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Impacts of Self-efficacy on Perceived Feasibility and Entrepreneurial Intentions: Empirical Evidence from China

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Abstract

This paper presents a structural equation model of entrepreneurial intentions as influenced by self-efficacy and perceived feasibility. In this paper self-efficacy refers to a kind of subjective perception and belief that the farmers complete the entrepreneurial activities on the basis of their capacity defined as entrepreneurial self-efficacy, which measured by five dimensions including resource acquisition, opportunity recognition, interpersonal relations, risk management, innovation management. The main findings are that most farmers appear to have a remarkable degree of entrepreneurial intentions; besides, self-efficacy has a significant and positive impact on farm households' entrepreneurial intentions, and the effect is 0.669; furthermore, perceived feasibility of farmers play a significant role on entrepreneurial intentions; finally, the perceived feasibility of farmers has a partial mediating effect between entrepreneurial self-efficacy and the entrepreneurial intentions.



1. Introduction

China is a large agricultural country (Wen 2001) and farmers comprise 70% of the population. Entrepreneurship is regarded as an important and effective way to solve issues involving agriculture development, farmers' income, and rural economy, and has become the focus of social attention. For instance, based on the statistical data of the rural labor force in China from 1981 to 2002, Mohapatra, Rozelle, & Goodhue (2007) analyzed the relationship between farmers' self-employed behavior and rural economic development, they found that the self-employed behavior of most farmers was efficient and that it was increasing; younger farmers with higher education and professional skill levels were more likely to engage in self-employed activities and their self-employed behavior has a positive promoting effect on rural economic growth. A robust body of studies has been conducted to identify the personal and environmental factors that motivate and prepare individuals to enter the challenging process of creating a new venture (McMullen & Shepherd 2006). A study of entrepreneurs was conducted on farmers working in township enterprises in rural China. The results show that variables such as education, the social influence of families, a strong sense of responsibility, available market information or capital, and hard work are the necessary characteristics for a successful entrepreneur farmer (Fan, Y, Chen, N, et al. 1996). Zhu (2010) argued that most Chinese farmers have a strong desire to create a new business; however, they are restricted by the urban–rural dual system and many factors like capitals, technology, and policy preventing farmers from engaging in entrepreneurship. Zhong et al. (2010) used a survey to investigate the factors that affect farmers starting new businesses. The results revealed that the entrepreneurial intention of farmers was influenced by variables such as entrepreneurship education, work experience, life satisfaction, social status, family size, the number of family members providing labor, family income, the number of family members or friends experienced in entrepreneurship, and access to venture capital. Shi et al. (2010) conducted an analysis on their survey of 1019 farmer households. Their results indicated that variables like family economic status, education, beliefs, and enthusiasm for production have a significant impact on their entrepreneurial behavior. Due to the above facts and increased farmers' entrepreneurship concerns, several individual attributes which affect whether a farmer becomes an entrepreneur have attracted the attention of the scholars and governments. One of these personal



attributes, entrepreneurial self-efficacy, a strong predictor of entrepreneurial intentions and ultimately action (Bird 1988), is particularly useful since it incorporates personality as well as environmental factors. In addition to the predict function, it appears to be a particularly important antecedent to new venture intentions (Pihie & Bagheri 2013).

Researchers have mostly applied the Entrepreneurial Event Model (Shapero & Sokol 1982) to explain individuals' behavior (Berger & D'Ascoli 2012). This model considers business creation as an event that can be explained by the interaction among initiatives, abilities, management, relative autonomy, and risk. These factors shape individuals' behavior choice to establish their own businesses. According to this study, a decision to start a new venture depends on the perceived belief in respect of desirability, the propensity to act as well as the perception of feasibility which were tested empirically by Krueger Jr, Reilly, & Carsrud (2000), and Peterman & Kennedy (2003). Entrepreneurial choice is a complex and deliberate behavior that requires various cognitive processes and can most accurately be predicted by intention (Schjoedt & Shaver 2007), so understanding the formation of entrepreneurial intentions is important to our study of entrepreneurial behavior (Shane & Venkataraman 2000). However, there is little knowledge about the factors that influence individuals' entrepreneurial intentions (Fayolle & Gailly 2008), especially in respect of the process of farmers becoming entrepreneurs.

Previous research has shown that entrepreneurial self-efficacy highly affects individuals' intentions to become entrepreneurs. Individuals with higher degrees of entrepreneurial self-efficacy in the early stages of venture development will have higher entrepreneurial intentions, and those with both higher self-efficacy and higher intentions will have a higher probability of being involved in entrepreneurial activity later in life (Carr & Sequeira 2007). Entrepreneurial self-efficacy is also the key personal capability that motivates entrepreneurial behaviors (Tyszka, Kennedy, Adolphs, & Paul 2011) and enables entrepreneurs to overcome difficulties during the entrepreneurship process; these behaviors include opportunity recognition, the marshalling of resources, and improving the performance of the new business (Tumasjan & Braun 2012). Therefore, entrepreneurial self-efficacy not only influences individuals' decisions to choose an entrepreneurial career but also directs their future performance in the process of managing and developing a new venture (Bandura 2000). However, there is little knowledge about how the entrepreneurial self-efficacy evident in the performance of entrepreneurial tasks improves farmers'

intentions to become entrepreneurs. Furthermore, intention is also related to attitudes, in particular those concerned with perceived feasibility (Gatewood, Shaver, & Gartner 1995). The perception of feasibility is one of the critical elements in determining an individual decision to start a new venture. Moreover, few researchers have examined the association between farmers' entrepreneurial self-efficacy, their entrepreneurial intentions, and other personal attributes such as perceived feasibility (McMullen & Shepherd 2006). Using the model as the theoretical framework for the research, this study aims to answer two questions. First, what is the nature of the relationships between entrepreneurial self-efficacy, perceived feasibility, and the entrepreneurial intention of a farm household? Second, does perceived feasibility have a mediating effect on the relationship between farmers' entrepreneurial self-efficacy and their intentions? This is one of the first empirical studies to explore the linkages between farmers' entrepreneurial self-efficacy in performing required roles and tasks for launching a new business, the perceived feasibility guiding their behavior towards creating a new venture, and the intention to choose an entrepreneurial career. The remainder of this paper is organized in five sections. First, we describe the theoretical background and our hypotheses relating to the relationship between farmers' entrepreneurial self-efficacy, perceived feasibility, and entrepreneurial intentions. We then present our research method, results, and findings. Finally, we conclude with a discussion of the findings in light of their implications for entrepreneurship education and theory development.

2. Conceptual background and hypotheses

The concept of self-efficacy is derived from social learning theory and refers to a person's belief in his or her capability to perform a particular task (Bandura 1977). Self-efficacy has been defined as "...belief in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands..." (Wood & Bandura 1989a). Self-efficacy reflects an individual's self-assessment as to whether they have the ability to perform a particular task as well as the belief that they can convert those skills into a successful outcome (Wood & Bandura 1989b). Entrepreneurial self-efficacy involves extending self-efficacy theory to the venture domain to explain how personal efficacy expectations might develop differently in entrepreneurial activities and management. It has been defined as the beliefs in individuals' capacities to successfully perform the tasks required for starting and managing a new business and



their expectations towards the outcomes of creating a new venture (Kickul, Wilson, Marlino, & Barbosa 2008); this is perhaps the most widely accepted scientific definition of entrepreneurial self-efficacy (Krueger Jr et al. 2000). It has since become increasingly popular within psychology, sociology, and behavior and management science as a psychological determinant of entrepreneurial performance (Markman, Gianiodis, Phan, & Balkin 2005). Entrepreneurial self-efficacy affects a wide array of individual behaviors and performance. It can also predict crucial aspects related to attitudes and entrepreneurial intentions (Bird 1988). Entrepreneurial self-efficacy is conceptualized as composed of five distinct dimensions (Ehrlich, De Noble, Jung, & Pearson 2000). (a) Resource acquisition: this refers to the accessibility by an individual to the basic requirements when they create a new business, such as human capital, funds, materials (such as raw materials), information, and other basic business needs. (b) Opportunity recognition: this relates to a kind of subjective judgment and discernment by an individual of business opportunities when they arise, thereby enabling them to further implement entrepreneurial behavior. For instance, when the government introduces a new policy to provide business knowledge training, describes cases of entrepreneurial success, demonstrates new technologies or new species, and promotes creative ideas, individuals can make a preliminary judgment, based on their experiences, about the opportunity. (c) Interpersonal relations: this refers to the relationships of an individual in their social environment, their asset level, and their social status. This study focuses on whether there are any family members or friends of individuals who work at the local government offices, at financial institutions, at agricultural stations, or at associations and village committees, and on assessing farmers' local social network size and the strength of their social status. (d) Risk management: this refers to the ability of individuals to predict risk and to prevent these risky events from taking place; that is, they can handle and control the risk emergence effectively and reduce the loss quickly. (e) Innovation management: this refers to the ability of individuals who take part in reforming management processes to reduce the influence derived from the traditional cultural environment by using their own knowledge, technology, and management methods to manage the entrepreneurial process.

The second variable of the study, perceived feasibility, is the degree to which individuals has a positive affective orientation towards behavior in the process of achievement based on their perception, which is rooted in the certainty of their entrepreneurial cognition, information

collection, analysis, and evaluation. In order to perform the behavior, individuals need to exercise a sufficient degree of actual and perceived control over the behavior itself and over the outcome of the behavior. In other words, the person needs to perceive that the behavior is possible and that the outcome of the behavior will be positive. Herzberg (1968) who is a well-known contributor to the theory of motivation, introduced the “two factor theory”; one refers to “hygiene” factors that are extrinsic influences on the task and the other refers to “motivators” that are intrinsic influences on the task. In our study, we extend the “two factor theory” to the entrepreneurs’ perceived feasibility. In other words, we argue that perceived feasibility refers to compositions of extrinsic perception and intrinsic perception. More specifically, extrinsic perception represents individuals’ awareness of contextual factors such as culture, economic development, and institutional support for entrepreneurial activities; intrinsic perception reflects individuals’ perception of their attributes, traits, abilities, and skills to perform entrepreneurial tasks. Entrepreneurship is a complex and deliberate behavior that requires various cognitive processes (Schjoedt & Shaver 2007). As Ehrlich et al. (2000) noted, often the entrepreneurial role is not clearly defined, and many uncertainties may exist regarding the success of one’s venture. These uncertainties, they claim, can serve as barriers to entrepreneurs, especially in the start-up phase. Uncertainty surrounding the likelihood of success would seem to be inextricably linked to the attitude that one has the abilities to succeed. Indeed, given the complex tasks involved for an individual to locate an opportunity, assemble the resources, set up a business, and build it in to a successful entity, an attitude of the perceived feasibility of one’s ability to succeed as an entrepreneur would seem to be especially important. In entrepreneurship literature, perceived feasibility has been recognized as one of the important factors influencing the desire of an individual to be an entrepreneur. A number of entrepreneurship research studies have been devoted to individuals’ perceived feasibility as it relates to a wide range of issues in behavior regulation (Pihie & Bagheri 2013). The study of perceived feasibility has focused on both outcomes and their antecedents (Prinz 1997). Empirical research has highlighted that perceived feasibility is one of the strongest attitude factors influencing individuals’ entrepreneurial intentions (Pihie & Bagheri 2013). In other words, perceived feasibility highly affects individuals’ intention and competence to become an entrepreneur, the degree of feasibility they perceive towards creating a new business, their persistence in facing the changes and challenges of the new venture creation process, and their success in performing entrepreneurial

roles and tasks. Other studies mention that perceived feasibility has a mediating effect on entrepreneurs in entrepreneurial environments (Ruiz-Palacios et al. 2006). However, little is known about the mechanism through which perceived feasibility affects behavior in general (Bandura 1977) and entrepreneurial intentions for farm households in particular.

The third variable of this study, entrepreneurial intention, can be defined as “a subjective attitude of potential entrepreneurs, engaged or not in business activities, and a general description of the people with entrepreneurial traits, attributes and ability” (Qian 2007). It is a sort of individual mental state that leads individuals to be willing to devote a lot of their time, energy, and action to take an opportunity or to achieve a goal. In other words, entrepreneurial intention is a kind of mental model to guide an individual to take an intentional action and to make a decision, and it reflects the motivation and the goal of the individual behavior. Entrepreneurial intention can be used to effectively predict entrepreneurial behavior (Boyd & Vozikis 1994). Therefore, future entrepreneurial decisions by potential entrepreneurs and the beliefs or tendencies of current entrepreneurs to take action in accordance with their entrepreneurial decisions can be predicted by studying the entrepreneurial intention (Krueger Jr et al. 2000).

As intentions have been shown to be a good predictor of subsequent behavior (Ajzen 2001), understanding the identity and nature of the antecedent factors that influence entrepreneurial intentions is of crucial importance to the study of entrepreneurial behavior (Shane & Venkataraman 2000). Krueger Jr et al. (2000) argue that the formation of entrepreneurial intentions by the individual depends on the perceived feasibility of the entrepreneurial behavior, yet the entrepreneurial self-efficacy of an entrepreneurial action depends, in turn, on the individual's attitudes towards the outcomes of that action in conjunction with the magnitude of those outcomes; that is, Krueger and colleagues have established that the antecedents of entrepreneurial intentions can be parsimoniously characterized by an individual's perception of the feasibility of the entrepreneurial opportunity (Krueger Jr et al. 2000). Prior research has shown that individuals' perceived feasibility can be influenced and guided by both personal beliefs and environmental factors (Souitaris, Zerbinati, & Al-Laham 2007). Other studies have shown that individuals' beliefs in their abilities and skills to perform the tasks of an entrepreneur affect their entrepreneurial intentions through enhancing their perceived feasibility over the process of entrepreneurship (Carr & Sequeira 2007) and through improving their abilities to face the challenges and overcome the

impediments in the process. Accordingly, we expect that perceptions of feasibility and entrepreneurial self-efficacy may interact in the formation of an individual's entrepreneurial intentions. Indeed, a number of behavioral science studies outside the entrepreneurship domain have found support for such an interaction effect between factors related to entrepreneurial self-efficacy and perceived feasibility (Conner & McMillan 1999). These indicate that it seems likely that entrepreneurial intentions are, in the general sense, not only a function of the main effects of entrepreneurial self-efficacy and perceived feasibility but also a function of the interaction between these factors. However, recent research has suggested that the relationship between these factors might be more complex (Barbosa, Gerhardt, & Kickul 2007). Consequently, as mentioned above, there are four alternative models of entrepreneurial self-efficacy, perceived feasibility, and entrepreneurial intention relationships. a) Entrepreneurial self-efficacy is antecedent to entrepreneurial intention. Some research suggests that entrepreneurial self-efficacy is positively related to the intention to establish one's own business (Sequeira, Mueller, & McGee 2007). b) Entrepreneurial self-efficacy is antecedent to perceived feasibility. Prior research has shown that individuals' perceived feasibility can be influenced and guided by both personal beliefs and environmental factors (Souitaris et al. 2007). c) Perceived feasibility is antecedent to entrepreneurial intention. Some other research suggests that a strong positive perception of the feasibility of an outcome implies that the individual expects to gain substantial satisfaction from experiencing that outcome, and this militates in favor of shaping the entrepreneurial intention and subsequently pursuing that action (Douglas & Shepherd 2002). d) Perceived feasibility and entrepreneurial self-efficacy may interact in the formation of the individual's entrepreneurial intentions. Some research suggests that there is an interaction effect between the factors related to entrepreneurial self-efficacy and perceived feasibility (Conner & McMillan 1999). Accordingly, the main hypotheses of the study are as follows:

Hypothesis1. Entrepreneurial self-efficacy has a notable and direct positive effect on farmers' entrepreneurial intentions.

Hypothesis2. Entrepreneurial self-efficacy has a direct effect on perceived feasibility.

Hypothesis3. Perceived feasibility has a direct effect on entrepreneurial intentions.

Hypothesis4. Perceived feasibility has a mediating effect between entrepreneurial self-efficacy and entrepreneurial intentions.

Following the Baron & Kenny (1986) analysis on mediator variables, this paper forms two alternative hypotheses as follows:

Hypothesis 4-a. Perceived feasibility has a full mediating effect between entrepreneurial self-efficacy and entrepreneurial intentions.

Hypothesis 4-b. Perceived feasibility has a partial mediating effect between entrepreneurial self-efficacy and entrepreneurial intentions.

3. Methods and data

3.1 Structural equation model

Structural equation modeling (SEM) has been used in this study in order to explore the relationship of entrepreneurial self-efficacy and perceived feasibility with entrepreneurial intentions and examines the mediating effect of perceived feasibility between entrepreneurial self-efficacy and entrepreneurial intentions. SEM is a family of statistical techniques that incorporates and integrates path analysis and factor analysis. SEM can handle a large number of endogenous and exogenous variables, as well as latent variables specified as linear combinations of the observed variables. Indeed, the structural regression (SR) model has been tested following a two-step modeling approach (Anderson & Gerbing 1988), where we first define an acceptable confirmatory factor analysis (CFA) and then an adequate SR model. Following Jöreskog & Sörbom (1996), we have specified a structural equation model that consists of three main types of relationships.

First, a measurement model is identified after performing confirmatory factor analysis. The outcome relates the observed indicators to the exogenous latent variables:

$$X = \Lambda_x \xi + \delta \quad (1)$$

where x is a $q \times 1$ vector of observed exogenous or independent variables, Λ_x is a $q \times n$ matrix of coefficients of the regression of x on ξ , ξ is an $n \times 1$ random vector of latent independent variables, and δ is a $q \times 1$ vector of error terms in x .

Second, the observed indicators are related to the endogenous constructs:

$$Y = \Lambda_y \eta + \varepsilon \quad (2)$$

where y is a $p \times 1$ vector of observed endogenous or dependent variables, Λ_y is a $p \times m$ matrix of coefficients of the regression of y on η , η is an $m \times 1$ random vector of latent dependent variables, and ε is a $p \times 1$ vector of measurement errors in y .

A third equation defines the structural model, which specifies the causal relations that exist among the latent variables, describes the causal effects, and assigns the explained and unexplained variances (Jöreskog & Sörbom 1996).

$$\eta = B\eta + \Gamma\xi + \zeta \quad (3)$$

where B is an $m \times m$ matrix of coefficients of η variables in the structural model, Γ is an $m \times n$ matrix of coefficients of the ξ variables in the structural relationship, and ζ is a vector.

In the study, there are three latent variables of entrepreneurial self-efficacy, perceived feasibility, and entrepreneurial intention assessed, as well as different dimensions of entrepreneurial self-efficacy and perceived feasibility. Also, we proceed with estimating the reliability coefficients of each equation and the associated correlation matrix among constructs examined in the model. Finally, diagnostic parameters such as df , Chi-square (χ^2), χ^2 / df , the Root Mean Square Error of Approximation (RMSEA), the Goodness-of-Fit Index (GFI), the Adjusted Goodness-of-Fit Index (AGFI), the Comparative-Fit-Index (CFI), the Tucker-Lewis Index (TLI), and the Incremental-Fit-Index (IFI) will be also considered as indicators of the model goodness-of-fit for the CFA and the SR model.

3.2 Data collection

In November 2010, faculty and students from Northwest A&F University (PR China) and Cornell University (USA) conducted a survey in Shaanxi province of 730 farm households (FHs) in two counties, comprising Fu-feng (255 FHs) and Hu-xian (261 FHs), and in the Yang-ling District (214 FHs). The interviewed farmer households were selected at random according to the regional economy, the entrepreneurship status, and the spatial distribution of the villages; 25%–30% of the total families in each village were surveyed. Investigators conducted one-on-one interviews and filled in the questionnaires for each farm household. Questionnaires were issued to 730 farmer households, and after accounting for missing variables, we obtained 664 valid questionnaires.

The structured questionnaire consisted of three separate surveys of farmers' entrepreneurial self-efficacy, perception of feasibility, and entrepreneurial intentions. The respondents were asked to indicate their agreement with each statement on a five-point Likert-type scale, with response options ranging from 1 (totally disagree) to 5 (totally agree). An important observation from our data is that most farmers appear to have a remarkable degree of entrepreneurial intention. Table 1 displays the reliability results for variables

3.3 Data analysis

Data analysis was carried out using the SPSS 16.0 and Amos 7.0. We considered p-values equal to or lower than 0.05 to be statistically significant. Exploratory factor analysis was performed on all 23 of the entrepreneurial self-efficacy items. Both principle component analysis and principle axis factoring included five factors, representing the dimensions of entrepreneurial self-efficacy, with each indicator loading significantly to its hypothesized construct. For further analysis, mean scores were calculated to represent the dimensions of entrepreneurial self-efficacy as indicators. Confirmatory factor analysis was performed on the dimensions of entrepreneurial self-efficacy. A single factor emerged with significant loadings of all indicators. Exploratory factor analysis on all eight items of perceived feasibility pointed out two factors, intrinsic perception and extrinsic perception, which were consistent with hypothesized items. Each indicator item's loadings were significant on their hypothesized construct. For further analysis, the means of the respective items were used as a summary score to represent the aspects of perceived feasibility as indicators. Furthermore, factor analysis on the aspects of perceived feasibility indicated a single factor—perceived feasibility—with equal and significant loadings. Entrepreneurial intention items were also subjected to exploratory factor analysis. A single factor emerged with significant item loadings. The mean value of the indicator items was used to represent entrepreneurial intention throughout this study. Overall, exploratory factor analysis indicated that each indicator item was associated with its hypothesized construct. Items were loaded on their hypothesized constructs, not cross-loaded altogether on another construct, and uncorrelated items loaded on different constructs. To evaluate convergent validity, confirmatory factor analysis was used on Amos 7.0. The measurement model with two latent variables (entrepreneurial self-efficacy and perceived

feasibility) and a simple variable (entrepreneurial intention) was assessed. All the loadings of the indicators to their constructs were significant at the 0.01 level, suggesting convergent validity.

In this study, reliability analyses were conducted for all the study variables in terms of Cronbach's α ¹ and composite reliabilities. Table 1 summarizes the results of the reliability analysis for entrepreneurial self-efficacy and its dimensions, perceived feasibility and its aspects, and entrepreneurial intentions. Composite reliabilities that were considered acceptable for each construct were calculated as greater than 0.50.

4. Empirical Results

4.1 Correlation analysis

The purpose of correlation analysis is to study whether there is a close relationship between different variables and to explore the correlation direction of closely-related variables and the degree of their correlation. It is the cornerstone for further exploration on the relationship between variables. The correlation coefficients for the study variables are given in Table2. Entrepreneurial self-efficacy is correlated with perceived feasibility and entrepreneurial intention. A closer look at the dimensions of entrepreneurial self-efficacy revealed that all of the dimensions have significant correlations with perceived feasibility and entrepreneurial intention.

4.2 Test of causal relations

The goodness of fit indices obtained for measurement model 1 imply that the model fits the data well because χ^2/df was less than 3, all of the indices were greater than 0.90, and the RMSEA was less than 0.05 (Hair, Sarstedt, Ringle, & Mena 2012). The values of fit indices on model 1 are as follows: $df = 226$, $\chi^2 = 574.499$, $\chi^2/df = 2.542$, $RMSEA = 0.048$, $GHI = 0.932$, $AGFI = 0.910$, $CFI = 0.934$, $TLI = 0.920$, and $IFI = 0.935$ ². Table3 shows that we know that the model has a good fit, also the

¹ Notes: Test for Cronbach's α coefficient: if $\alpha \geq 0.8$, the scale of reliability is best; if $0.8 > \alpha \geq 0.7$, the scale of reliability is good; if $0.7 > \alpha \geq 0.5$, the scale of reliability is acceptable; if $\alpha < 0.5$, the scale of reliability of the survey is not credible.

² χ^2/df represents model simple goodness of fit, and its value in the interval [1,3], and model fitting simplicity is close to 2, that the model fitting would be more simple; RMSEA indicates that the model fits good, its value should less than 0.05, and the value closer to 0 indicates that the model is a better fit; GFI and AGFI indicates that the model fits good, its value should more than 0.9, and the value closer to 1, indicates that the model fits better; CFI,

resource acquisition, risk management, and innovation management of farmers' entrepreneurial self-efficacy have significant influences on farmers' entrepreneurial intentions, whereas interpersonal relationships and opportunity recognition have little effect on farmers' entrepreneurial intentions. Among these, resources acquisition and innovation management have positive influences on entrepreneurial intentions, innovation management has the most significant influence on farmers' entrepreneurial intentions, and risk management has a significant negative effect on farmers' entrepreneurial intentions.

The values of fit indices on model 2 are as follows: $df = 345$, $\chi^2 = 902.326$, $\chi^2/df = 2.615$, $RMSEA = 0.049$, $GHI = 0.914$, $AGFI = 0.902$, $CFI = 0.916$, $TLI = 0.901$, and $IFI = 0.917$. From Table 3, we know that the first-order structural equation model of entrepreneurial self-efficacy with entrepreneurial feasibility perception has a good fit, and the five dimensions of entrepreneurial self-efficacy have a significant impact on the extrinsic perception. Among the five dimensions of entrepreneurial self-efficacy, the impact of innovation management on entrepreneurial extrinsic perception is the most significant. The two dimensions of interpersonal and innovation management also have significant influences on entrepreneurial intrinsic perception.

4.3 Test of mediating effect

From Table 3, we know that the goodness of fit indices obtained for model 3 imply that the model fits the data well because χ^2/df was less than 3, all of the indices were greater than 0.90, and the RMSEA was less than 0.05. When controlling the mediator variable perceived feasibility, the five-dimensional components of farmers' entrepreneurial self-efficacy have little influence on entrepreneurial intentions. Therefore, perceived feasibility has a full mediating effect between the entrepreneurial self-efficacy and entrepreneurial intentions of farmers.

In accordance with the assumed path of partial mediating effect, the SEM is used for the estimation of parameters and compared with the assumed path of full mediating effect. Table 4 shows that the full intermediary and partial intermediary models of the goodness of fit index have met the requirements. According to Hou's rule of thumb, in the case of similar fit indices, we can compare the significant differences of $\Delta\chi^2$ with the two models; that is, we can compare the

TLI and IFI are models' value-added fit index, it shows the model fits good, its value should more than 0.9, and the value closer to 1, indicates that the model fits better.

χ^2/df significant differences of the two models. If they are significant, we need to select a smaller model of df ; otherwise, we should select a larger model of df (Hou Jie-tai 2007).

In this study, significant differences have been tested. Table 4 shows that $\chi^2/df = 6.87$ (significant). Therefore, a smaller model is selected (that is, a partial intermediary role model). The results validate the hypothesis H4-b; that is, farmers' entrepreneurial feasibility perception has a partial intermediary role. Accordingly, the overall impact of entrepreneurial self-efficacy on entrepreneurial intentions is 0.669; the direct effect is 0.325 and the indirect effect is 0.344; perception of feasibility has a partial mediating effect in the process of farmers starting a new business.

5. Discussions

Our literature review indicates that there has been little research focusing simultaneously on entrepreneurial self-efficacy, perceived feasibility, and the entrepreneurial intentions of farmers. Our study is a rare exception and the only study that focuses on the mediating effect of farm households' perceived feasibility between entrepreneurial self-efficacy and entrepreneurial intention. This study sought to explore the relationship among farmers' entrepreneurial self-efficacy, perceived feasibility, and entrepreneurial intentions and the mediating impact of perceived feasibility on the relationship. Our findings provided empirical evidence for the hypothesized relationship between self-efficacy, perceived feasibility, and the entrepreneurial intentions of farmers. Therefore, our H1, H2, and H3 hypotheses have been verified. More specifically, this study confirmed that domain specific self-efficacy has the most significant positive effect on entrepreneurial intentions. This finding supports the influential effect of perceived feasibility on individuals' intentions to become entrepreneurs (McMullen & Shepherd 2006). Therefore, farmers' entrepreneurial intentions can be enhanced through improving their attitudes to choosing whether to establish their own businesses as their career path goal and enabling them to face the inherent challenges of the new venture creation process. Furthermore, self-efficacy emerged as the most significant contributor to farmers' entrepreneurial intentions because of its strong direct and indirect relationships with the construct. This highlights self-efficacy as the strongest factor influencing individuals' decisions to become entrepreneurs and highlights the need for them to improve their entrepreneurial self-efficacy.

Our analysis of the path structure between the constructs under investigation indicated that perceived feasibility partially mediates the relationship between entrepreneurial self-efficacy and the entrepreneurial intentions of farmers. Therefore, the study's H4-b hypothesis has been verified. However, the impact of perceived feasibility on entrepreneurial intentions is less than the effect of entrepreneurial self-efficacy on the construct. Bandura (2012) argues that self-efficacy affects behavior through behavior perceived processes such as enhancing one's attitude and ability to set goals and expectations and modifying personal behavior to achieve the goals. The significant impact of self-efficacy on perceived feasibility emerging from this study confirms the associative and complementary effect of perceived feasibility and self-efficacy on entrepreneurial behavior. Therefore, researchers may need to include these constructs in their studies in order to improve the knowledge of entrepreneurial behavior. They may also apply the model emerging from this study as a framework to develop theories on entrepreneurial behavior, including theories related to farmers' entrepreneurial intentions.

The findings of our study also have several implications for entrepreneurship educators. First, the strong impact of self-efficacy on entrepreneurial intentions necessitates providing more purposive and effective entrepreneurship education and training for farmers to enhance their efficacy in performing the specific tasks and roles of an entrepreneur. Furthermore, entrepreneurship education can offer a challenging but supportive environment for farmers to run a small new business rather than stressing only entrepreneurship theories. Particularly in China, there is an urgent need to provide farmers with experiential entrepreneurship learning activities. Second, the associative and complementary relationship between entrepreneurial self-efficacy and perceived feasibility may help educators to use these synergies and develop farmers' entrepreneurial capabilities and intentions more effectively. Since the educational methods for improving individuals' perceived feasibility are underdeveloped, educators may need to utilize the previously established pedagogical activities for developing self-efficacy to also improve farmers' perceived feasibility by emphasizing more challenging targets and stressing successful goal achievements. Therefore, entrepreneurship educators need to be well trained and equipped with the skills needed to design and implement various pedagogical methods to improve self-efficacy, perceived feasibility, and consequently the entrepreneurial intentions of farmers.

6. Conclusions

After determining the study variables of farmers' entrepreneurial self-efficacy, feasibility perception, and entrepreneurial intentions, this study has explored the role of farmers' entrepreneurial self-efficacy on farmers' entrepreneurial intentions, examined the mediating effect of farmers' entrepreneurial feasibility perception, and has probed the internal mechanism and effect of individual farmers' self-efficacy on entrepreneurial intentions. Our conclusions are as follows. First, farmers' entrepreneurial self-efficacy produces a significant positive effect on farmers' entrepreneurial intentions; the effect is 0.669, with the direct effect being 0.325 and the indirect effect being 0.344. Second, the perceived feasibility of farmers has a partial mediating effect between entrepreneurial self-efficacy and the entrepreneurial intentions of farmers to create new businesses. Third, through the analysis on relationships among entrepreneurial self-efficacy, perceived feasibility, and entrepreneurial intentions, we know that individual farmers, as the main party in behavioral decision-making and implementation, play a key role. Therefore, there is substantial research significance in the study of the behavior of decision-making and the implementation process from the perspective of individual farmers.

Tables

Table 1 Reliability results for variables (N=664)

Variables	EP	IP	RA	IM	RM	OR	IR	EI
Cronbach's α	0.764	0.730	0.739	0.810	0.825	0.772	0.546	0.736

EP: extrinsic perception; IP: intrinsic perception; RA: resource acquisition; IM: innovation management; RM: risk management; OR: opportunity recognition; IR: interpersonal relations; EI: entrepreneurial intention.

Table 2 Correlation analysis results for variables

Variables	EP	IP	RA	IM	RM	OR	IR	EI
EP	1							
IP	0.001 [*]	1						
RA	0.038 [*]	0.057 [*]	1					
IM	0.377 ^{**}	0.157 ^{**}	0.065 [*]	1				
RM	0.162 ^{**}	0.099 [*]	0.122 ^{**}	0.289 ^{**}	1			
OR	0.127 ^{**}	0.038 [*]	0.130 ^{**}	0.061 [*]	0.293 ^{**}	1		
IR	0.149 ^{**}	0.296 ^{**}	0.033 [*]	0.231 ^{**}	0.087 [*]	0.050 [*]	1	
EI	0.255 ^{**}	0.003 [*]	-0.025 [*]	0.272 ^{**}	0.111 ^{**}	0.056 [*]	0.102 ^{**}	1

^{**}. Correlation is significant at the 0.01 level (2-tailed); ^{*}. Correlation is significant at the 0.05 level (2-tailed)

Table 3 Test of causal relationship results for variables

Model 1	Coefficients	Model 2	Coefficients	Model 3	Coefficients
direct path		direct path		direct path	
RA→EI	0.478*	RA→EP	0.480*	RA→EP	0.460*
IR→EI	0.416	IR→EP	0.416*	IR→EP	0.458*
OR→EI	0.320	OR→EP	0.536**	OR→EP	0.524**
RM→EI	-0.431*	RM→EP	0.409*	RM→EP	0.469*
IM→EI	0.616***	IM→EP	0.619***	IM→EP	0.603***
		RA→IP	0.340	RA→IP	0.401
		IR→IP	0.663**	IR→IP	0.565**
		OR→IP	0.314	OR→IP	0.323
		RM→IP	-0.346	RM→IP	-0.344
		IM→IP	0.516**	IM→IP	0.508**
				EP→EI	0.645***
				IP→EI	-0.365*

Note: *** $P \leq 0.01$; **: $P \leq 0.05$; *: $P \leq 0.1$.

Table 4 Fit indices and comparison between full and partial mediating effect

Model	df	χ^2	χ^2/df	RMSEA	GFI	AGFI	CFI	TLI	IFI
Full mediating	430	1070.99	2.489	0.047	0.908	0.907	0.909	0.912	0.91
Partial mediating	426	1043.51	2.455	0.047	0.911	0.908	0.912	0.914	0.913
Comparison	$\Delta df = 4$			$\Delta \chi^2 = 27.48$			$\Delta \chi^2/df = 6.87^{**}$		

Note: When $\Delta df = 1$, $P < 0.01$ threshold value is $\chi^2 = 6.63$, $P < 0.01$.



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