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Exploring the Role of Social Capital in Agricultural Entrepreneurial Opportunity Recognition: Application of Smart PLS

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Abstract

Although agriculture has a major role in economy, in general, and employment opportunities for unemployed population, in particular, limited ability of individuals to recognize entrepreneurial opportunities in agriculture has reduced the share of agriculture in employment. Therefore, the enhancement of opportunity recognition skills among individuals in the agriculture sector is believed to solve unemployment challenges. Social capital is a rich source of information that permits the individuals to identify different combinations of the means-ends in the creation of new products or services for a particular market. Thus, this study sought to explore the role of social capital components in agricultural entrepreneurial opportunity recognition in Kermanshah province. The statistical population of this study consisted of all agricultural entrepreneurs in Kermanshah province (N=136), 102 of them were selected as the sample of the study based on Krejcie and Morgan's sampling table and the use of a proportional stratified sampling method. The main instrument in this study was a questionnaire whose validity was confirmed by a panel of experts; its average variance was extracted, and its discriminant validity and reliability coefficient was established by using a Cronbach's alpha as well as the composite reliability index. Data were analyzed by $SPSS_{V23}$ and Smart PLS3 softwares. The result of the Structural Equation Modeling (SEM) revealed that the social capital components (strong ties and weak ties) were the main predictors of opportunity recognition among agricultural entrepreneurs in Kermanshah province. Findings of this study carry important implications for agricultural policy makers and educators aiming to foster greater inclusion and cohesion, and to increase transparency and accountability, in order to develop the recognition and exploitation of entrepreneurial opportunities in the process of promoting agricultural entrepreneurship.

Keywords:
agricultural entrepreneurship, employment, social network, strong tie, weak tie

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INTRODUCTION

Although agriculture is the main driving force in rural economy, industry has superseded in developing countries (Khoshmaram et al., 2015b). Yet, agriculture has proved to have high potential in Iran's economy. Lack of opportunity recognition skills among individuals has failed to identify opportunities in agricultural sector which in turn has led to increased unemployment and decreased share of agriculture in employment (Khoshmaram et al., 2015a). As such, unemployment rate in agriculture, on the one hand, and the role of entrepreneurship in economic development, on the other hand, have highlighted the importance of agricultural entrepreneurship (Khoshmaram et al., 2015b).

Opportunity Recognition (OR) has long been accepted as a key aspect of the entrepreneurial process. Indeed, many scholars view it as a crucial, initial step-one from which other phases of new venture creation often flow (Ozgen & Baron, 2007). OR is a vitally important new area of entrepreneurship research. Pioneered by a handful of scholars in the early 1980s, OR was soon acknowledged to be an essential aspect of understanding entrepreneurship. This is evidenced by a 1992 definition of entrepreneur as someone "who perceives an opportunity and creates an organization to pursue it" (Bygrave & Hofer, 1991). Therefore, identifying and selecting right opportunities for new businesses are among the most important abilities of a successful entrepreneur (Stevenson et al., 1985). Nevertheless, given the same set of situations, not all people can identify a given entrepreneurial opportunity (Shane, 2000; Shane & Venkataraman, 2000). Some people are able to identify opportunities that others overlook (Hayek, 1945; Kirzner, 1973). In addressing this interesting but challenging research question as to why some people and not others are able to identify entrepreneurial opportunities, prior studies lend support to the view that the ability of an entrepreneur to recognize opportunity is affected and restricted by several factors, including personal features, prior knowledge, social capital, the ability of cognitive learning, entrepreneurial motivation, resource endowments, and social conditions (Kirzner, 1973; Long and McMullan, 1984; Stevenson et al., 1985; Kaish and Gilad, 1991; Young and Francis, 1991; Hills et al., 1997; Shane, 2000; Gaglio and Katz, 2001; Mitchell et al., 2002). From among these factors, social capital has attracted the attention of many scholars because of its powerful influence and explanation in OR. Accordingly, Singh (2000) pointed out that social capital is the most important factor in the OR. Indeed, entrepreneurship research has pointed to the importance of social networks for entrepreneurs and has even argued that social capital may be the most significant source of knowledge for entrepreneurs (Johanisson, 1990).

Although OR has been the focus of entrepreneurship research, little attention has been paid to factors influence OR (such as social capital) in the context of agriculture (Khoshmaram et al., 2015b). Despite the importance of OR in agricultural entrepreneurship development, on the one hand, and social capital powerful influence and explanation in OR, on the other hand, there have been few studies that have explored the role of social capital in opportunity recognition among agricultural entrepreneurs in Iran. Given this, this study attempts to overcome this challenge by investigating the role of social capital components on opportunity recognition among agricultural entrepreneurs in Kermanshah Province, Iran.

Opportunity Recognition

Many definitions of entrepreneurship have increasingly focused on OR as central to understanding entrepreneurial behavior (Shane & Venkataraman, 2000). For example, Kirzner (1973) suggests that entrepreneurs should find and exploit opportunities by taking advantage of economic disequilibria by identifying or recognizing things that others do not recognize. Indeed, OR has been considered as a crucial step in the entrepreneurial process (Ozgen & Baron, 2007). Scholars gave various definitions to the OR construct. Shane (2003), for example, defines an entrepreneurial opportunity as a situation in which individuals can create a completely new means-ends framework by reassembling resources that they believe will yield a profit.

Gregoire et al. (2010) developed, illustrated, and validated an experimental approach to study OR, including a scale for opportunity recognition. This scale forms the basis for our empirical study. The first step when developing a new measure is to define clearly what it is supposed to capture. The ambiguities concerning the measurement of OR are partly the result of a vagueness on the conceptual side as authors frequently do not clearly distinguish between business ideas, entrepreneurial alertness, business opportunities, and entrepreneurial activity. Also, there are conflicting viewpoints of opportunities as either being objective artifacts that exist "out there" or as being the result of subjective interpretations and perceptions. To overcome these conflicting viewpoints and to help transcend the conceptual debates, Gregoire et al. (2010) make four assumptions concerning opportunity recognition.

First, they accept the common view that opportunities are related to market failures. However, these two notions are not identical; opportunities arise from market failures and offer the possibility to act in the hope of individual, firm, and social betterment. Second, they stress that opportunities are uncertain ex-ante and therefore do not exist per se as objective arte. However, the recognition of an opportunity rests on the subjective perception and interpretation of these objective realities. Thus, OR has elements of both, objectivity and subjectivity. Third, they follow Mcmullen and Shepherd (2006) by distinguishing between two phases of entrepreneurial action: Initially, a person forms a subjective believe that an opportunity exists for somebody with the relevant qualities and means (third-person opportunity). Once a person perceives a third-person opportunity he or she forms beliefs regarding this opportunity and whether to exploit it or not, i.e. whether this is an opportunity for the actor (first-person opportunity) and should be acted upon. Fourth, they model variations in opportunity beliefs of a person in terms of his or her certainty that a venture idea represents an opportunity.

Given these assumptions, Gregoire et al. (2010) define entrepreneurial opportunities as "projected courses of action to introduce (and profit from) new and/or improved supply-demand combinations that seek to address market failure problems". I also follow this definition in this contribution. Building on the conceptual assumptions stated above, they propose that OR beliefs will be reflected in indicators pertaining to three perceptual dimensions: (a) the degree of alignment between an opportunity's specific means of supply and a target market (DA), (b) the general feasibility of introducing this new/improved supply-demand combination (FE), and (c) the general desirability of doing so (DE).

Social Capital

The concept of social capital refers to the social networks and norms of reciprocity associated with them (Putnam, 2000). Social activities, springing from stable relationships maintained by individuals, groups and organizations in society are usually identified with the concept of social capital (Bourdieu, 1986; Coleman, 1988, 1990; Putnam et al., 1993; Putnam, 2000). The use of the term of social capital has become widespread (Casson & Giusta, 2007) and is used to describe in a unified way all assets that facilitate social relationships and economic exchanges (Grootaert & Basteart, 2002).

Granovetter (1973) first advanced the theory of weak tie. In this theory, he holds that there are strong tie and weak tie in the social network. Family and close friends are in the strong tie network of an individual which provides emotional (i.e. concern and understanding) and financial support (at different phases) (Ozgen & Baron, 2007). Indeed, with a strong tie, network members have a closer intimacy and interactive frequently. While the weak tie is just a nodding acquaintance. Granovertter (1973) indicates that because of strong tie often forming a closely knit clique, the information which the network members receive usually overlaps considerably with what they already know and more difficult to acquire other network information. However, the weak tie has the advantages in the aspect of information, from which we can get more novel news. Therefore, compared with strong tie, weak tie has great effects on the diffusion of information. In terms of social network of entrepreneurs, they developing the re-

lationship with strong tie could cultivate deep emotion and trust among them besides acquire technology, experiences and knowledge. On the side of weak tie, however, they can acquire a great number and more extending information of markets and customers. Entrepreneurs make use of the strong and weak tie to realize the communication of information and resources among the independent clusters of individual social networks. Moreover, this kind of communication could extend the edge of social network of the entrepreneurs and form a positive feedback circle (Putnam et al., 1993). In this way, it is easier for entrepreneurs to acquire information and resources which recognizing information must use. Based on the researches of Nahapiet and Ghoshal (1998) and Ardichvili et al. (2003), we formed a model about social capital of strong and weak ties to impact on the opportunity recognition.

Empirical Study and Hypotheses

Social ties increase the probability that the individuals will recognize more new entrepreneurial opportunities. The individuals must have a past access to different types of resources and information to recognize the profitable business opportunity and this is facilitated through the social ties of the individuals. The required resources and information about the suitability of recognized opportunities is obtained by the social ties of the person such as the information about the feasibility of different opportunities, the sources of business opportunities, trustworthy investors and suppliers, production and marketing locations, and so on (Birley & Westhood, 1994). Cooper and Dunkelberg (1986) found that entrepreneurs often start businesses related to their former occupations. Micro businesses are particularly dependent upon the advice of friends and relatives to retain confidentiality as well as personal control (Bennett & Robson, 1999). Moreover, individuals who come from families who own businesses or from community networks that own or encourage self-employment will utilize their individual-level social capital resulting in more successful discovery activities than those who do not (Davidsson & Honig, 2003).

Baron and Markman (2000) and Tang (2010) states entrepreneurs who connect with people from different fields and locations can use pattern recognition and peripheral vision to spot opportunities in unlikely situations. In this regard, Fuentes et al. (2010) showed that social capital provides access to scarce resources, which, in turn, can help entrepreneurs exploit opportunities. Entrepreneurs gather more information when they interact with weak ties than they do when interacting with strong ties (Kontinen & Ojala, 2011a, b). This is attributed to the fact that entrepreneurs manage a higher number of weak ties. Indeed, they interact with a variety of people only occasionally. The main proponents of this view are Alvarez and Busenitz (2001), Ardichvili et al. (2003), as well as Arenius and Clercq (2005). To the contrary, based on Granovetter's (1992) theoretical construct of embedness [1], Hite (2005) posited that strong (relationally embedded) ties provide critical strategic opportunities and resources for entrepreneurs. The higher the number of strong ties an individual possesses the more resources and opportunities he or she obtains and identifies (Ellis, 2011).

Hills et al. (1997) indicate that entrepreneurs' networks are important to OR. They base their argument on Granovetter's (1973) classic article on the strength of weak ties, which argues that weak ties (including casual acquaintances) are "bridges" to information sources not necessarily contained within an individual's strong-tie network (including friends and family). He argues that the casual acquaintance is more likely to provide unique information than are close friends, because most people have more weak ties than strong. A test of this hypothesis in a survey-based study by Hills et al. (1997) allowed the researcher to contend that "entrepreneurs who have extended networks identify significantly more opportunities" than solo entrepreneurs.

Building upon Granovetter (1973) "the strength

[1] *Embeddedness refers to "the fact that economic action and outcomes, like all social action and outcomes, are affected by actor's dyadic relations and by the structure of the overall network of relations" (Granovetter, in Nohria & Eccles 1992).Granovetter refer to these as the relational and the structural aspects of embeddedness, and he puts the latter in focus in his explanaitions of economi action*

of weak tie", such a network lacks specific information. They usually do not possess skills and experiences, and thus, family and close friends will be less helpful to recognize entrepreneurial opportunity. The information shared by family and close friends is homogenous (Barney & Lawrence, 1989; Granovetter 1973, 1985; Ruef et al., 2003), brings redundant information (Bian, 1997; Ruef, 2002), have local cohesion, and is then considered to be less effective (Marin, 2012; Moody, 2002), although the family and friend ties provide trust (Aldrich et al., 1997; Aidis et al., 2008; Dubini & Aldrich, 1991; Hoang & Antoncic, 2003; Johannisson, 1986; Malewicki, 2005), closeness (Aldrich & Martinez, 2001; Ibarra et al., 2005; Perry-Smith & Shalley, 2003; Ren et al, 2014) and commitment (Johannisson, 1986; Li et al., 2013; Malewicki, 2005). Recently, Rae's (2006) qualitative study pointed out that social experiences and interpersonal networks aid entrepreneurial opportunity recognition ability, thus further facilitating an entrepreneur's entrepreneurial learning process. Dimov (2007) also proposed that the social audience with which one interacts may affect the process of interpreting and integrating information to further help shape the initial opportunity conception.

Research findings regarding the role of strong tie in entrepreneurial opportunity recognition remain unclear. Several studies (Alvarez & Busenitz, 2001; Ardichvili et al., 2003; Arenius and Clercq, 2005) did not find the direct relationship between strong tie and OR to be statistically significant. Others, however, support the notion that strong tie directly explain OR (Granovetter, 1992; Hite, 2005; Ellis, 2011). The researchers will, therefore, assess the direct relationship between strong tie and OR in this study. As such, this study aims to investigate the role of social capital components on opportunity recognition among agricultural entrepreneurs in Kermanshah province. Given the objectives of the present study, then, the following hypotheses are formulated whose tenability is subject to empirical investigation:

H1: The strong tie network component of agricultural entrepreneurs has a positive correlation with its opportunity recognition.

H2: The weak tie network component of agricultural entrepreneurs has a positive correlation with its opportunity recognition.

MATERIALS AND METHODS

This study was a quantitative one in nature and an applied one in purpose. The statistical population of this study consisted of all agricultural entrepreneurs in Kermanshah province (N=136). Based on Krejcie and Morgan (1970)'s sampling table and employing a proportional stratified sampling method (based on the type of opportunity), 102 entrepreneurs were chosen for the study. To this end, based on Wood et al. (2014)'s matrix of opportunity types (replication, reinterpretation, revelation, and revolution) among agricultural entrepreneurs in Kermanshah province, there were two types of replication and revelation entrepreneurs (Table 1). The selected entrepreneur's age mean was 32.44 with a standard deviation of 7.60. Among the respondents, 17 (16.7%) were female and 85 (83.3%) were male. The main instrument of this research was a questionnaire, which consisted of four parts: (a) demographic characteristics (age and gander); (b) strong tie component (3 items); (c) weak tie component (7 items); and (d) opportunity recognition (3 items). In the b and c parts of the questionnaire, the researchers adapted the scale's Granovertter (1973), Nahapiet and Ghoshal (1998) and Ardichvili et al. (2003), and in the d part, the researchers adapted the scale's Gregoire et al. (2010). Based on this scale, the researchers developed 10 items (for DE 4 items, FE 3 items and DA 3 item) with binary answers (No=0, Yes=1). Consequently, the score of OR was between 0 - 10. The validity of the questionnaire was confirmed by a panel of experts (faculty members of agricultural extension and entrepreneurship in Razi University), the Average Variance Extracted (AVE) statistic, as well as discriminant validity. Its reliability index was confirmed by a Cronbach's alpha coefficient and composite reliability coefficient (see Table 2). Data were analyzed by SPSSV23 and Smart-PLS3 softwares in two parts of descriptive and inferential statistics. Frequency, percentage, mean, and standard deviation used as descriptive

Table 1
Statistical Population And Sample Size

Type of entrepreneurs	Population size	Sample size
Replication	95	71
Revelation	41	31

Table 2
Summary of Goodness of Fit Indices for the Measurement Model

Fit indices	SRMR	D_LS	D_G	NFI	Rms_Theta
Value in study	0.07	0.98	0.50	0.93	0.09
Suggest value	<0.10	>0.05	>0.05	>0.80	<0.12

statistics and correlation analysis, confirmatory factor analysis and path analysis were used as inferential statistics.

RESULTS

Descriptive statistics

Overall, it appears that agriculture entrepreneurs in Kermanshah province have high opportunity recognition with a mean 8.18 (SD=1.93) of 10; strong tie network component of agricultural entrepreneurs was moderate to low with a mean 2.90 (SD=0.84) of 5; and weak tie network component of agricultural entrepreneurs was moderate with a mean 3.04 (SD=0.59) of 5.

Structural equation modeling

Structural Equation Modeling (SEM) was used to test for the effects of the strong tie and weak tie components used in the prediction of opportunity recognition among agricultural entrepreneurs in Kermanshah province. According to Hair et al. (2010), it is appropriate to adopt a two-step approach for SEM: first, assessment of the measurement model; second, assessment of the structural model.

Assessment of the measurement model:

The results of a confirmatory factor analysis showed the initial measurement model to provide an acceptable fit for the data (see Table 2). According to Hair et al. (2017), SRMR (Root Mean Square Residual), D_LS (Squared Euclidean Distance) and D_G (Geodesic Distance), NFI (Normed Fit Index) and RMS_Theta (Root Mean Squared Residual Covariance Matrix) indexes are capable of identifying a range of model misspecifications (Dijkstra & Henseler, 2015; Henseler et al., 2014). Thus, Based on Table 2, the hypothesized measurement model with three factors was judged suitable for the SEM.

Convergent validity: A first condition for convergent validity is that the standardized factor loadings should all be significant (t-value > 1.96) with a value of more than 0.50 (Janssen et al., 2008). The results in Table 3 show the t-value for the factor loadings to all exceed 8.61 ($p < 0.01$) and the standardized factor loading to all have values greater than 0.65. This shows good convergent validity for the constructs (strong tie, weak tie and opportunity recognition).

Composite Reliability (CR): For the composite or construct reliability to be adequate, a value of CR= 0.70 or higher is recommended (Nunnally & Bernstein, 1994). As shown in Table 3, all of the constructs had composite reliabilities which were greater than the recommended 0.70. The results also show the AVE estimate for all of the constructs to be above or close to the recommended threshold of 0.50 (Fornell and Larcker, 1981). This shows good composite or construct reliability for the constructs (strong tie, weak tie and opportunity recognition) in this study.

Discriminant validity: According to Fornell and Larcker (1981), if the square root of the AVE estimate for each construct is greater than the correlation between that and all of the other constructs in the model, then discriminant validity is demonstrated. As shown in Table 4, the square

Table 3
Results of Confirmatory Factor Analysis for the Measurement Model

Constructs	Indictors	Standardized Factor Loading	t-value	α	CR	AVE
Strong tie	ST1	0.71	7.79**	0.78	0.87	0.69
	ST2	0.85	21.60**			
	ST3	0.92	49.78**			
Weak tie	WT1	0.76	13.71**	0.89	0.92	0.61
	WT2	0.81	18.78**			
	WT3	0.77	20.27**			
	WT4	0.74	14.72**			
	WT5	0.85	20.98**			
	WT6	0.78	15.63**			
	WT7	0.75	14.02**			
Opportunity recognition	DA	0.82	14.81**	0.71	0.78	0.54
	DE	0.72	10.53**			
	FE	0.65	8.61**			

** Factor loading is significant at the p<0.01 level

root of each AVE is greater than its correlations with the other constructs. This means that the indicators have more in common with the construct that they are associated with the other constructs (Fornell & Larcker, 1981). Thus, discriminant validity has been demonstrated for the constructs (strong tie, weak tie and opportunity recognition) in the measurement model.

2- Assessment of the structural model:

Once a satisfactory measurement model was obtained, the second step, involving SEM, was to test the structural model. The structural model includes the hypothesized relationships among constructs (strong tie, weak tie and opportunity recognition) in the research hypotheses (H_1 and H_2). Having assessed the fit indices for the measurement model, the estimated coefficients of the causal relationships among constructs were examined (Fig. 1).

From Table 5, it can be observed that the positive effect of strong tie in the prediction of opportunity recognition among agricultural entrepreneurs in Kermanshah province is supported (H1: β=0.24, p<0.01), which corresponds to the first research hypothesis. The second hypothesis is also supported, that is the week tie have a positive effect on opportunity recognition among agricultural entrepreneurs in Kermanshah province (H_2: β=0.55, p<0.01).

The findings showed that R^2 for opportunity recognition was 0.45. So that, these tow construct (strong tie and weak tie components) determinants

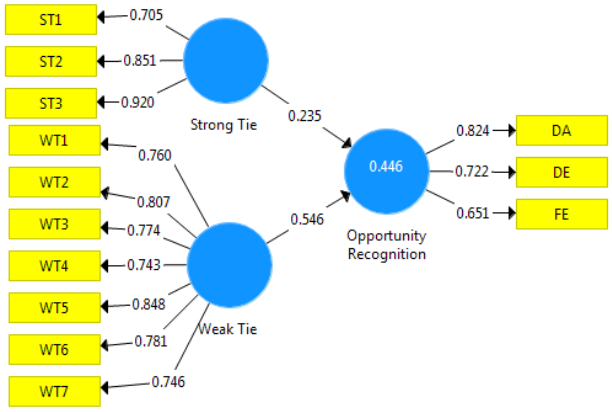

Figure 1. Path model with standardized factor loadings

Table 4
Means, SD And Correlations with Square Roots of the AVE

Constructs	Mean	SD	1	2	3
1- Opportunity recognition	2.75	0.64	0.74[a]		
2- Strong tie	3.03	0.97	0.43**	0.83[a]	
3- Weak tie1	3.15	0.89	0.63**	0.36**	0.78[a]

** p<0.01
[a] The square roots of AVE estimates

Table 5
The Effects of Strong Tie and Weak Tie on Opportunity Recognition

Determinant	Outcome	Path Coefficient (β)	t-value	R^2
Strong tie	Opportunity	0.24	3.31**	0.45
Weak tie	recognition	0.55	6.57**	

** p<0.01

accounts for 45% of the variance in the opportunity recognition among agricultural entrepreneurs in Kermanshah province.

CONCLUSION AND RECOMMENDATIONS

This study sought to examine the role of social capital components in opportunity recognition by agricultural entrepreneurs in Kermanshah province, Iran. The analysis allowed for the confirmation of the hypothesis about the relationship between the OR (using the measure from the population) and social capital components (strong tie and weak tie) among agricultural entrepreneurs. The results of the present study are consistent with the view that socially provided information can indeed be helpful to entrepreneurs from the perspective of identifying opportunities for new ventures. Consistent with the findings of previous research (e.g., Baron and Markman, 2000; Burt, 2004; Obstfeld, 2005; Tang, 2010), the results showed that there is a positive correlation between social capital components (weak ties and strong ties) and OR. In contrast to the findings of research by Granovetter (1992), Hite (2005), and Ellis (2011), the present study suggests that for the agricultural entrepreneurial opportunity recognition, the entrepreneur's weak ties have a stronger influence than the strong ties. Indeed, OR is more likely to be affected by weak ties among agricultural entrepreneurs in Kermanshah province. Given this, Western scholars widely accept that the weak ties of entrepreneurs is widespread and beyond knit clique, so it can bring more resources as a useful "information bridge" (Granovette, 1973; Singh; 1998). Entrepreneur's weak ties can bring them more information, resources, and all kinds of support, in the early stage of business. It is beneficial for entrepreneurs to improve their abilities and affect OR, and then to increase the possibility of agricultural entrepreneurs' success. Family and close friends in the strong ties provides emotional and financial support, too, (Ozgen & Baron, 2007) in the process of agricultural entrepreneurial opportunity recognition.

The results obtained in this study may have major implications for individuals that want to become entrepreneurs. They may also help politicians and educators to enhance social capital components among farmers and young people in rural area by building the community's capacity to work together to address common needs, fostering greater inclusion and cohesion, and increasing transparency and accountability in order to develop the recognition and exploitation of entrepreneurial opportunities in the process of agricultural entrepreneurship creation. The results highlight that educators should enhance the development of relationships between farmers and young people in rural area in order to increase social capital and, consequently, the recognition and exploitation of agricultural entrepreneurial opportunities. Accordingly, the expected results will help to identify how to help Iran's agricultural entrepreneurs and young people in rural area to be more efficient in their opportunity recognition process and how to train them to become better entrepreneurs and create new ventures that generate more value. In sum, in order to advance weak ties, it is recommended that policy makers develop farmer relations and interactions with non-agricultural environments such as diverse institutions and markets and development of agricultural cooperatives and associations in rural areas of Kermanshah province.

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