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Title: Farm tourism as a driving force for socioeconomic development: A benefits viewpoint from Iran

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Farm tourism as a driving force for socioeconomic development: A benefits viewpoint from Iran

Abstract

In recent years, the potential of farm tourism to generate socioeconomic benefits for farmers and suppliers has been established in a range of international contexts. This study aims to identify the main socioeconomic benefits of farm tourism for farming communities in Iran on a national scale. In order to cover agricultural potentiality, nine provinces were selected. Factor analysis of the data extracted nine social and economic factors, which were then analyzed using stepwise regression analysis. The findings indicate that the diversification of Iran's farms into tourism businesses would introduce a new social and economic growth stimulus for local communities. The stepwise regression findings were employed to identify which farm tourism factors are required for socioeconomic development in Iran. Factors were divided into nine categories of socioeconomic development: learning and educational activities improvements, cultural development, community participation, thriving local economy, pursuit of personal values, income generation, quality of life improvement, building business competitiveness, and modifying migration structure. Among these categories, farmers/suppliers in farming communities have primarily concentrated on the pursuit of personal values and income generation.

Key words: Farm tourism; Iran tourism; tourism development; tourism and economy; tourism planning.

1. Introduction

It is evident that farm tourism has made important contributions to the tourism industry, and it has the potential to contribute to the development of countries on a regional, local, and national scale by offering socioeconomic benefits and development opportunities. Previous studies demonstrated that the various forms of farm tourism can generate socioeconomic effects on the local environment and context (McGehee, Kim, & Jennings, 2007; Srisomyong & Meyer, 2015; Tew & Barbieri, 2012; Vogt, 2013). Nevertheless it is mostly argued that farm tourism has become a principle factor in local community development (Flanigan, Blackstock, & Hunter, 2015; Saxena, Clark, Oliver, & Ilbery, 2007). In recent years, farm tourism has become a worldwide phenomenon (Busby & Rendle, 2000), and the development of farm tourism imparts varying degrees of benefits and advantages on local communities. These benefits are categorized into many different fields such as economic, cultural, social, and environmental. For example, developments in farm tourism have led to it becoming a highly profitable sector of the economy in some regions and countries (Karabati, Dogan, Pinar, & Celik, 2009; Liang, 2017). Studies on such socioeconomic benefits may be useful for the future of farm tourism (Karabati et al., 2009). On a normative level, farm tourism and all related kinds of agritourism are identified as contributors to agricultural sustainability, which is increasingly recognized as a crucial challenge across national boundaries (Lupi, Giaccio, Mastronardi, Giannelli, & Scardera, 2017). On the other hand, the concern of farmers to generate supplemental income and employment from activities other than their farming stimulates them to draw their attention to developing farm tourism on their lands (Elson, Steenberg, & Wilkinson, 1995). Furthermore, residents' need to improve their quality of life and make money from welcoming and trading with new people from new cultures and places are the main reasons behind local communities drawing their attention to the development of farm tourism

in their communities (Pearce, 1990). Therefore, local residents can benefit from farm tourism either through direct involvement in the farm tourism sector, such as in restaurants and tour guide services, or through indirect involvement, such as in the manufacture and sale of farm-grown products, and the presenting of cultural performances and food production to meet tourists' needs.

Iran is predominately an agricultural country. Agriculture is one of the most important sectors of the Iranian economy as shown by information from the Central Bank of The Islamic Republic of Iran, which states that the agricultural sector's share is about 4.2 percent of GDP, 20 percent of the employed population, and 15.5 percent of foreign exchange revenues (from non-oil exports). Agricultural and animal-husbandry products, such as pistachios, raisins, and even carpets, have always provided the major non-oil export items (Central Bank of Iran, 2016). The majority of the population lives in rural and countryside areas and most of those people engage in agricultural activities as their main livelihood. Although farm tourism is not yet developed in Iran, the country has the potential to benefit from its advantages. Table 1 and Figures 1 and 2 show Iran's GDP information in 2016, presented by the Central Bank of The Islamic Republic of Iran. However, considerable numbers of household members in agriculture-related communities in Iran are struggling with various socioeconomic issues such as underemployment, insufficient and unbalanced income generation, poverty and poor living standards, degradation in social contexts, lack of public facilities, and lack of economic and social security.

Some of the farm communities and agriculture-based lands in Iran have been diversified into farm-based tourism land in areas that, as well as selling agriculture-based products, offer some kind of entertainment or recreational activities, such as fishing, hosting weddings, food services, overnight stays in farms, private parties, u-pick fruits or vegetables, and recreational self-harvest. In general, most of the activities are based on hospitality services, such as eating and drinking at local

restaurants or shopping across farm lands. Despite the desirable geographical and climate conditions, unique and picturesque landscapes, and modern agricultural efforts, the full advantages of farm-based tourism have not been completely realized by policy decision-makers and local communities, and the need for developing and formulating policies and strategies has not been strongly felt (Ghaderi & Henderson, 2012). Because of this, this study proposes that there is a need to identify new opportunities for the farmers that will ensure social and economic wellbeing and agricultural sustainability.

[Insert Table 1 hereabouts]

[Insert Figure 1 hereabouts]

[Insert Figure 2 hereabouts]

2. Literature review

2.1. Farm tourism background

Farm tourism is perceived as an activity that occurs mostly on individual farms without much collaboration among farms, but in some cases there are community or state regulations. Schilling, Attavanich & Jin (2014) argue that farm tourism has emerged as a vital adaptation strategy among small farms, particularly in states which have advanced urbanization pressures. Farm tourism was primarily developed for its economic benefits and represents a symbiotic relationship for areas where either farming or tourism could be independently justified (Choo & Jamal, 2009). In this regard, Schilling et al., (2014) state that economic motives are often cited as important drivers of farm tourism development. They found that farm tourism development significantly enhances profits of small and intermediate-scale and lifestyle or traditional based farms but has no noticeable impact on the net cash income per acre generated by commercial scale farms those earning

\$250000 or more in annual sales. Furthermore, Giaccio, Giannelli, & Mastronardi (2018) demonstrated that some economic variables like food service and testing, direct selling of farm's products, offering leisure and cultural activities, and public subsidies determine an increase in farm income. In early stages, farm tourism offered the basic elements of tourism, such as accommodation, serving of food and drink, travel experiences, and transport. Over time, with a better understanding of farm tourism, it gradually developed and became more standardized, complicated, and organized, but also more diverse. Developments have included local and national farm tourism organizations, farm holidays, provincial farm holidays (Embacher, 1994) and pilot projects (Gössling & Mattsson, 2002). By the beginning of the 21st century, research about farm tourism in different parts of the world had grown, and attitudes toward farm tourism have been complicated and paint a picture of important variations between communities and countries (Busby and Rendle, 2000; Choo & Jamal, 2009; Di Domenico & Miller, 2007; Fleischer & Tchetchik, 2005; Nilsson, 2002; Sonnino, 2004). Generally, farm tourism can be categorized as a specific form of rural tourism (Forbord, Schermer, & Griebmair, 2012); more specifically, it is defined as a touristic activity that happens in the countryside (Nilsson, 2002). Kunasekaran, Ramachandran, Yacob & Shuib (2011) view farm tourism as a form rural tourism that allows the tourist to visit farms and experience a farmer's daily life. Conventionally, farm-based tourism covers recreational experiences including visits to rural domains allowing tourists to participate in some agritourism-based events, or experience activities and see attractions that are not easily accessible in urbanized areas (Choo, 2012; Henderson, 2009; Kunasekaran et al., 2011; Sznajder, Przezbórska, & Scrimgeour, 2009; Tifflin, 2005). McGehee and Kim (2004) have claimed that the boundaries of farm tourism are demarcated by the activities being in an agricultural setting and on a working

farm. Gladstone & Morris (2000) stated that farm tourism is a tourist activity that interrelates with farm activities and often provides a livability situation for household economy.

2.2. Socioeconomic benefits of farm tourism

Developing farm tourism businesses and activities should be designed from the perspective of suppliers and customers (Karabati et al., 2009; Nickerson, Black, & McCool, 2001; Park, Doh, & Kim, 2014). But we can point to supply side as the primary reason for the recent emergence of tourism as an important rural economic activity (Choo & Petrick, 2014). From the perspective of supply, over time farming communities have experienced social and economic challenges such as a decrease in farm affairs income as traditional methods of agriculture production become less viable (Busby & Rendle, 2000). Thus, farmers have tried to improve the sustainability of their farms and have turned upside down the continuous erosion of net farm income by creating diversity in traditional farm operations (Fleischer & Pizam, 1997). In other words, farm tourism is considered an alternative farm-based activity that can potentially contribute to the sustainability of agriculture through rural economic diversification, with the added benefit that offering educational opportunities to urban visitors can create more community cohesion in rural areas (Choo, 2012; Colten & Bissix, 2005; McGehee, 2007). Clarke (1999) and Knowd (2006) argued that launching farm-based tourism in farming communities offers some potential to generate supplemental revenues. Farm tourism also has fewer uncertainties in diversifying the economy of farming communities and presents a synergistic relationship between local people and agriculture.

Farmers have a tendency to diversify into tourism-related activities and services in their farming areas for sustainable retail sales of farming products. In addition to retail sales of products, there are some other opportunities that can create useful side enterprises of offering tourism services in

farming areas, for example, offering recreation/entertainment services and educating consumers and agritourists about farming and farming-related resources. Yang (2012) demonstrated that the development of tourism in rural and countryside areas improves local people's daily lives, for example by leading to better roads, improved sanitation, and a cleaner living environment. Elson et al. (1995) pointed out that the development of agricultural areas can be a driver to improve the local economy. Davies & Gilbert (1992) claimed that the decrease in depopulation and outmigration, the supporting of local services, and the tendency to carry out conservation projects are the consequences of this local economy improvement.

Yang (2012) explained that migration and employment are two of the most significant manifestations of the development of farm-based tourism in rural and countryside areas. He suggested that farm tourism may reduce outmigration of the youth population to industrialized urban centers. Moreover, farm tourism can be a vehicle for promoting local employment and development opportunities to locals. In sum, farm tourism has been stimulated by and conducted in line with a vision for a diverse, thriving, small-scale farm that remains beneficial and productive, enhances the quality of environment, enriches local culture and customs, and improves the standard of living for farmers. Barbieri (2010) concluded that the adaption of farm tourism can help farmers to retain their rural lifestyles and keep their farmlands, incorporating local food production, recreational opportunities, environmental facilities, cultural preservation, and landscape management. In contrast with economic benefits, many of which can be measured in terms of money, the sociocultural benefits of farm tourism must be seen in terms of social texture (Barbieri, 2013; Choo & Jamal, 2009) and welfare of people and families (Tew & Barbieri, 2012; Yang, 2012), which provides some benefits to consumers and agritourists; for example, it could potentially be a mechanism by which citizen become fond of culture and nature, buy farm-grown

products and learn about agriculture customs (Sonnino, 2004). Barbieri (2010) describes farm tourism as a set of intrinsic and market-related goals, such as locals pursuing a rural lifestyle and farmers socializing with visitors. Farm tourism growth causes positive sociocultural interaction between local communities and tourists (Karabati et al., 2009) and therefore it gives the city or rural area a strong reputation.

Olya, Alipour, & Dalir's (2014) study in Iran showed that farm tourism boosts social resources. The authors also demonstrated that the adoption of farm-based tourism preserves indigenous knowledge about agriculture. In research about identifying sustainability factors among US farming communities with a diversified economic portfolio, Barbieri (2013) concluded that farm-based tourism contributes more to the preservation of heritage and customs than other forms of farm entrepreneurial business. She also found that farm tourism rehabilitated or preserved historic resources and cultural heritage more than businesses and ventures that do not practice farm tourism (Barbieri, 2013).

Community participation is one of the important consequences of farm-based tourism growth in some farm communities. In this regard, according to Olya et al. (2014), development of farm tourism in local communities leads to the participation of local people in decision-making processes. Choo & Jamal (2009) claimed that developing tourism in farming communities increases local residents' involvement in the planning process of the development of local attractions. It also creates good communication among parties involved in policy and decision-making processes. In this way, the role of authorities was found to be significant because they were able to encourage local people toward community participation.

Farmers' diversification into tourism-based services has created significant opportunities for educating communities and tourists about farming and farming resources, which may have useful side benefits (Choo & Petrick, 2014; Olya et al., 2014). According to the analysis of Pearce (1990), locals benefited, especially younger children, since they were able to meet people from different places and cultures within their home (Karabati et al., 2009). Choo & Jamal (2009) stated that the educational benefits of farm tourism must be investigated from the perspective of suppliers/farmers and visitors, and concluded that the progression of tourism can foster learning opportunities for visitors. In addition, it can provide educational programs for local communities. Flanigan et al. (2015) indicated that pursuing educational services for tourists in farming communities can be a driving force for the development of tourism. Yamamoto & Engelsted (2014) found in their study that to attract more tourists farmers can promote teaching and learning about organic farming methods as a visit motivation.

3. Methodology

3.1. Study area

Iran is a country with great history, ancient culture, and a varied geography that give rise to substantial tourism potentials encompassing many national and man-made tourist attractions that present a variety of activities for tourists (Nematpour & Faraji, 2019). There is significant potential for farm-based tourism in Iran. According to Iran's fourth *National Report to the Convention on Biological Diversity* (Secretariat of the Convention on Biological Diversity, 2011), Iran has some specific natural, geographical, and physical phenomena, including two mountain ranges namely Alborz and Zagros, vast sandy deserts, a high plateau with large salt flats, fertile plains, and Caspian Sea and Persian Gulf coastlines. Iran also has a varied climate in the range of arid to

subtropical as well as diverse flora and fauna. Iranian provinces have unique potential in natural, historical, rural, and agricultural tourism, but most foreign tours prefer to visit Isfahan, Fars, and Yazd. In the field of agriculture, some provinces such as Gilan, Mazandaran, and Golestan (in the north of Iran or southern coast of the Caspian Sea) and Ahvaz and Boushehr (in the south of Iran or northern coast of the Persian Gulf coastlines) can help in exploring this potential. These provinces are the main coastal tourism destinations, highlighted by the huge number of tourists in the high season in the summer (about 10 million visitors each year) and specifically in September (see Figure 3).

According to the Food and Agriculture Organization of the United Nations (FAO, 2016), Iran has (in units of 1,000 hectares) a country area of 174,515; a land area of 162,876; an agriculture area of 45,954; and a forest area of 10,691. According to the *Detailed Results of the General Agricultural Census* (Statistical Center of Iran, 2014), there are five farming systems in Iran (highland mixed, rain-fed mixed, dry land mixed, pastoral, and sparse). Figure 3 also provides information about average precipitation, permanent crops, and arable land intensity as a percentage of Iran's agricultural map. The results of the General Agricultural Census indicate that a total of 4,042,811 suppliers/farmers have been identified and listed in the country. Of these, 44 percent were in rural areas and 56 percent were in urban areas.

[Insert Figure 3 hereabouts]

3.2. Data collection and measurement

The study aimed to evaluate and explain the perceptions of local residents about the socioeconomic impacts of farm-based tourism businesses and to further identify the main driving forces behind development, applying those to long-term planning. The study was conducted in Ahvaz, Ardabil,

Boushehr, East Azerbaijan, Gilan, Golestan, Mazandaran, Tehran, and Zanjan provinces. The above sampling method is based on multi-criteria sampling. Thus, factors such as agricultural resources, tourist inflow, infrastructure, water resources, agricultural resources, and livestock are considered in the selection of provinces. Based on these criteria, the provinces with no potential for development of farm tourism were deleted from the list and 9 provinces were randomly selected from the remaining 27 provinces. From a socioeconomic point of view, these remaining provinces can play a role in the future development of tourism activities on farms. The data were collected from 348 farmers/suppliers who lived in the countryside and rural areas of these provinces, over a period of 6 months between April 2018 and September 2018. The authors invited 370 farmers/suppliers to take part in the survey, by farm visits and e-mail, to investigate their opinions about the socioeconomic impacts of farm tourism. Among the 370 returned questionnaires, 22 were excluded because of insufficient information. Thus, as a result, 348 were completely filled and were usable for analysis.

The authors used factor analysis and ratios of sample size to number of variables for selecting sample size. In this study we have 10 variables and, according to various authors (Everitt, 1975; Garson, 2008; Marascuilo & Levin, 1983, in Velicer & Fava, 1998, p. 232), there should be at least 10 cases for each item in the instrument being used; thus, we had to consider 10 ratios of items in this study. This study applied the convenience-sampling method to obtain proportionate samples of farmers/suppliers who have farming land in countryside or rural areas. Selection criteria for respondents participating in this research included having farm land or running farm-based tourism businesses. To collect the data, a self-developed questionnaire comprising two parts was used. The first part included socioeconomic-related items in the form of 37 questions (covering 16 measurement items about economic dimensions and 21 items about sociocultural dimensions) and

the second part comprised 5 demographic items about gender, age, education level, location, and previous occupation. The economic and sociocultural statements were generated based on previous studies (Barbieri, 2010, 2013; Busby & Rendle, 2000; Choo & Jamal, 2009; Karabati et al., 2009; Olya et al., 2014; Tew & Barbieri, 2012; Yamamoto & Engelsted, 2014; Yang, 2012). The statements measured based on a five-point Likert-type scale, the scale of all items ranging from strongly disagree (= 1), disagree (= 2), neutral (= 3), agree (= 4), and strongly agree (= 5). To ensure the reliability and face validity of the questionnaire, we followed previous studies' recommendations. To evaluate the reliability of these 37 items, 10 experts (associate and assistant professors) who had expertise in tourism management and planning were asked to review the proposed measurement instrument. They were asked to clarify the items and comment on whether they were likely to be appropriate for assessing farmers' opinions. The face validity of the dimensionality and inter-correlation was evaluated using Cronbach's alpha and factor analysis.

3.3. Analysis

To analyze the data the authors used SPSS version 20 software. In this regard, in the first stage, descriptive statistics analysis was performed on the gathered data to explore the overall sample profile of the farmers/suppliers. In the second stage, factor analysis was applied to formulate a correlation matrix of the 37 items based on their preferred factors. PCA (principal component analysis) with varimax rotation was used, which was considered an appropriate choice among estimation methods of factor analysis. By applying this method, the authors were able to identify the underlying socioeconomic dimensions. Subsequently, reliability was measured based on Cronbach's alpha to corroborate the internal consistency or reliability of items within each dimension. In the last stage, multiple (stepwise) regression analysis was applied to the underlying influences and main socioeconomic factors. In multivariate regression analysis, an attempt is made

to account for the variation of the independent variables in the dependent variable synchronously (Uyanık & Güler, 2013). In stepwise selection, predictors are deleted at a later stage. So, the subsets of significant variables are different in each step: a predictor that was shown as the best can turn out to be the worst when the other predictors are in the equation. There are two main advantages to analyzing data using a multiple regression model. The first is the ability to determine the relative influence of one or more predictor variables on the criterion value. The second advantage is the ability to identify outliers or anomalies (Jeon, 2015).

The multivariate regression analysis model is formulated thus:

$$Y = \beta_0 + \beta_1 X_1 + \dots + \beta_n X_n + \varepsilon$$

$Y =$ *Dependent variable*

$X_1 =$ *Independent variable*

$\beta_1 =$ *Parameter*

$\varepsilon =$ *Error*

The most popular approach to model selection is the stepwise regression method in which only a small number of subsets are evaluated by either adding or deleting independent variables one at a time. The criterion for adding or deleting an independent variable can be stated equivalently in terms of error sum of squares reduction or F statistic (Neter, Wasserman, & Kutner, 1983). The procedure terminates when no additional independent variables can enter on the basis of F_{in} and no independent variables in the model can be eliminated on the basis of F_{out} .

3.3.1 Significance test of regression linear equation

In the multiple linear regression equation, if there is no relationship between the dependent variable and the independent variable, all coefficients of the independent variables in the equation must be zero. With the multiple regression model, the decision rule is as follows:

$$H_0: B_1=B_2=B_3=\dots B_k=0$$

$$H_1: B_i \neq 0 \quad i=1, 2, \dots, m$$

If, at the 95 percent confidence level, the F statistic calculated from the regression equation is greater than the F value obtained from the graph, the assumption H_0 is rejected or the assumption H_0 is otherwise accepted.

3.3.2 Durbin-Watson test

One of the assumptions of regression is that the observations are independent. If observations are made over time, it is likely that successive observations are related. If there is no autocorrelation (where subsequent observations are related), the Durbin-Watson statistic should be between 1.5 and 2.5 (Durbin & Watson, 1951). In this relation, P is a self-correlation parameter with $-1 \leq P \leq +1$ and V_t is an independent variable assuming $V_t \approx N(0, \sigma^2)$. In this model, when p is positive, self-correlation is positive, and when p is negative, there is a negative self-correlation. At $p = 0$, there is no self-correlation. The following hypothesis was used to perform the Durbin Watson test:

$H_0: p = 0$

$H_1: p \neq 0$

Assuming $p = 0$ means that there is no consecutive correlation, the opposite hypothesis is $p \neq 0$, indicating consecutive correlation.

4. Results

4.1. Profile of respondents

Table 2 shows the demographic characteristics of the participants, including gender, age, education status, and previous occupation. The locations of farms within the various provinces of Iran are also identified.

[Insert Table 2 hereabouts]

4.2. Analysis of dimensions underlying farmers'/suppliers' opinions about socioeconomic benefits

In order to be certain of the suitability of the data and sampling adequacy for each variable, the Kaiser-Meyer-Olkin (KMO) test was employed. Bartlett's test is derived from the likelihood ratio test under the normal distribution. Bartlett's test is known to be powerful if the underlying populations are normal and that is best overall methods to test the homogeneity of variances. With non-normal data, Bartlett's tests can be used if the samples are fairly large. Therefore it is dependent on meeting the assumption of normality (Arsham & Lovric, 2011). In this paper, the KMO test gave a sampling adequacy of 0.822, which shows that the distribution of values in the initial measurement of the socioeconomic dimensions was adequate for performing factor analysis

To identify the functional criteria of the operational behavior of farmers, this study employed exploratory factor analysis. Factor analysis with PCA and varimax rotation was applied to the 37 socioeconomic benefits statements to identify the latent dimensions of farmers'/suppliers' opinions. In this regard, based on Lee, Lee, & Wicks (2004), the authors eliminated the items with a factor loading lower than 0.40, and then the remaining items were factor analyzed again. The procedure was repeated until only items with a factor loading above 0.40 and eigenvalues equal to or greater than 1 were attained. The results of the factor analysis also explain at least 87.037% of the total variance. High factor-loading values in the varimax rotation indicate a high correlation between a factor and its individual items.

Table 3 presents the results of the factor analysis in the form of the PCA method. The factor loadings of all relevant variables in the rotated factor matrix were clearly related to only one factor each. Nine factors had high-reliability coefficients and eigenvalues equal to or greater than 1. Reliability coefficients measured using Cronbach's alpha for the nine factors ranged from 0.07 to 1.00. The resultant nine factors demonstrated specific dimensions of the farmers'/suppliers' attitudes about socioeconomic benefits. The relatively large ratio of the total variance for factor 1 led authors to conclude that "learning and educational activities improvements" illustrated a central distinguishing socioeconomic benefit.

[Insert Table 3 hereabouts]

The opinions of farmers/suppliers with respect to the socioeconomic benefits of farm tourism were evaluated based on the overall mean of each factor. According to Table 3, farmers/suppliers mostly concentrated on "learning and educational activities improvements" followed by "cultural development", "community participation," "thriving local economy," "pursuit of personal values,"

“income generation,” “quality of life improvement,” “building business competitiveness,” and “modifying migration structure,” in that order. The criterion “modifying migration structure” demonstrated the lowest overall mean, implying that farmers/suppliers of tourism farms gain high levels of advantage based on socioeconomic attitudes around the tourism development process. However, the high overall mean of “pursuit of personal values” might be influenced by the low quality of farm life in local communities, i.e., by developing farm tourism in local communities residents tend to continue farming and enjoying their rural lifestyle, because they have benefited from tourism and can improve their current life.

In each category of socioeconomic benefits, farmers/suppliers demonstrated the greatest interest in farm-based tourism development and the related socioeconomic advantages. In addition, the results implied that recognition of the economic and sociocultural advantages of farm tourism might encourage farmers or suppliers to make greater efforts to develop their farm-tourism-based products and services. In relation to “income generation,” it appeared that farmers or suppliers recognize the importance of the economic side of farm tourism and are able to benefit from the financial and non-financial sides of farm tourism. While farm-based tourism increases farmers’ revenue and their net income through activities such as selling agriculture products to tourists and consumers, it also it reduces farmers’ dependency on agriculture production by providing supplemental income and additional revenue through presenting hospitality-based services such as accommodation and eating and drinking. The results show that local economies can be boosted by developing farm tourism in rural farming communities and the creation of more employment opportunities could be realized. Although these opportunities include supplemental activities and part-time jobs in areas such as tour guiding, food services, and internet-based retail, they contribute to local economic diversification and prosperity. In other words, farm tourism seems to be a

convenient diversification strategy because it does not necessarily require excessive resources or investments in farm infrastructure, labor, or equipment.

On the other hand, this low level of modification of migration structure is the result of difficulties and an inadequate wellbeing infrastructure in farming communities, which persuade local people to migrate to urbanized communities to have a better life. Notably, this result also revealed that farm tourism has been proposed to provide an opportunity to make improvements in farm business and to enhance the likelihood of their survival. It also allows the farmers and their families to continue farming and enjoying their local lifestyle. In addition to the economics of the farming profession and diversification of the economy, being able to continue farming life is the main consequence of farm tourism. Being able to continue farming is related to the personal value of “being a farmer,” which allows self-identification and enjoyment of farming. Finally, the results showed that farm tourism development contributes to cultural development and community participation. For example, farm-based tourism resulted in the preservation of unique cultural traits and local customs of an area, especially related to food production. In the field of community participation, farm-based tourism increases local residents’ involvement in the planning and development of local attractions.

4.3. Factors influencing socioeconomic development

To uncover the factors influencing socioeconomic development, this research employed stepwise regression analysis. In this analysis, “socioeconomic development” was employed as the dependent variable. This variable was quantitative. The independent variables in the model were learning and educational activities improvements, cultural development, community participation, thriving local economy, pursuit of personal values, income generation, quality of life

improvement, building business competitiveness, and modifying migration structure. Multiple regression analysis was performed with the nine factors to produce a statistically significant model. Basically, testing of assumptions is an important task for the researcher utilizing multiple regression. When a researcher decides to use multiple regression, they must refer to the required assumptions of regression and then follow with a test of regression, which they need to check their data meet, in order for their analysis to be reliable and valid. To check model assumptions, we used three criteria: homoscedasticity, multicollinearity, and normality (Osborne & Waters, 2002). The first section in Figure 4 shows the multiple linear regression model summary and overall fit statistics. We find that the adjusted R^2 of our model is 0.730 with the $R^2 = 0.735$. This means that the linear regression explains 73.5 percent of the variance in the data. The Durbin-Watson $d = 2.059$, which is between the two critical values of $1.5 < d < 2.5$. Therefore, we can assume that there is no first-order linear autocorrelation in our multiple linear regression data.

[Insert Figure 4 hereabouts]

The next output is the F-test. The linear regression's F-test has the null hypothesis that the model explains zero variance in the dependent variable (in other words $R^2 = 0$). The F-test is highly significant; thus, we can assume that the model explains a significant amount of the variance in farmers/suppliers' development perceptions. The information in the output also allows us to check for multicollinearity in our multiple linear regression model. Tolerance should be > 0.1 or variance inflation factor (VIF) < 10 for all variables, which they were:

- income generation: tolerance = 0.678, VIF = 1.474
- thriving local economies: tolerance = 0.781, VIF = 1.281
- quality of life improvement: tolerance = 0.525, VIF = 1.907

- community participation: tolerance = 0.733, VIF = 1.365
- building business competitiveness: tolerance = 0.762, VIF = 1.312
- learning and educational activities improvements: tolerance = 0.497, VIF = 2.012
- cultural development: tolerance = 0.766, VIF = 1.305.

Finally, we checked for normality of residuals with a Normal P_P plot. The plot illustrated that the points generally follow the normal (diagonal) line with no strong deviations. This indicates that the residuals are normally distributed.

The output of the multiple regression analysis also indicated that, in the model, income generation, thriving local economy, quality of life improvement, community participation, building business competitiveness, learning and educational activities improvements, and cultural development were major factors affecting socioeconomic development: ($p = 0.000$), ($p = 0.000$), ($p = 0.000$), ($p = 0.000$), ($p = 0.000$), ($p < 0.001$), ($p < 0.039$) respectively (see Table 4). These results suggest that the entrepreneurial attitudes and activities of farmers/suppliers are concentrated on creating new benefits through developing farm tourism, such that their business is more likely to proliferate.

[Insert Table 4 hereabouts]

5. Discussion

Farm tourism development in Iran could potentially contribute to the local economy (Schilling et al., 2014) and the rehabilitation of farming communities, and improve the locals' quality of life. Launching new tourism-based businesses on farms might be a good start for socioeconomic development of local communities and improving the quality of rural residents' lives. However, these emerging businesses would not ensure the long-term growth or sustainability of farm-based

tourism businesses. Thus, the competitiveness of farms is the other advantage resulting from launching farm-based tourism business in rural communities, ensuring the sustainability of the socioeconomic development of farming communities.

Farm-based tourism also can be an effective strategy for revitalizing cultural heritage and historical places, providing them with financial income and thus economic growth, particularly in a country like Iran, which is a geographical four-season country with the potential for agriculture from north to south and west to east. Iran also has great potential for offering sightseeing and buying resources to foreign visitors. In this regard, Schilling et al., (2014) pointed out that the economic motives are often cited as important drivers of farm based tourism, and farm-based tourism can be a motivator to prosperity of the national economy. In terms of economic impacts of farm-based tourism on local economy, Giaccio, Giannelli, & MastronardiIn (2018) have demonstrated that some economic variables (food service, direct selling and public subsidies) determine an increase in farm income. Previous studies on other countries (Barbieri, 2010, 2013; Busby & Rendle, 2000; Choo & Jamal, 2009; Giaccio, Giannelli, & MastronardiIn, 2018; Forbord et al., 2012; Flanigan et al., 2015; Karabati et al., 2009; Nilsson, 2002; Olya et al., 2014; Schilling et al., 2014; Sonnino, 2004; Tew & Barbieri, 2012; Yamamoto & Engelsted, 2014; Yang, 2012) indicated that the diversification of farms into tourism businesses (developing farm-based tourism) would introduce a new growth stimulus for local economies, and performing new studies in Iran can encourage domestic farmers to launch new businesses and affairs in their own farms. The previous discussions regard the role of farm-based tourism in local economic and sociocultural development and the possibility of effective farm diversification into tourism. The literature concurs with our findings and demonstrates how farmers/suppliers might reach a desirable level of success and sustainability with such tourism-based affairs and businesses.

To help enhance the long-term viability of farm-based tourism businesses, this study tried to identify the influence of the various factors on the socioeconomic development of Iran in the field of farm-based tourism. In this regard, underlying socioeconomic development factors were identified and the factors influencing socioeconomic development were explored. In other words, this empirical investigation resulted in the identification of a variety of farm tourism factors required for socioeconomic development in Iran. By reviewing previous studies, we discovered the nature and benefits of farm-based tourism. Yang (2012) stated that if farm-based tourism is to contribute to the development of rural communities as conceived, it will be necessary to create a supportive environment for the involvement of village businesses through incentive policies, enhanced access to capital, increased education and training, and facilitation of family-based entrepreneurship.

The factors were divided into nine categories of desirable socioeconomic developments and among these categories farmers/suppliers in farming communities have primarily concentrated on the pursuit of personal values and income generation. This result implies that farmers favor activities that are most likely to yield short-term socioeconomic benefits. Thus, for farmers and suppliers in farming communities, measuring the ratio of profit and loss of the results of the pursuit of personal values and income generation would be easier than measuring the outcome of other development factors, such as cultural development. Likewise, the results support the findings of previous literature (Choo & Jamal, 2009; Flanigan et al., 2015; Karabati et al., 2009; Tew & Barbieri, 2012) which indicated that farm-based tourism can increase the overall revenue and net income of farming community locals and reduce over-dependency on agriculture products. In the case of revenue generation, which is important to farm operators, financial goals appear somewhat disconnected from the economic gains attributed to developing agritourism activities identified in

previous studies (Fleischer & Tchetchik, 2005). These results suggest that policies and initiatives encouraging farm enterprise diversification through farm tourism should emphasize its role not only as a revenue generator, but primarily as a marketing tool to create overall public awareness, potentially boost sales of farm products, and produce several personal and family benefits. The pursuit of personal values can include farm-based lifestyle improvements (i.e., family ties, alternative ways of living, better growing conditions and pristine nature, learning and teaching organic farming methods, and pursuing healthy, organic food production). Indeed, it should be noted that the diversification of farms to include farm-based tourism exposes the entrepreneurial spirit of farmers or operators in presenting hospitality-based services to visitors. Previous publications have also pointed out that, the economics of the farming profession aside, being able to continue farming is favored and is associated with the personal value of “being a farmer” in terms of self-identity as well as enjoying the practice of farming (Tew & Barbieri, 2012). From another perspective, this discussion recalls the argument of researchers in the field of farm-tourism sociocultural benefits that a strong spirit of divergent thinking by farmers or operators is required (e.g., Barbieri, 2013; Choo & Jamal, 2009; Karabati et al., 2009; Olya et al., 2014; Yamamoto & Engelsted, 2014). Following this argument, farm-based tourism contributes to preserving cultural customs and practices, and the unique traits of a local community (especially in relation to food production) and these might improve the tangible and intangible results and sustainability of farm-based tourism and its related businesses. Nevertheless, the success of farm-based tourism requires farmers, after launching new businesses through their farms, to continuously engage in development planning processes in order to boost the attraction of farming communities and expand on the good communication present in policy and decision-making processes.

this study suggests that launching farm-based tourism businesses in farming communities is required to achieve sustainable socioeconomic development. By conducting an empirical investigation of farmers' or suppliers' attitudes toward launching farm-based tourism businesses on their farming lands, this study contributes to identifying factors resulting from tourism that influence the attainment of sustainable socioeconomic development. In particular, this study suggests that seven main factors influence the sustainable socioeconomic development of Iran by introducing farm-based tourism into farming communities.

To conclude, there are opportunities to develop farm-based tourism mainly through promoting traditional and unique agricultural activities, accommodation, value-added products, authentic meals, and local handicrafts and cottage industries as the most promising activities and products. Existing agriculture and tourism-development plans at a national scale in Iran should create favorable infrastructures to develop farm tourism. It is possible to gain various benefits for farming communities by involving them in farm tourism via a suitable approach. The absence of proper initiatives at policy level directly targeting farmer participation in this kind of tourism has hindered farm tourism development as a viable strategy for social and economic development. Initiating farm tourism in Iran should include planning and policy making through a systematic approach.

5.1 Limitations of study

This study carries some limitations that need to be accounted for. First, most of the farmers or suppliers were not familiar with the English language and so the authors had to provide two types of questionnaire in doing the survey. The present study is the first study that has tried to forecast the impact of farm tourism on socioeconomic development in Iran, and thus the researchers had no foreknowledge of the problems of doing such work. Due to the novelty of the tendency toward

tourism development combined with a lack of social and economic understanding in Iran's local communities, most farmers, suppliers, and farm operators did not participate properly in this study. Although the study was designed to capture nine provinces (Ahvaz, Ardabil, Boushehr, East Azerbaijan, Gilan, Golestan, Mazandaran, Tehran, and Zanzan) representing different agricultural, social, and economic realities, caution is advised in extrapolating the results beyond these nine states. Other provinces in Iran may have different characteristics (e.g., agricultural context, landscape composition, more specialized farm-tourism activities) that can influence the preferences of their stakeholders, who therefore may have a different understanding of the meaning of farm tourism. There are some other factors that could be consider as driving force in socioeconomic development of Iran (such as: social and cultural values, governmental policies, happiness, demographical variables and so on) that may impact on socioeconomic development of Iran. However, these are not considered in the statistical analyses. Finally, this paper focuses on a specific country and this could reduce the generalization of its results.

5.2 Recommendations/policy implications

It is recommended that farm-based tourism is promoted among farming communities as a driving force for Iran's socioeconomic development. Therefore, giving due consideration to national farm-based tourism development through strategic investment and proactive policy is vital. Particularly, developing farm tourism in line with national-level agriculture and tourism-development programs would be a more beneficial approach to attain socioeconomic development. It is also recommended that separate farm-based tourism projects are established, based on ongoing government development programs in small-scale areas such as villages. In the first stage, selected areas, especially rural areas, should be helped to launch farm-based tourism activities and businesses via pilot models to learn lessons and scale up farm tourism. In this regard, farmers or suppliers who

have the willingness and capacity to conduct farm tourism on their own farming lands should be identified in the beginning. There is a need for greater integration between the Cultural Heritage, Handicrafts and Tourism Organization and the Ministry of Agriculture Jihad of Iran to develop specialized farmers' organizations that can initiate, develop, and promote farm-based tourism. These steps will also help maintain the responsibility and liability of the stakeholders and avoid unwanted interference by exterior groups of people in farm-based tourism businesses, with continuous monitoring and follow-up. In particular, farmers require proper assistance and guidance to successfully integrate farm-tourism businesses into their farm operations. Farmers' current awareness, training, and guidelines on farm-based tourism activities are not satisfactory, and there is need for efficient action to develop farm-based tourism among farming operators. These actions should focus on improvements in farm-based tourism business.

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Tables

Table 1. Gross domestic product (GDP) by various economic sectors based on Central Bank of Iran (CBI, 2016).

	2014	2015	2016
• Agriculture	5.4	4.6	4.2
• Oil	4.5	7.2	61.6
• Manufacturing and mining	5.4	-6.1	2.2
• Services	1.4	-2.3	3.6
• GDP	3.2	-1.6	12.5
• Non-oil GDP	3.0	-3.1	3.3

Table 2. Demographic profile of respondents (N = 348).

	N	(%)		N	(%)
Gender			Location		
Male	319	(91.1)	Ahvaz	24	(6.90)
Female	31	(8.9)	Ardabil	33	(9.48)
Age			Boushehr	21	(6.03)
20–30	9	(2.60)	East Azerbaijan	57	(16.38)
31–40	87	(25.0)	Gilan	60	(17.24)
41–50	121	(34.77)	Golestan	19	(5.46)
Over 50	131	(37.64)	Mazandaran	53	(15.23)
Education status			Tehran	70	(20.11)
Secondary and below	218	(62.64)	Zanjan	11	(3.16)
University	101	(29.02)	Previous occupation		
Post-graduate	29	(8.33)	Farmer	231	(66.38)
			Non-farmer	116	(33.62)

Table 3. Results of factor analysis of farmers’/suppliers’ opinions about the socioeconomic benefits of farm tourism

Item	Loading	Eigen value	Variance explained	Cronbach's α	Mean	Overall mean
Factor 1: Learning and educational activities improvements		5.779	15.620	.952		3.66
1. Tourism development motivates local people to learn about preservation of local customs and unique cultural traits of an area, especially related to food production	.892				3.63	
2. Tourism development improves public awareness and communication skills of locals for hospitality	.916				3.62	
3. Increase in tourist visiting rates in the county improves agricultural education	.888				3.61	
4. Tourism development motivates us to learn about farming and preservation of agricultural heritage	.909				3.65	
5. We can improve our eating and drinking habits by communicating with tourists	.906				3.66	
6. We can learn and teach about organic farming methods by establishing tourism in our farm	.500				3.78	
Factor 2: Cultural development		4.290	11.594	.997		3.28
7. Tourism development draws locals' attention to protecting and improving local cultural heritage	.956				3.28	
8. Tourism development improves locals' sense of belonging to exchange and promote local culture	.953				3.27	
9. Tourism development revives the local values of our county	.955				3.28	
Factor 3: Community participation		4.193	11.333	.968		3.62
10. Tourism development increases local residents' involvement in the planning processes of developing local attractions	.910				3.53	
11. Good communication among parties involved in policy and decision-making processes is one of the positive effects of development of tourism in our county	.931				3.59	
12. With the prosperity of tourism in our county, community involvement is encouraged by local authorities	.913				3.51	
13. Prosperity from tourism in our county increases the general awareness of the local community	.840				3.85	
Factor 4: Thriving local economy		3.850	10.406	.906		3.36
14. Tourism generates opportunities for employment on the farm particularly for family members	.885				3.59	
15. Farm tourism stimulates the local farm economy and creates employment opportunities for locals	.901				3.61	
16. I think that supplemental activities and part-time jobs (tour guiding, food services and internet-based retail businesses) should be allowed by developing farm tourism	.897				3.62	
17. Thriving farm tourism in our county has increased consumption of local products	.600				3.10	
18. Farm tourism leads to local economic diversification	.596				3.11	
19. Farm tourism provides an opportunity to increase the likelihood of farm business survival	.600				3.12	
Factor 5: Pursuit of personal values		3.096	8.368	.978		4.00
20. Prosperity of tourism in our area improves the relationships of farm-based families	.900				3.97	
21. Tourism allows me and my family to continue farming and enjoying our rural lifestyle	.950				4.02	
22. Tourism allows my family to pursue healthy, organic food production	.939				4.02	
Factor 6: Income generation		2.906	7.855	.775		3.87
23. Farm tourism increases overall revenues and net income and reduces dependence on agriculture production	.698				3.30	

24. Farm tourism can generate income for all family members through selling agriculture products	.652				4.04
25. We can focus on farm tourism generating some off-season revenue	.608				4.05
26. Farm tourism enhances supplemental income for farm families in times of economic distress	.590				3.94
27. Launching farm tourism here provides additional revenue allowing my family to keep farming	.673				4.00
28. Farm tourism boosts my quality of life by improving tax revenues and increasing personal income	.473				3.82
29. Developing tourism in the county allows us to make money from a hobby/interest	.409				3.96
Factor 7: Quality of life improvement		2.848	7.697	.993	3.56
30. Farm tourism development increases locals' emotional wellbeing via leisure or culture	.801				3.56
31. Farm tourism improves our standards of daily living through business opportunities and improvements in public services and facilities	.849				3.58
32. Our material wellbeing is increased considerably by tourist spending generating supplemental income	.800				3.54
Factor 8: Building business competitiveness		2.837	7.667	.932	3.44
33. We can increase direct sales of value-added products and other products	.870				3.33
34. Development of farm tourism in our county contributes to stimulation of local businesses such as restaurants and shops	.917				3.51
35. Providing services such as accommodation and entertainment for tourists will be a challenge for local suppliers	.903				3.49
Factor 9: Modifying migration structure		2.404	6.497	.932	2.7
36. Tourism development improves community public facilities and situations and helps to reduce outmigration of local residents to urban communities	.891				2.91
37. Non-local workers that have rich knowledge, skills and abilities are attracted and retained in rural communities	.934				2.58
Total variance			87.037		

Table 4. Multiple regression of farm tourism impacts on socioeconomic development.

Independent variables	Unstandardized coefficients	Standardized coefficients	t-value	Sig.
(Constant)	-1.709		-8.503	.000
Income generation	1.136	.833	24.598	.000
Thriving local economies	.255	.223	7.047	.000
Quality of life improvement	-.174	-.206	-5.341	.000
Community participation	.177	.193	5.907	.000
Building business competitiveness	.132	.139	4.365	.000
Learning and educational activities improvements	-.146	-.137	-3.456	.001
Cultural development	.055	.066	2.069	.039

$R^2 = 0.730$, $F = 134.966$ ($p = 0.000$)

Dependent variable: socioeconomic development

Inputs: learning and educational activities improvements, cultural development, community participation, thriving local economy, pursuit of personal values, income generation, quality of life improvement, building business competitiveness, modifying migration structure

Method: stepwise

Figures

Figure 1. Economic sector's contribution to GDP growth based on Central Bank of Iran (CBI, 2016).

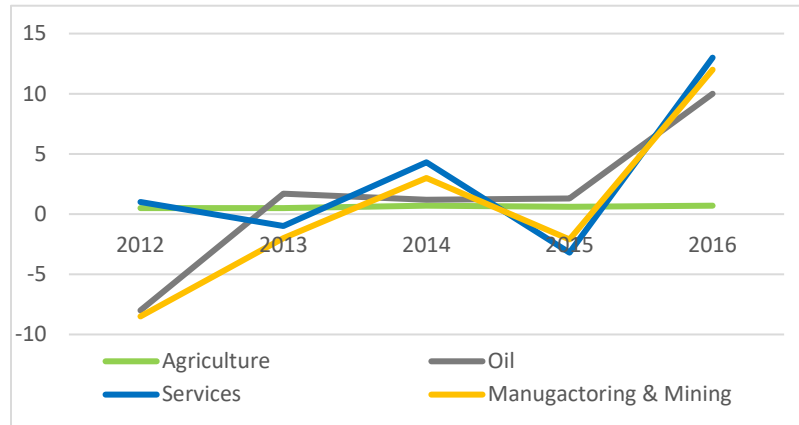


Figure 2. Share of employment by various economic sectors based on Central Bank of Iran (CBI, 2016).

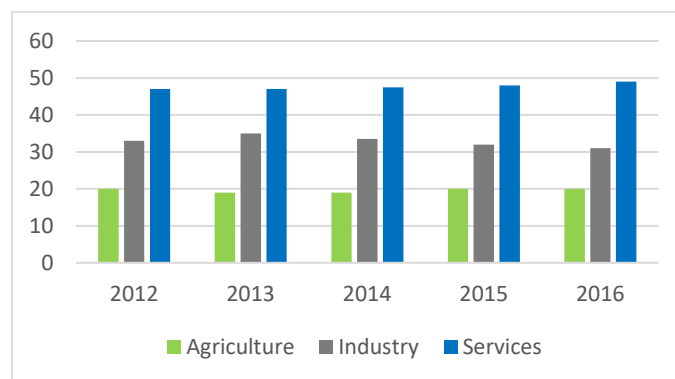


Figure 3. Geographical maps of Iran produced by authors based on *Detailed Results of the General Agricultural Census (2014)*

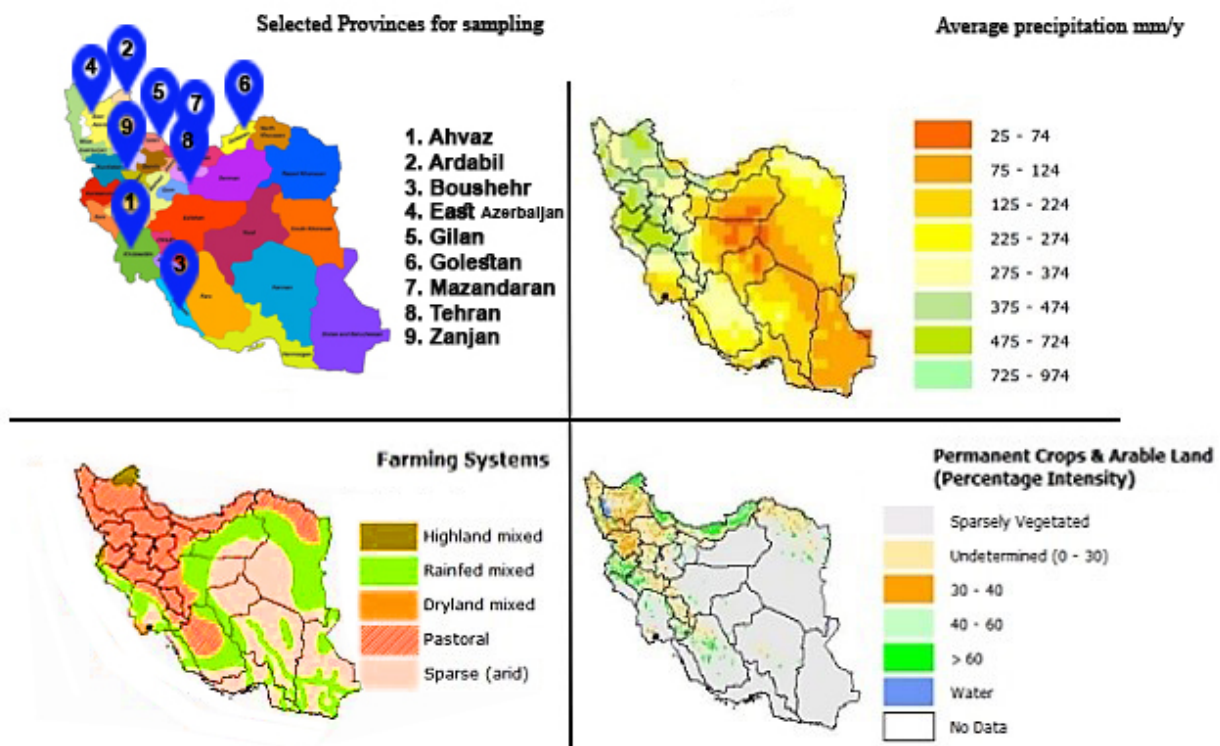


Figure 4. Visualized results of the multiple regression (Normal P_P plot of regression standardized residual and scatterplot)

