity and generally cause comprehensive development in any country. This has caused countries to use entrepreneurship as a tool to deal with unemployment (Aliabadi et al., 2016; Mousivand et al., 2016) and considered it as a national priority by governments around the world (Fairlie and Holleran, 2012; Amofah & Saladrignes, 2022). Village is one of the areas where agricultural graduates can create and develop their innovative business activities. As the development of entrepreneurial activities in rural areas reduces many initial costs, and because the center of agricultural production is located in rural areas, agricultural graduates can establish closer and easier relationships with beneficiaries. On the other hand, 96% of water and soil resources are located in rural areas, and the existence of this potential can lead agricultural graduates to these areas to create entrepreneurial businesses. The transition of entrepreneurial businesses by agricultural graduates to rural areas can be considered as a very important step in rural development. From an alternative perspective, to overcome the economic-social issues facing rural communities, the entrepreneurial approach has been considered as one of the important strategies of rural development. Therefore, it can be argued that promoting entrepreneurship by university graduates in rural areas is a new approach in development theories for empowering graduates and building capacity in rural areas in order to turn the current life

pattern into a desirable and decent human pattern, reduce the urban-rural gap, create economic, social, environmental and institutional equality and at the same time it is regarded as an important tool to achieve sustainable development.

The entrepreneurial process begins when a person decides to launch a new business. Therefore, in order to promote and develop entrepreneurship better, it is necessary to know why and how a group of people decide to launch a business and some don't. Universities are social institutions which can be the predisposing factor to develop entrepreneurs. Through entrepreneurship promotion and entrepreneurship education, universities can encourage students to develop entrepreneurial behavior (Cui & Bell, 2022; Ahmadi et al., 2013; Arasti and Saeed Benadaki, 2012; Mardanshahi et al., 2013; Mousivand et al., 2017; Mohammadi et al., 2019). This is while, from the students' point of view, universities do not encourage new ideas, they do not acquire entrepreneurial skills in the university, and the socio-economic conditions are not favorable to launch a business (Jaafari Moghadam et al., 2016; Karimi & Ataei, 2022a). From another point of view, researchers found that one of the most important challenges of entrepreneurship development is the lack of entrepreneurial skills and lack of information (Naseri et al., 2021; Parvin et al., 2012; Ataei et al., 2020a). This is while the mismatch of the educational content with the requirements of the labor market, the lack of attention to entrepreneurship education and the weak entrepreneurial skills of students and graduates have been the main reasons for the growth of unemployment among graduates (Kheiri et al., 2011; Ataei et al., 2020b). If there is no match between the educational content received and students' skills, a conflict will be created between students' attitudes and intentions to step into the entrepreneurship process. If graduates possess sufficient and varied entrepreneurial skills, their intentions to start entrepreneurial businesses will increase. In other words, entrepreneurial skills are one of the main infrastructures of entrepreneurial behavior. Because if graduates are not equipped with entrepreneurial skills, their ability to create an entrepreneurial business will decrease. On the other hand, based on cognitive models, one of the most important predictors of people's entrepreneurial behavior is their entrepreneurial intention. Thus, Kruger et al. (2000) have stated that entrepreneurship is a deliberate process in which people, with their cognition and perception, plan to perform the behavior

of identifying opportunities, creating a business, or developing it. Entrepreneurial intention refers to a state of mind that directs and guides one's activities towards business development and execution (Bird, 1998; Fauchald et al., 2022). In other words, entrepreneurial intention is a conscious state of mind that occurs before the action and guides the intention to start a business as an objective (Ajzen, 1991). Many researches have pointed that entrepreneurial intention is one of the main infrastructures of entrepreneurial behavior (Kautonen et al., 2015; Mat et al., 2015; Espíritu-Olmos and Sastre-Castillo, 2015; Ismail et al., 2015; Do and Dadvari, 2017; Barba-Sanchez and Atienza-Sahoquillo, 2018). Therefore, identifying the psychological characteristics and necessary skills that promote the entrepreneurial intention of people, can create a suitable background for the emergence of entrepreneurial behaviors.

Accordingly, the present research was conducted aiming to explore the rural entrepreneurial intention of agricultural students of Hamadan University based on the psychological and skilling characteristics of the students. This research can create a deeper insight into the entrepreneurial characteristics of students and the relationships between cognitive-social, skill elements and rural entrepreneurial intention. Also, planners and educators can use its findings to formulate effective educational strategies for the development and promotion of entrepreneurship in the agricultural higher education system, and finally, it will greatly help the employment of graduates in rural areas.

2. Research Theoretical Literature

One of the most common and comprehensive behavioral models used in behavioral research is the theory of planned behavior (TPB). This theory was presented by Ajzen (1991). The TPB has been used to explain and predict intention and behavior in various research areas such as medical sciences, psychology, agriculture, and marketing (Bergevoet et al., 2004; Schnusenberget al., 2012; Jiang et al., 2013; Peyman et al., 2015; Muradhaseli et al., 2017; Zeweld et al., 2017; Ataei et al., 2021; Yaghoubi Farani et al., 2021; Karimi & Ataei, 2022b; Safi Sis et al., (2022). The effectiveness and capability of this model in predicting entrepreneurial intention and behavior has also been proven in various studies (Obschonka et al., 2010; Iakulova et al., 2011, Karimi et al., 2014, Schlaegel & Koenig, 2014; Malebana, 2014; Lortie & Castogiovanni, 2015). According to TPB, the most important determinant of entrepreneurial behavior is

the entrepreneurial intention. Entrepreneurial intention is also influenced by three components: 1) subjective norm, that is the social pressure perceived by the person whether to perform the behavior or not, 2) attitude towards the behavior, that is a person's positive or negative evaluation of the behavior, 3) Perceived behavioral control, that is a person's perception of the degree of difficulty or ease of behavior and the extent of success in performing or not performing that behavior (Linan & Chen, 2009).

A review of literature shows that the entrepreneurial intention of students in different universities varies significantly. So, in some cases students have a weak or medium entrepreneurial intention (Maheshwari & Kha, 2022; Karimi et al., 2014; Ghiasi, 2015; Karimi, 2015; Rezaei et al., 2015; Shakiba et al., 2015; Hosseini and Khosravi Lagab, 2016). The results of the research by Ghanati et al., (2016) and Martins et al., (2022) have specified that the perceived behavioral control had a greater effect on the entrepreneurial intention of students. In his research, Karimi (2015 & 2016) concluded that the attitude towards entrepreneurship and the perceived behavioral control have a significant relationship with the entrepreneurial intention of students. Seif et al. (2013) considered two variables of subjective & social norms and entrepreneurial experience as factors influencing the entrepreneurial intention of medical students. Karimi et al. (2014) also believe that subjective norms and dynamic personality have an indirect and positive effect on students' entrepreneurial intention through behavioral control and entrepreneurial attitude. Ghiasi (2015) supported the mediating role of entrepreneurial attitude in the relationship between belief in self-efficacy and entrepreneurial intention. Rezaei et al. (2016) also considered two variables of perceived behavioral control and subjective norms to be influential on entrepreneurial intention. Other studies have also pointed out the strong predictive feature of entrepreneurial intention by the elements of the TPB (Nwankwo et al., 2012; Ruizalba Robledo et al., 2015).

In their research, used TPB to predict entrepreneurial intention among students from developing and developed countries. Their findings indicated that students from developing countries had a stronger entrepreneurial intention compared to students from developed countries. Also, students from developing countries scored higher in factors affecting entrepreneurial intention (attitudes, subjective norms

and perceived behavioral control) compared to students from developed countries. [Moriano et al \(2012\)](#) conducted a cross-cultural research using TPB in six different countries, including Iran, the result of which showed a direct relationship between attitude and entrepreneurial intention. [Fini et al. \(2012\)](#) have confirmed in their research that the variable of entrepreneurial attitude can create a significant relationship with entrepreneurial intention along with other variables related to entrepreneurship such as personal skills and entrepreneurial skills. The results of the research by [Tshikovhi and Shambare \(2015\)](#) on the entrepreneurial intention of students in South African universities and the factors affecting it showed that there was a positive and significant relationship between personal attitudes and the level of learning and entrepreneurial knowledge with the intention of students to become entrepreneurs. [Liana et al. \(2011\)](#) have also stated that the variables of attitude towards entrepreneurial behaviors, tendency to learn, education and perception towards controlling entrepreneurial behavior are also among the variables affecting entrepreneurial intention. [Ambad and Damit \(2016\)](#) in their study on students concluded that individual attitude, perceived behavioral control and perceived relative support are predictors of students' entrepreneurial intention.

Based on two types of entrepreneurial approaches (psychological approach and behavioral approach), the phenomenon of entrepreneurship is influenced by individual attributes and activities of the entrepreneur. In the psychological approach, the inherent characteristics of people determine the process of creating an entrepreneurial business. But in the behavioral approach, the phenomenon of entrepreneurship is considered as a process that is created in an innovative and entrepreneurial business. Nevertheless, the point of similarity of both approaches is the entrepreneurial skills of people. In other words, in both psychological and behavioral approaches, entrepreneurial skills are the basics of business creation ([Wortman, 1990](#)). It can be argued that for a person to become an entrepreneur, in addition to developing psychological characteristics, acquiring entrepreneurial skills is also necessary and is considered as an important factor in the emergence and success of a business ([Ladzani and Van Vuuren, 2002](#); [Paliwal et al., 2022](#)). Some of these skills include knowledge of business plan, communication, acquaintance with legal and commercial rules and regulations, planning, team building and marketing

([Sadeghi and Malkinia, 2013](#); [Hosseininia et al., 2017](#); [Shahiwala, 2017](#); [Din et al., 2016](#)). The knowledge of writing a good business plan reveals the professionalism of the entrepreneur and his acquaintance with the market. Therefore, having enough knowledge to develop a business plan is an important skill. Team building is one of the skills that entrepreneurs must master. A dynamic and synergistic team is built based on the existence of a common ideal and an atmosphere of trust ([Feizbakhsh and Abdullahi, 2009](#)). One factor which always slows down the process of creating a business is the strict and restrictive laws and regulations. As a result, skills such as entrepreneurs acquaintance with the legal issues of initiation and managing businesses, tax laws, obtaining facilities, export laws, etc. are essential. Marketing is considered as an important part of entrepreneurial skills. Entrepreneurs should have the ability to evaluate the competitive environment and to find the increasing needs of the target market ([Hiserich and Peters, 2019](#)). The ability to create a network and use calls and communications is another communicative skill of entrepreneurs. Therefore, the ability to communicate with customers, social interactions, and using different sources and information channels are among the subsets of entrepreneurs' communicative skills. Entrepreneurs always have great ideas which require careful planning to achieve success. Effective planning is the basis of running a business. Effective programs are prepared based on available resources and goals. The planning process includes choosing a special strategy among the options ([Kahan, 2013](#)).

Most of the research conducted using TPB focused on the effects of personality and psychological factors on entrepreneurial behavior and intention, while the important role of entrepreneurial skills has often been neglected. This is despite the fact that entrepreneurial skills can underline the emergence of intention and as a result, the entrepreneurial behavior among university graduates. Accordingly, six knowledge skills of business plan, communication, acquaintance with legal and commercial rules and regulations, planning, team building and marketing were considered. An appropriate way to combine both perspectives is to study two groups of psychological and skill variables in a comprehensive model. Therefore, the main goal of the current research is to examine the relationship between these factors with the entrepreneurial intention of students by incorporating entrepreneurial skills within the theory

of planned behavior in two parts of the original model and the extended model in order to gain a deeper understanding of the process of creating a new business and the rate of predictability of the students'

entrepreneurship intentions in two stages. Based on this, the theoretical framework of the research was developed in [Figure \(1\)](#).

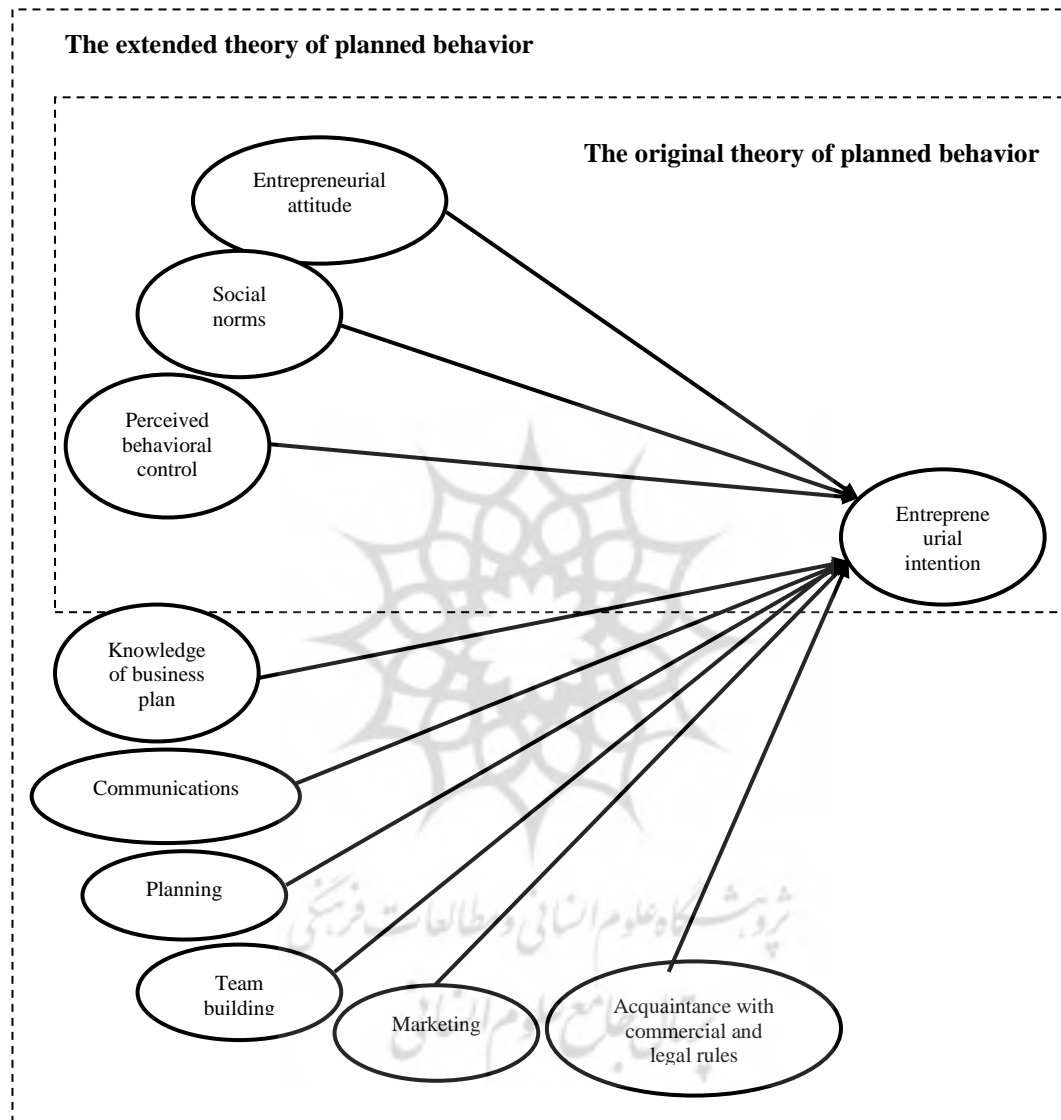


Figure 1. theoretical model of the research

3. Research Methodology

This is an applied research. Because its results are useful for planners and officials of higher education and policy makers of rural society. In such a way that it makes officials aware of the level of entrepreneurial skills of students and their intentions for innovative and entrepreneurial activities in rural areas, as well as the factors affecting it. Also, rural policy makers, knowing the entrepreneurial skill-psychological condition

of the graduates, can provide them with the necessary background for the development of entrepreneurial activities. This research is retrospective temporally; because the data collected is related to the events that occurred in the past. It has been quantitative paradigmatically. Also, the intended research is non-experimental in terms of controlling variables, "causal-relational" and "descriptive-correlational" in terms of statistical operations. So, to collect information, a survey technique was used.

The understudied population in this survey was all senior students of the faculty of Agriculture from Bu Ali Sina University in Hamedan. According to the statistics obtained from Bu Ali Sina University, the total number of senior students in agriculture was 420, which constituted the statistical population of the research. A simple random sampling method was used to sample the research population. To determine the sample size, [Krejcie and Morgan's table \(1970\)](#) was used. According to this [table](#) and the statistical population, the sample size of 200 students was estimated.

A researcher-made questionnaire was used to collect data related to the research sample. The questionnaire designed in this research included elements of the theory of planned behavior, entrepreneurial skills and demographic characteristics of students. In the first part of the questionnaire, to measure the entrepreneurial skills of students (knowledge of business plan, communication, team building, acquaintance with

legal and commercial laws and regulations, marketing and planning) a five-point Likert scale (very low = 1 to very high = 5) and to measure the elements of TPB (entrepreneurial attitude, social norms, perceived behavioral control and rural entrepreneurial intention) a five-point Likert scale (completely disagree = 1 to completely agree = 5) was used.

The face and content validity of the questionnaire was confirmed by a panel of entrepreneurship experts. To verify the reliability of the research tool, a pilot study was conducted and 30 questionnaires were completed by students outside the statistical population and the ordinal theta coefficient was calculated. [Table \(1\)](#) shows the ordinal theta coefficient values of the research variables. After data was collected, the information obtained by completing the questionnaires was analyzed using SPSS23 and AMOS23 statistical software. Also, structural equation modeling was used to analyze students' rural entrepreneurial intention.

Table 1. Ordinal theta values of research variables

No.	Variables	Number of items	Ordinal theta
1	knowledge of business plan	5	0.81
2	Communication	5	0.79
3	Acquaintance with legal and commercial laws and regulations	3	0.86
4	Planning	4	0.73
5	Team building	5	0.85
6	Marketing	5	0.84
7	Entrepreneurial attitude	5	0.66
8	Social norms	3	0.72
9	Perceived behavioral control	5	0.62
10	Rural entrepreneurial intention	10	0.85

4. Research findings

4.1. Demographic characteristics

The analysis of demographic characteristics of the students showed that 50.5% of them were women and 49.5% were men. In terms of age, the majority of students were between 19 to 23 (53.5%) and 24 to 29 (36%), and 81% of agricultural students were studying at the bachelor's level. The GPA of most students was between 19-20 (32%) and 14-15 (29.5%). In terms of the employment variable, 22.5% of the students were employed, and 82% of their jobs were not related to their field of study. Also, only 23% of students had participated in entrepreneurship courses.

4.2. Examining the relationship between elements of TPB and entrepreneurial skills

To examine the relationship between the elements of TPB and students' entrepreneurial skills, the Spearman's correlation was used. The results of this test showed that the components of entrepreneurial attitude, perceived behavioral control, social norms and entrepreneurial skills of agricultural students had a significant relationship (at 0.01 level) with the entrepreneurial intention of rural students of the faculty of Agriculture ([Table 2](#)). This finding is consistent with the results of the research by [Seif et al. \(2013\)](#), [Karimi \(2015 and 2016\)](#), [Ghanati et al. \(2016\)](#), [Liana et al. \(2011\)](#), [Ambad and Dumit \(2016\)](#). In their studies, they have confirmed the significant

relationship between the components of TPB and rural entrepreneurial intention.

X1= knowledge of business plan

x2= communication

x3= acquaintance with legal and commercial laws and regulations

X4= planning

x5= team building

x6= marketing

x7= entrepreneurial attitude

X8=social norms

x9=perceived behavioral control

x10=rural entrepreneurial intention

Table 2. Correlation between the elements of TPB and entrepreneurial skills

Research variables	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀
X1	1									
X2	0.66**	1								
X3	0.65**	0.64**	1							
X4	0.45**	0.44*	0.43**	1						
X5	0.34**	0.38**	0.31**	0.33**	1					
X6	0.56**	0.63**	0.62**	0.40**	0.45**	1				
X7	0.20**	0.23**	0.18*	0.32**	0.22**	0.22**	1			
X8	0.14*	0.17*	0.19**	0.26**	0.23**	0.22**	0.40**	1		
X9	0.40**	0.38**	0.37**	0.32**	0.42**	0.43**	0.35**	0.37**	1	
X10	0.40**	0.49**	0.44**	0.46**	0.37**	0.50**	0.42**	0.33**	0.50**	1

4.3. Structural equation modeling of students' rural entrepreneurial intention

Estimation of the measurement model- In this research, the reliability and validity of the questionnaire was measured by the composite reliability method (CR) and the diagnostic validity was measured by determining the coefficient of the average variance extracted (AVE). The constructs with CR higher than 0.6 have acceptable reliability, and the closer this value is to one, the higher the reliability (Raykov, 1998). Also, constructs with AVE higher than 0.5 have acceptable validity (Iglesias, 2004). The findings showed that the CR value of all constructs was higher than 0.6 and the AVE value of most constructs was higher than 0.5. In other words, the research tool had acceptable reliability and validity.

To check the validity or reliability of the model, it was necessary to examine the extent and level of significance of the paths between each of the

latent variables with its corresponding indicators, for this purpose confirmatory factor analysis has been used to test this hypothesis that whether the indicators considered to introduce the construct or latent variables really represent them or not, and how accurately the selected indicators represent or fit the underlying variable. Since parameters with values higher than two are statistically significant (Bentler and Yuan, 1999), the obtained results indicate that the indicators used to measure the latent attributes studied in this research have an acceptable match with the factor structure and the theoretical basis of the research. Only the values of two indicators of the latent variables of attitude and perceived behavioral control were less than two, which were removed from the model. The trust or reliability of indicators can also be checked through the square of multiple correlations (R^2). R^2 values express the contribution of variance of each index determined by the corresponding latent variable (Table 3).

Table 3. Measurement coefficients, significance level of confirmatory factor analysis and validity and reliability of latent attributes

Latent variables	Observed variables	Standardized values	AVE	CR	t- value	R ²
Knowledge of business plan	b.p1	0.778	0.554	0.860	-	0.605
	b.p2	0.782			11.35	0.612
	b.p3	0.782			11.35	0.612
	b.p4	0.702			10.03	0.493
	b.p5	0.670			9.51	0.449
Communications	C1	0.727	0.517	0.839	-	0.529
	C2	0.716			9.36	0.513
	C3	0.519			6.82	0.270
	C4	0.701			9.17	0.491
	C5	0.886			6.37	0.749
Acquaintance with commercial and legal rules	R1	0.776	0.640	0.842	-	0.602
	R2	0.808			11.47	0.653
	R3	0.816			11.58	0.666
Planning	P1	0.627	0.521	0.809	-	0.393
	P2	0.886			7.37	0.749
	P3	0.619			6.63	0.383
	P4	0.724			6.51	0.364
Team building	T1	0.664	0.522	0.843	6.93	0.441
	T2	0.731			7.33	0.535
	T3	0.701			7.16	0.491
	T4	0.598			6.46	0.358
	T5	0.888			-	0.346
Marketing	M1	0.703	0.490	0.827	-	0.495
	M2	0.789			10.01	0.623
	M3	0.691			8.88	0.478
	M4	0.631			8.14	0.398
	M5	0.679			8.73	0.461
Entrepreneurial attitude	Att1	0.771	0.520	0.811	3.26	0.594
	Att2	0.751			3.26	0.565
	Att3	0.589			3.15	0.347
	Att4	Deleted			-	-
	Att5	0.760			-	0.577
Social norms	Norm1	0.674	0.500	0.745	7.83	0.454
	Norm2	0.578			7.02	0.334
	Norm3	0.845			-	0.714
Perceived behavioral control	Pbc1	0.694	0.501	0.797	-	0.482
	Pbc2	0.645			7.32	0.417
	Pbc3	0.866			6.08	0.749
	Pbc4	Deleted			-	-
	Pbc5	0.598			6.90	0.358
Rural entrepreneurial intention	int1	0.870	0.493	0.904	-	0.756
	int2	0.894			8.27	0.799
	int3	0.631			4.68	0.398
	int4	0.681			4.79	0.463
	int5	0.670			4.77	0.449
	int6	0.723			5.34	0.522
	int7	0.666			4.76	0.443
	int8	0.650			4.72	0.423
	int9	0.595			4.59	0.354
	int10	0.560			4.49	0.313

Structural model estimation- After estimating the measurement model, the second step is estimating the structural model of the research. To estimate the structural model, the significance of the path coefficients assumed in the research model is examined. Before calculating the coefficients of the path, first the fit indices of both the original and the extended model of the planned behavior were checked. In order to find out to what extent the models are compatible with

the used data, the fit of the entire model was evaluated and for this purpose, related fit indices were used. These indicators are presented in [table 4](#). Accordingly, most of the indicators reported for the original model and the extended model have acceptable values for the overall fit of the models. Therefore, it can be stated that in general, the original model and the extended model of the planned behavior are compatible with the data.

Table 4. structural model fit indices

Test	Recommended value	Original model	Extended model
Likelihood ratio Chi-square (χ^2)	Insignificant χ^2 ($p > 0.05$)	0.000	0.000
Normed chi-square (χ^2/df)	$\chi^2/df < 5$	1.69	1.68
Root Mean Square Residual	RMR < 0.05	0.073	0.055
Root Mean Squared Error	RMSEA < 0.08	0.059	0.059
Goodness-of-Fit Index	GFI > 0.90	0.896	0.901
Incremental Fit Index	IFI = Values close to 1	0.925	0.851
Comparative Fit Index	CFI > 0.90	0.922	0.846

Based on the structural model of TPB, three variables of entrepreneurial attitude, social norms and perceived behavioral control had a direct effect on rural entrepreneurial intention. The findings showed that the entrepreneurial attitude in both the original and extended planned behavior models had a positive and significant effect on the entrepreneurial intention of rural students ($\beta = 0.36$, $P < 0.01$ and $\beta = 0.33$, $P < 0.05$ respectively). Other researches ([Karimi, 2014](#) and [2016](#); [Ghiasi, 2015](#); [Roizalba Robledo et al., 2015](#)) also confirm this finding. In their research, they came to the conclusion that people's attitude is the determining factor in their intentions to perform a certain behavior. So that [Shaw et al. \(2015\)](#) introduced attitude as a necessary prerequisite for behavior change.

Social norms, as another variable, only in the original planned behavior theory had a positive and significant effect on rural entrepreneurial intention of students ($\beta = 0.25$, $P < 0.05$). This finding is in line with the research results of [Seif et al. \(2013\)](#), [Karimi et al. \(2014\)](#), [Dang et al. \(2014\)](#). In their research, they stated that the existing social norms in the society affect people's intention to initiate a new business. [Zhou et al. \(2016\)](#) also believe that social pressure enhances people's awareness and therefore strengthens their

intentions to fructify an activity. Also, [Burton \(2004\)](#) acknowledges that people do not initiate an activity independently of cultural and social influences.

The analysis of the structural part of the model revealed that the perceived behavioral control had a positive and significant effect on the entrepreneurial intention of rural students in both the original and developed behavioral models ($\beta = 0.34$, $P < 0.01$ and $\beta = 0.43$, $P < 0.05$ respectively). These results were consistent with the experimental findings of many studies such as [Rezaei et al. \(2016\)](#), [Liana et al. \(2011\)](#), [Ambad and Demit \(2016\)](#). They also came to the conclusion that perceived behavioral control can influence the entrepreneurial intention of people.

Also, the findings showed that the coefficient of determination (R^2) for the original model of TPB was 0.51. This means that 51% of the changes in the variable of rural entrepreneurial intention of agricultural college students are related to the three variables of entrepreneurial attitude, social norms and perceived behavioral control. In other words, it can be claimed that the elements of the original model of TPB can describe 51% of the variance of rural entrepreneurial intention. Other findings are presented in [figure \(2\)](#).

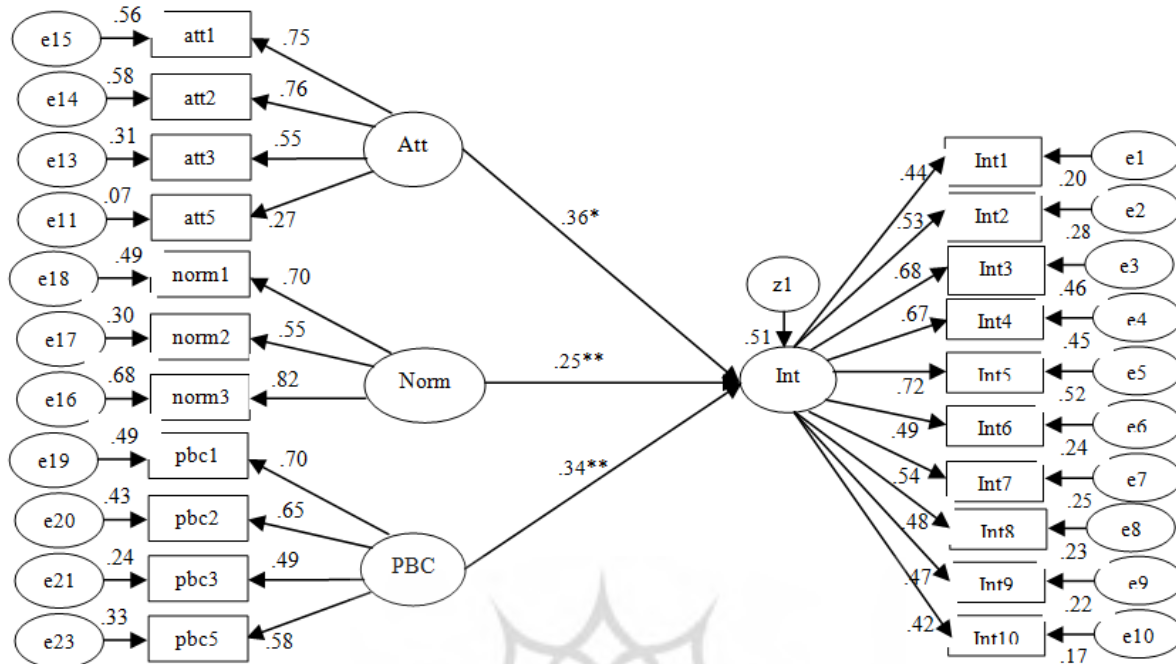


Figure 2. Structural model of the original TPB

According to figure (3), six entrepreneurial skills were included in the original TPB. The findings indicate that four skills of knowledge skills of business plan ($\beta=0.59, P < 0.05$), communication ($\beta=0.58, P < 0.05$), team building ($\beta=0.26, P < 0.05$) and planning ($\beta=0.49, P < 0.01$) had a positive and significant effect on rural entrepreneurial intention of students. Also, two skills of acquaintance with legal and commercial laws and regulations and marketing had no significant relationship with rural entrepreneurial intention. However, the variable of social norms in the extended TPB did not have a significant effect on the entrepreneurial intention of students, and the effect of two variables of attitude and perceived behavioral control has decreased. It can also be due to the interactions of new variables and components of TPB (other findings are presented in table (5)). Therefore, students with sufficient knowledge to develop a business plan, the ability to establish social relationships with people in the community and the market, the ability to form a strong work team, and finally, the ability to plan to create an innovative business, will have strong entrepreneurial intentions. This finding is in line with the results of Sadeghi and Malekinia (2013), Hosseininia et al. (2017), Ladzani and Van Vooren (2002), Din et al. (2016), Shahiwala (2017). They also emphasized the importance of entrepreneurial skills for the emergence of

entrepreneurial intention and behavior. Considering the lack of significant effect of two skills of acquaintance with legal and commercial laws and regulations and marketing on the entrepreneurial intention of the students, it can be argued that these two skills have less effect on the activation of the entrepreneurial intention and behavior of students and more attention should be paid to four skills of the knowledge of business plan, communication, team building and planning.

Also, the findings showed that the coefficient of determination (R^2) for the extended TPB was 0.70. This means that 71% of the changes in the variable of rural entrepreneurial intention of agricultural college students is dependent on nine variables of entrepreneurial attitude, social norms, perceived behavioral control, business plan knowledge, communication, acquaintance with rules and regulations, planning, team building and marketing. In other words, it can be argued that the elements of the original model of TPB can explain 70% of the variance of rural entrepreneurial intention. By comparing the value of the coefficient of determination in two original and extended models, it can be concluded that after adding six entrepreneurial skills to the original model of planned behavior, the predictive power of the model has increased by 19% (Figure 3).

Table 5. Estimation of the paths of structural models

Model	Path	Standardized coefficients	t-Value	Sig
Original model	Entrepreneurial attitude	0.360	2.53	0.000
	Social norms	0.256	2.72	0.011
	Perceived behavioural control	0.349	3.46	0.007
Extended model	Entrepreneurial attitude	-0.037	2.001	0.045
	Social norms	0.438	-0.334	0.738
	Perceived behavioural control	0.590	2.513	0.012
	Knowledge of business plan	0.580	2.406	0.016
	Communications	-0.105	2.427	0.015
	Acquaintance with commercial and legal rules	0.492	-0.676	0.499
	Planning	0.265	2.582	0.010
	Team building	0.124	2.081	0.037
	Marketing		0.850	0.395

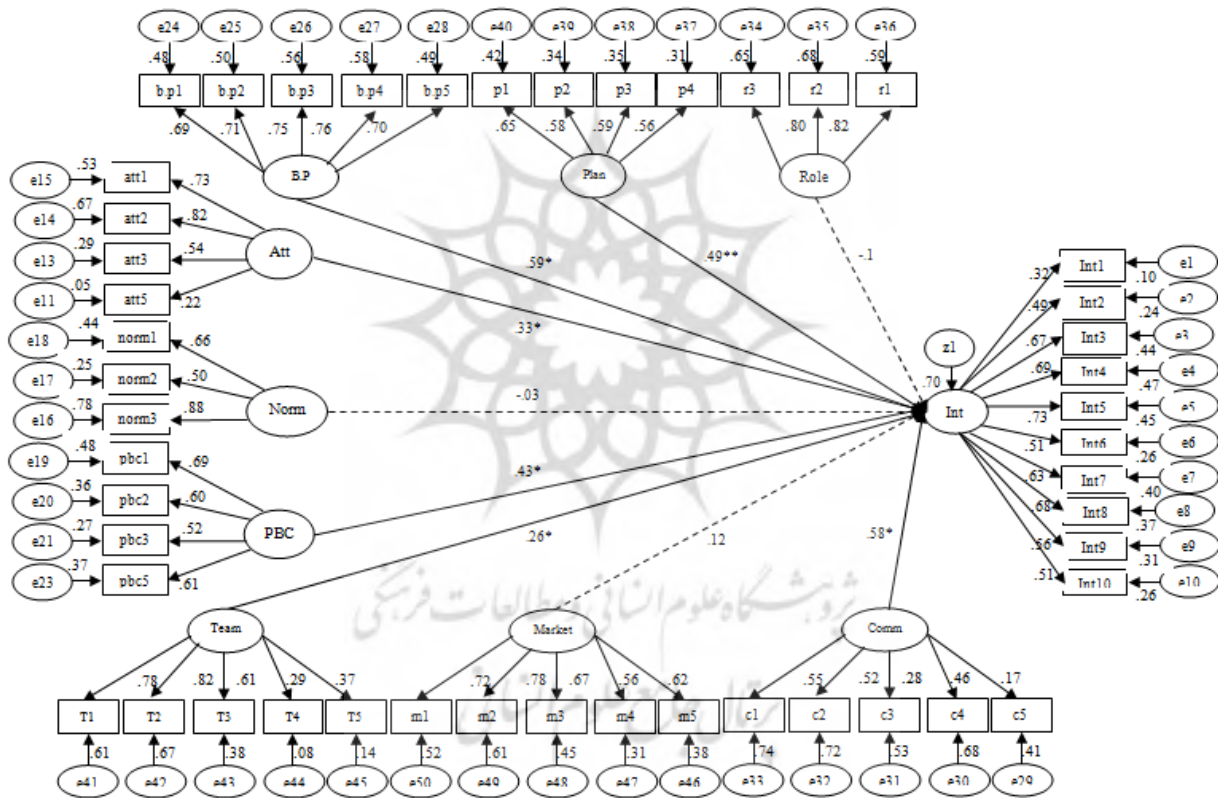


Figure3. structural model of extended TPB

5. Discussion and Conclusion

Considering the unemployment status of the young and educated workforce in the country, entrepreneurship can be a practical strategy to solve this problem. But, in order for people to turn to create and launch new businesses, they must first have the intention to do so. Accordingly, entrepreneurial intention can be a vital factor in the emergence of entrepreneurial behaviors. Therefore, this research was conducted with the aim of analyzing the rural

entrepreneurial intention of agricultural students of Bu Ali Sina University, Hamedan, based on TPB. The obtained results indicated that by adding six entrepreneurial skills to the original TPB, the predictive power of the entrepreneurial intention of rural students will increase significantly. In other words, in addition to components such as attitude, perceived behavior control and norms, entrepreneurial skills also play a very important role in predicting the entrepreneurial intention of students. In general, it can be concluded that the ability of students in

entrepreneurial skills (such as knowledge of business plan, communication, acquaintance with legal and commercial laws and regulations, planning, team building and marketing) will create a strong sense of self-confidence in them to take risks and of course, their intentions to initiate a new business in rural areas will improved. On the other hand, subjective evaluations (in positive and negative views) that students have about initiating a new business can also affect their entrepreneurial intentions. In other words, if their subjective attitude towards doing an activity is positive, the intention of entrepreneurial behavior will strengthened; but the existence of a negative attitude will be a big obstacle for the formation of rural entrepreneurial intention. Also, students' understanding of the level of difficulty or ease of starting a new business and predicting their success in doing that activity or not can change their entrepreneurial intentions. Given the interaction of motivational and skill components, it can be concluded that students' confidence in their entrepreneurial abilities and skills to start and manage a new business (perceived behavioral control) gives them the power to have creative intentions and decisions to start a new activity. Finally, it can be concluded that TPB has the ability to be developed in the field of investigating the emergence of entrepreneurial behaviors. Because, by developing it, the predictive power of intention and behavior will increase and it will provide a proper understanding of the process of entrepreneurial behavior. Based on this, it can be suggested that the officials and planners of the agricultural faculties in the curriculum and

educational planning department, should pay more attention to the educational content and formulate educational activities in order to strengthen and develop creativity and innovative ideas. This will improve motivational factors (attitude, perceived behavioral control, and subjective & social norms). Regarding the executive and practical measures, it can also be suggested that universities try to establish continuous and stable communication with the industry sector and various industries. Connecting students with the industry sector during their studies will lead to the recognition of the potential in the market and knowledge of the required entrepreneurial skills. Therefore, this recognition will significantly help to strengthen and promote rural entrepreneurial intention of students and as a result, the emergence of entrepreneurial behaviors. This is while [Ataei et al. \(2015\)](#) also considered the effective and stable relationship between universities and the industry sector as an important factor in students' entrepreneurial intentions. Finally, it is suggested that the future researches, by using cognitive factors and applying it in TPB, will provide more insights into the rural entrepreneurial intention and the development of TPB.

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Authors' contributions

The authors equally contributed to the preparation of this article.

Conflict of interest

The authors declare no conflict of interest.

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تحلیل مقاصد کارآفرینانه روستایی دانشجویان کشاورزی براساس نظریه توسعه یافته رفتار برنامه‌ریزی شده

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چکیده مبسوط

۱. مقدمه

روستاها یکی از مناطقی است که دانش‌آموختگان رشته‌های کشاورزی می‌توانند در آنجا فعالیت‌های کسب‌وکارهای نوآورانه خود را ایجاد و توسعه دهند. زیرا توسعه فعالیت‌های کارآفرینانه در مناطق روستایی بسیاری از هزینه‌های اولیه را کاهش می‌دهد و به دلیل قرار گرفتن مرکز تولیدات کشاورزی در مناطق روستایی، دانش‌آموختگان کشاورزی می‌توانند ارتباط نزدیک‌تر و آسان‌تری را با بهره‌برداران ایجاد کنند. از طرف دیگر، ۹۶ درصد منابع آب و خاک در مناطق روستایی قرار دارد و وجود این پتانسیل می‌تواند دانش‌آموختگان کشاورزی را برای ایجاد کسب‌وکارهای کارآفرینانه به این مناطق هدایت کند. در صورت گذار ایجاد کسب‌وکارهای کارآفرینانه توسط دانش‌آموختگان کشاورزی به مناطق روستایی، قدم بسیار مهمی در توسعه روستایی برداشته می‌شود. بنابراین، پژوهش حاضر با هدف تحلیل مقاصد کارآفرینانه روستایی دانشجویان کشاورزی دانشگاه همدان براساس نظریه توسعه یافته رفتار برنامه‌ریزی شده انجام گردید.

۲. مبانی نظری تحقیق

یکی از رایج‌ترین و جامع‌ترین مدل‌های رفتاری مورد استفاده در تحقیقات رفتاری، نظریه رفتار برنامه‌ریزی شده می‌باشد. نظریه رفتار برنامه‌ریزی شده برای تبیین و پیش‌بینی قصد و رفتار در زمینه‌های مختلف پژوهشی نظیر علوم پزشکی، روانشناسی، کشاورزی و بازاریابی به کار رفته است. بسیاری از تحقیقات انجام شده با بهره‌گیری از نظریه رفتار برنامه‌ریزی شده بر اثرات عوامل شخصیتی و

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روان‌شناختی بر روی رفتار و قصد کارآفرینانه تمرکز داشتند، در حالی که اغلب نقش مهم مهارت‌های کارآفرینانه نادیده گرفته شده است. این در حالی است که مهارت‌های کارآفرینانه می‌تواند پایه‌گذار بروز قصد و بالطبع رفتار کارآفرینانه در دانش‌آموختگان دانشگاهی باشد. قصد کارآفرینانه دانشجویان در دانشگاه‌های مختلف وضعیت متفاوتی دارد. به‌طوری که، در برخی موارد دانشجویان از قصد کارآفرینانه ضعیف و یا متوسطی برخوردار می‌باشند. قصد کارآفرینانه اشاره به یک حالت ذهنی دارد که فعالیت‌های فرد را به سمت توسعه و اجرای کسب‌وکار هدایت و راهنمایی می‌کند. به عبارتی، قصد کارآفرینانه حالت آگاهانه ذهنی است که پیش از عمل واقع شده و نسبت به راه‌اندازی کسب‌وکار را به‌عنوان یک هدف هدایت می‌کند.

۳. روش تحقیق

تحقیق حاضر از لحاظ نوع پژوهش، کاربردی، از لحاظ زمانی، گذشته‌نگر، از جهت پارادایمی نیز، کمی بوده است. همچنین، پژوهش مورد نظر از لحاظ کنترل متغیرها، غیرآزمایشی و جامعه‌شناختی، از جنبه عملیات آماری، "علی-رابطه‌ای" و "توصیفی-همبستگی" می‌باشد. جامعه مورد بررسی، کلیه دانشجویان کشاورزی سال آخر دانشگاه بوعلی سینا، همدان بودند ($N=420$). برای نمونه‌گیری جامعه پژوهش، از روش نمونه‌گیری تصادفی ساده و برای تعیین حجم نمونه نیز از جدول رجسی و مورگان استفاده گردید ($n=200$). برای جمع‌آوری داده‌ها، از پرسشنامه محقق-ساخته، استفاده گردید. پرسشنامه طراحی شده شامل عناصر تئوری رفتار برنامه‌ریزی شده، مهارت‌های کارآفرینانه و ویژگی‌های جمعیت-شناختی دانشجویان بود.

چشم‌گیری خواهد داشت. به بیان دیگر، علاوه بر مؤلفه‌هایی نظیر نگرش، کنترل رفتار درک‌شده و هنجارها، مهارت‌های کارآفرینانه نیز نقش بسیار مهمی در پیش‌بینی قصد کارآفرینانه دانشجویان دارد. می‌توان نتیجه گرفت که توانمند بودن دانشجویان از لحاظ مهارت-های کارآفرینی باعث ایجاد حس اعتماد به نفس قوی در آنان برای ریسک‌پذیری خواهد شد و بالطبع، قصد آنها برای راه‌اندازی کسب-وکار جدید در مناطق روستایی ارتقا می‌یابد. از طرف دیگر، ارزشیابی‌های ذهنی که دانشجویان از راه‌اندازی کسب‌وکار جدید دارند نیز می‌تواند قصد کارآفرینانه آنها را تحت تأثیر قرار دهد. به بیان دیگر، اگر نگرش ذهنی آنها نسبت به انجام یک فعالیت مثبت باشد، قصد بروز رفتار کارآفرینانه تقویت می‌شود؛ اما وجود نگرش منفی مانعی بزرگ برای شکل‌گیری قصد کارآفرینانه روستایی خواهد شد. از تعامل مؤلفه‌های انگیزشی و مهارتی نیز می‌توان استنباط نمود که اطمینان دانشجویان نسبت به توانایی‌ها و مهارت‌های کارآفرینی خود جهت راه‌اندازی و مدیریت کسب‌وکار جدید، این قدرت را به آنها می‌دهد که نسبت به شروع فعالیت جدید، قصد و تصمیم‌گیری خلاقانه‌ای داشته باشند.

کلیدواژه‌ها: مقاصد کارآفرینانه روستایی، نظریه رفتار برنامه‌ریزی-شده، دانشجویان رشته کشاورزی، آموزش کارآفرینی.

تشکر و قدرانی

مقاله مستخرج از طرح پژوهشی قرارداد شماره ۲۰۳۴/۳۱/۱ که از منابع گرانت دانشگاه پیام نور تامین اعتبار گردیده است.

برای سنجش مهارت‌های کارآفرینانه دانشجویان از طیف لیکرت پنج قسمتی (خیلی کم = ۱ تا خیلی زیاد = ۵) و برای سنجش عناصر تئوری رفتار برنامه‌ریزی شده از طیف پنج قسمتی (کاملاً مخالف = ۱ تا کاملاً موافق = ۵) استفاده شد. روایی صوری و محتوایی پرسشنامه توسط پانلی از متخصصان حوزه رفتار کارآفرینانه تأیید گردید. برای تأیید پایایی ابزار پژوهش نیز یک مطالعه راهنما و محاسبه ضریب تتای ترتیبی صورت پذیرفت.

۴. یافته‌های تحقیق

نتایج تحلیل عاملی تأییدی نشان داد که نشانگرهای مورد استفاده برای اندازه‌گیری صفت‌های مکنون مورد مطالعه این پژوهش با ساختار عاملی و زیربنای نظری پژوهش تطابق قابل قبولی دارند. نتایج مشخص کرد که سه مؤلفه تئوری رفتار برنامه‌ریزی شده اصلی (نگرش، کنترل رفتاری درک‌شده و هنجارهای اجتماعی) تأثیر مثبت و معنی‌داری بر مقاصد کارآفرینانه روستایی دانشجویان داشتند که ۵۱ درصد از واریانس مقاصد کارآفرینانه روستایی را پیش‌بینی می‌کند. به علاوه، پس از اضافه کردن شش مهارت کارآفرینی به مدل، قدرت پیش‌بینی‌کنندگی نظریه رفتار برنامه‌ریزی شده تا ۱۹ درصد افزایش یافت. به طوری که، چهار مهارت دانش طرح کسب‌وکار، ارتباطات، تیم‌سازی و برنامه‌ریزی تأثیر مثبت و معنی‌داری بر قصد کارآفرینانه روستایی دانشجویان داشتند.

۵. بحث و نتیجه‌گیری

نتایج به دست آمده حاکی از آن بود که با اضافه کردن مهارت‌های شش‌گانه کارآفرینی به نظریه اصلی رفتار برنامه‌ریزی شده، قدرت پیش‌بینی‌کنندگی قصد کارآفرینانه روستایی دانشجویان افزایش

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